REPUBLIC OF KENYA

MINISTRY OF HEALTH

Standard Operating Procedures for ICD 11 Coding and Medical Certification of Cause of Death

SEPTEMBER 2025

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FOREWORD

Accurate, consistent, reliable mortality and cause of death data are vital for identifying preventable deaths, planning and tracking priorities for public health interventions. Reliable health information is the cornerstone of effective public health planning and policy. The adoption and implementation of the International Classification of Diseases, 11th Revision (ICD-11), marks a significant milestone in strengthening health information systems by providing a modern, comprehensive and globally harmonized framework for classifying diseases and health conditions.

This Standard Operating Procedures (SOP) document has been developed to guide health professionals, coders, and certifying clinicians in the correct application of ICD-11 for mortality coding and the medical certification of cause of death. It is designed to promote uniformity, accuracy and adherence to international standards, thereby improving the quality of mortality data produced.

Reliable cause-of-death data not only informs national health policies and strategies but also contributes to global health monitoring and research. By ensuring that medical certification and coding practices are consistent with ICD-11 standards, we enhance our ability to track disease trends, monitor emerging health threats, and allocate resources where they are most needed.

This SOP is intended to serve as both a practical reference and a training resource. It emphasizes the roles and responsibilities of certifying physicians, health records staff, and coders, while providing clear instructions and examples to minimize errors and discrepancies.

It is my sincere hope that this document will support all stakeholders in producing high-quality mortality statistics that reflect the true health status of our population. By working together to uphold these standards, we contribute to better decision-making, stronger health systems, and ultimately, improved health outcomes for all.

Dr. Patrick Amoth, CBS
Director General for Health

Acknowledgement

The development of the Standard Operating Procedures (SOPs) for Morbidity and Mortality ICD-11 Coding and Medical Certification of Cause of Death (MCCoD) has been made possible through the collective efforts, dedication, and expertise of Morbidity and Mortality Central Coordinating unit which was appointed by the permanent secretary for Health, state department of Medical Services.

We extend our sincere gratitude to the health information management professionals, clinicians, coders, and public health experts whose valuable insights and practical experience informed the structure and clarity of these SOPs. Their commitment to improving the accuracy, consistency, and reliability of health data has been instrumental in shaping this document.

Much appreciation to the Government of Kenya through the Ministry of Health which took a leading role in the entire process and Vital Strategies for the technical and financial support.

We acknowledge and express our gratitude to all individuals who tirelessly contributed towards the development and validation of the Standard Operating Procedures (SOPs) for Morbidity and Mortality ICD-11 Coding and Medical Certification of Cause of Death (MCCoD)

Directorate of Digital Health, informatics Policy and research, Vital Strategies, Civil Registration services, Kenya National Bureau of Statistics, Kenya medical Practitioners and Dentists Council, Nairobi Funeral Home and County Government,

Our appreciation goes to the technical working group and reviewers who diligently evaluated each section, providing constructive feedback that strengthened the quality and usability of the final product.

Finally, we recognize all health workers and stakeholders who will implement these SOPs. Their dedication to high-quality data collection and certification remains essential to improving health outcomes, planning, and policy development.

List of Abbreviations

ANACOD	Analyzing Mortality and Cause of Death
API	Application Programming Interface
BID	Brought in Dead
COPD	Chronic obstructive pulmonary disease
CSV	Comma Separated Value
DORIS	Digital Open Rule Integrated Selection
EMR	Electronic Medical Record
HRIO's	Health Records and Information Officers
ICD 11	International Classification of Diseases, 11th Revision
IO	Investigation Officer
KHIS	Kenya Health Information System
MCCoD	Medical Certification of cause of Death
MMCU	Morbidity and Mortality Central Coding Unit
SNOMED	Systematized Nomenclature of Medicine
SOP's	Standard Operating Procedures
UCOD	Underlying Cause of Death
WHO	World Health Organization

Definition of Key Terms

Stem Codes	The primary codes that represent a disease or condition.
Extension Codes	Add detail to stem codes (e.g. severity, anatomical location).
Post Coordination	Combines stem and extension codes to create a more specific diagnosis/cause of death.
Pre Coordination	Uses a single code that already includes multiple concepts.
Cluster Coding	Groups multiple codes to describe complex clinical scenarios.
Multiple Parenting	A concept that can belong to more than one category, reflecting clinical reality.
Sanctioning Rules	Define which code combinations are valid, required, or prohibited.
Residual Categories	Includes “Other” and “Unspecified” codes for broader classification.
Diagnosis Timing	Indicates whether a condition was present on admission or developed later.

CHAPTER ONE

INTRODUCTION

Overview of ICD 11

The International Classification of Diseases and Related Health Problems (ICD) is a tool for recording, reporting and grouping conditions and factors that influence health. It contains categories for diseases and disorders, health related conditions, external causes of illness or death, anatomy, sites, activities, medicines, vaccines and more. ICD-11 has been designed to serve semantic interoperability of individual data, reusability of recorded data, for use cases other than health statistics, including decision support, resource allocation, reimbursement, guidelines and more. Health information systems are increasingly based on digital (electronic) reporting and coding. ICD–11 is designed to be used in such environments but can also be produced in a printed version for use in paper-based systems if needed. It translates diagnoses of diseases and other health problems into alphanumeric codes, allowing storage, retrieval, analysis of morbidity and mortality data facilitating comparison across different countries or regions.

Purpose

To provide a standardized process for coding diseases, conditions, and causes of death using the International Classification of Diseases, 11th Revision (ICD-11) by ensuring data quality and consistency for mortality statistics, public health surveillance, and policy-making. The SOPs will also guide the entire medical certification of cause of death workflow, including filling medical certificates and sequencing causes of death to determine the underlying cause of death.

Scope

The SOP will apply to:

- Facility Health Records and Information Officers (Coders)
- Certifiers in health facilities
- Morbidity and Mortality coding coordinating unit
- Health Information Management Staff at all levels

ICD 11 Implementation Rules

National Modifications - Must be approved by WHO maintenance bodies to preserve international comparability.

Annual Updates - ICD-11 is updated regularly to reflect medical advances and user feedback.

Use of DORIS Tool - For automated mortality coding based on ICD-11.

Training & Transition - Countries are encouraged to use WHO's ICD-FIT platform and follow structured implementation guidelines.

CHAPTER TWO

Roles and Responsibilities for Morbidity and Mortality Coding

a) Clinicians/Certifiers

Clinicians are the primary source of information for both morbidity and mortality coding. Without accurate documentation and proper death certification, coders cannot assign the correct ICD-11 codes, leading to poor-quality health data. Clinicians, therefore, play a central role in ensuring that health statistics truly reflect the population's health status. Roles include:

i. Accurate Documentation

- Record complete, precise, and legible clinical notes in patient files.
- Clearly and correctly document
- Main diagnosis (the primary condition treated or investigated).
- Secondary conditions (complications or sequelae).
- Comorbidities (co-existing diseases that may influence outcomes).
- Relevant procedures (surgical, diagnostic, therapeutic).

Note: Use clear medical terminology rather than abbreviations or non-standard terms that coders may misinterpret.

ii. Medical Certification of Cause of Death (Mortality Data)

- Complete the Medical Certificate of Cause of Death (MCCD) according to WHO standards.
- Clearly distinguish between the immediate cause, the underlying cause, and any contributing conditions.
- Complete death certificates with accuracy and clarity, ensuring:
    - ✓ The underlying cause of death is identified.
    - ✓ Contributing conditions are listed in the correct sequence.
    - ✓ Avoid vague terms like "cardiac arrest" or "old age" unless clinically justified.
- Follow ICD-11 guidelines for cause-of-death certification.
- Ensure timeliness in submission to avoid delays in coding and reporting.

iii. Supporting Coders

- Provide coders with all the necessary clinical details so that the correct ICD-11 codes can be assigned.
- Clarify unclear or incomplete records when queried by health records staff.
- Collaborate with coders to ensure coding reflects the true clinical picture of the patient.
- Participate in training sessions to stay updated on ICD-11 requirements.

iv. Ensuring Data Quality

- Provide accurate, complete, and medically valid documentation.
- Adherence to data quality assurance framework; compliance checks, internationally comparable coding and continuous improvement

v. Continuous Learning

- Promote a culture of accountability for high-quality medical records and mortality certification.
- Mentorships and support for regular training Programs to strengthen coders capacity on ICD-11 and medical certification guidelines (CMEs, OJT, Online programs, upskilling)
- Provide feedback to certifiers on unclear documentation; certifiers refine their practices.
- Conduct periodic audits and reviews of coding and certification practices to identify gaps and improve accuracy.

b) Clinicians/Certifiers in Health Facilities with EMR

The clinician will electronically code morbidity and mortality using the ICD 11 browser integrated in the system. The coding process will adhere to coding rules and guidelines for morbidity and mortality. The HRIOs should check if coding was properly done.

c) Health Records and Information Officers (Coders)

HRIOs (Coders) serve as the stewards of health data quality, ensuring that clinical and mortality information is transformed into accurate, standardized, and internationally comparable ICD-11

codes. Their role is critical in producing reliable morbidity and mortality statistics for decision-making at all levels of the health system. Their roles include;

i. Data entry & Coding

Review patient records, discharge summaries, and death certificates provided by clinicians.

- Translate the documented clinical diagnoses, conditions, and procedures into standardized ICD-11 codes.
- Ensure accuracy, consistency and compliance with ICD 11 coding procedures (stem codes, pre-coordination, post-coordination & clustering of diagnoses)
- Input coded data into Health Management Information System for easy retrieval and analysis.

Note: For Health Facilities with EMRs, the HRIO will check the validity, accuracy and completeness of the coded data and will approve the data to be sent to KHIS Tracker.

ii. Data Quality Assurance

- Check that documentation is complete and adequate for accurate coding.
- Conduct data audits on patient documentation to check accuracy and completeness for accurate coding.
- Liaise with clinicians to clarify unclear, ambiguous diagnoses or procedures before coding
- Review and validate coded data for compliance with national and international coding standards before submission to Health Management Information Systems.

iii. Morbidity Coding Responsibilities

- Code all principal diagnoses, comorbidities, complications, and relevant procedures for admitted Inpatients and outpatients.
- Ensure that secondary conditions and risk factors are captured where relevant.
- Support hospital morbidity statistics and case-mix systems used for resource planning and reimbursement.

iv. Mortality Coding Responsibilities

- Assign ICD-11 codes to all causes of death listed on the Medical Certificate of Cause of Death (MCCoD).
- Ensure correct sequencing of immediate, intermediate, and underlying causes.
- Select the underlying cause of death in accordance with WHO ICD-11 rules.

v. Supporting Health Management Information Systems

- Provide high-quality coded data for disease surveillance, policy development, training and health research.
- Contribute to monitoring trends in morbidity and mortality at facility, county, national, and global levels.
- Uphold confidentiality and ethical handling of patient information.
- Support public health surveillance by ensuring timely submission of morbidity and mortality statistics.

vi. Capacity Building

- Keep updated with revisions, updates, and training on ICD-11 coding guidelines.
- Mentor and support new coders in correct coding practices.
- Liaise with clinicians to strengthen documentation quality for improved coding outcomes.
- Engage in Continuous Learning (OJT, mentorship, supervision, online courses)

d) ICT Department and System Developers

- The IT team ensures that ICD-11 tools and systems are technically sound and accessible
  - Integrate ICD-11 APIs and coding tools into hospital and national health information systems. Maintain system updates, backups, and interoperability with other terminologies (e.g., SNOMED CT).
- Support automated coding platforms like Iris and DORIS for mortality coding.
- Troubleshoot access issues and ensure secure data transmission.
- Collaborate with coders and analysts to optimize digital workflows

e) Morbidity & Mortality Coding Coordinating Unit

This unit is the strategic hub for ICD-11 coding governance and quality control:

- Developing and updating medical certification of causes of death and coding guidelines and SOPs in line with MOH standards.
- Facilitate integration of ICD-11 and MCCoD in facility electronic medical records.
- Providing training, mentorship and technical support to certifiers and coding staff at all levels.
- Conducting regular audits of coded data for quality assurance.
- Reporting on ICD-11 and MCCOD activities to the MOH and provide feedback to stakeholders.
- Maintain a central repository of ICD-coded morbidity and mortality data.

CHAPTER THREE

Standard Operating Procedures for Morbidity coding

Morbidity coding begins with the clinician, who documents all relevant information about a patient's diagnosis, comorbidities, complications, and procedures in the medical record during the course of care. This process ultimately informs the discharge summary and serves as the foundation upon which coding is based. Once the patient record is complete, the coder then examines the patient record carefully to identify the primary diagnosis, which is the main condition treated or investigated, along with any secondary diagnoses and procedures performed. Using the International Classification of Diseases, Eleventh Revision (ICD-11), the coder translates the clinical information into standardized codes. Coding rules and conventions are applied to ensure that the primary diagnosis, comorbidities, and interventions are accurate. coded.

ICD-11 coding rules for morbidity data

Morbidity Coding Rule MB1: Several conditions recorded as 'main condition

If several different conditions (that cannot be classified to a single stem code) are recorded as the 'main condition', and other details on the record point to one of them being the 'main condition' (one condition determined to be the reason for admission established at the end of the episode of care), the latter should be selected as the "Main condition" otherwise, select the condition first recorded.

Example

A patient who has a history of Chronic obstructive pulmonary disease (COPD) was admitted for a biopsy of the prostate. The patient was evaluated for COPD. Biopsy was performed and the final diagnosis from pathology results was benign prostatic hypertrophy.

From the discharge summary:

Main condition was recorded as COPD and Benign Prostatic Hypertrophy

Other condition – None

Note: Initially, the clinician formulates a provisional diagnosis based on the patient's presentation. Once the biopsy results are available, the clinician re-evaluates this initial impression and either confirms the suspected diagnosis or revises it accordingly.

Applying MB1:

In this example, one condition was determined to be the reason for admission, established at the end of the episode of care. That is, benign prostate hypertrophy. So:

Main condition - Benign Prostate Hypertrophy ICD 11 Code GA90

Other condition - Chronic obstructive pulmonary disease (COPD) ICD 11 Code CA22.Z

Morbidity Coding Rule MB2

Condition recorded as 'main condition' is presenting symptoms of diagnosed, treated condition.

Example

The patient presents to the hospital with abdominal pain. Investigations reveal acute appendicitis with localized peritonitis and the patient undergoes an appendectomy.

Main condition as per the patient discharge summary: Abdominal pain

Other condition(s): Acute appendicitis with localized peritonitis

Applying MB2

Main condition **-** DB10.01 Acute appendicitis with localized peritonitis

In this example, the symptom 'abdominal pain' was recorded as the main condition, however it was determined to be caused by appendicitis. Therefore, the coder should reselect and code acute appendicitis with localized peritonitis as the 'main condition'.

Morbidity Coding Rule MB3

Where a symptom or sign is recorded as the 'main condition' with documentation that it may be due to either one condition or another, select the symptom as the 'main condition'.

Example MB3

Main condition: Headache due to tension or acute sinusitis

Applying MB3

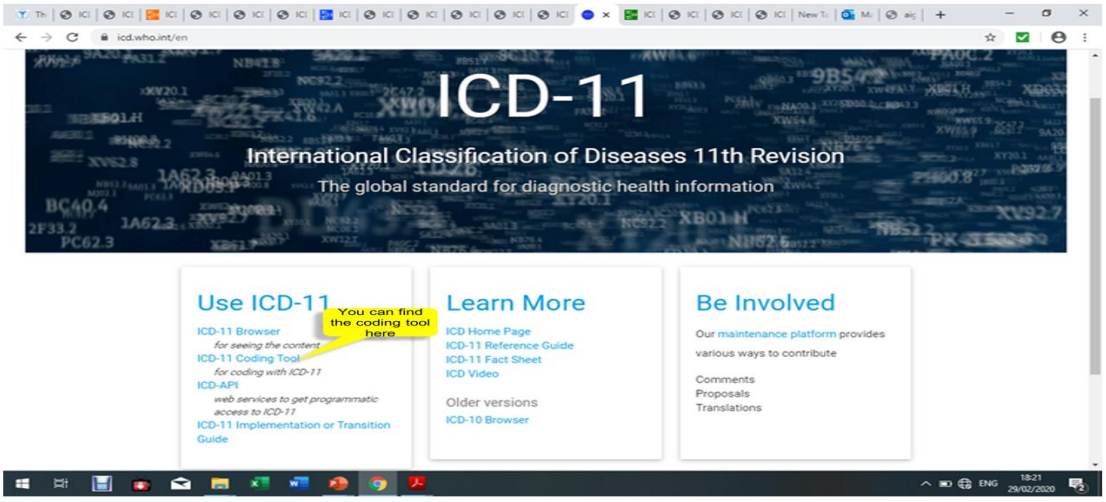
The symptom 'headache' is recorded as the main condition with two possible causes; therefore, the coder should code headache as the 'main condition'.

Main condition – Headache ICD 11 Code MB4D

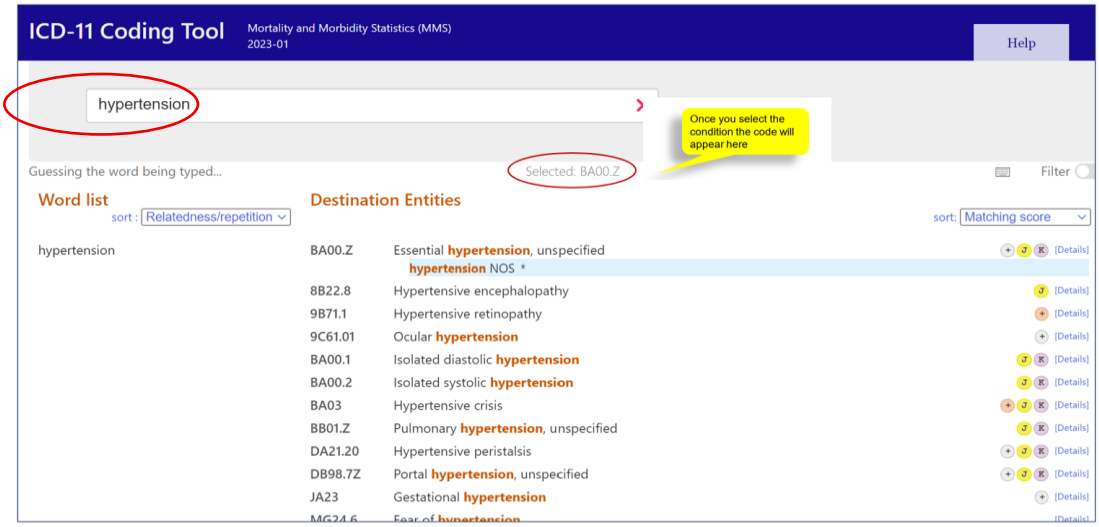
Morbidity Coding Steps

1. Review clinical diagnosis and notes.
2. Identify the **main condition and other conditions treated or investigated**.
3. Assign the **ICD-11 stem code** for the main condition and other conditions

From the browser search for ICD 11 coding tool and open it



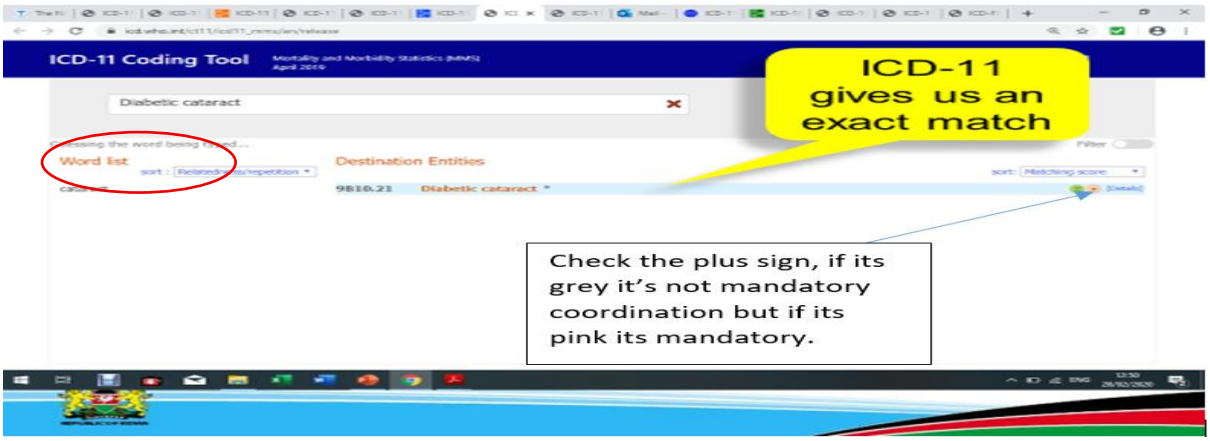
Search for the main condition based on the patient's discharge summary. Once the condition is displayed select the stem code as shown below. Note: if results are highlighted in blue it shows a perfect match.



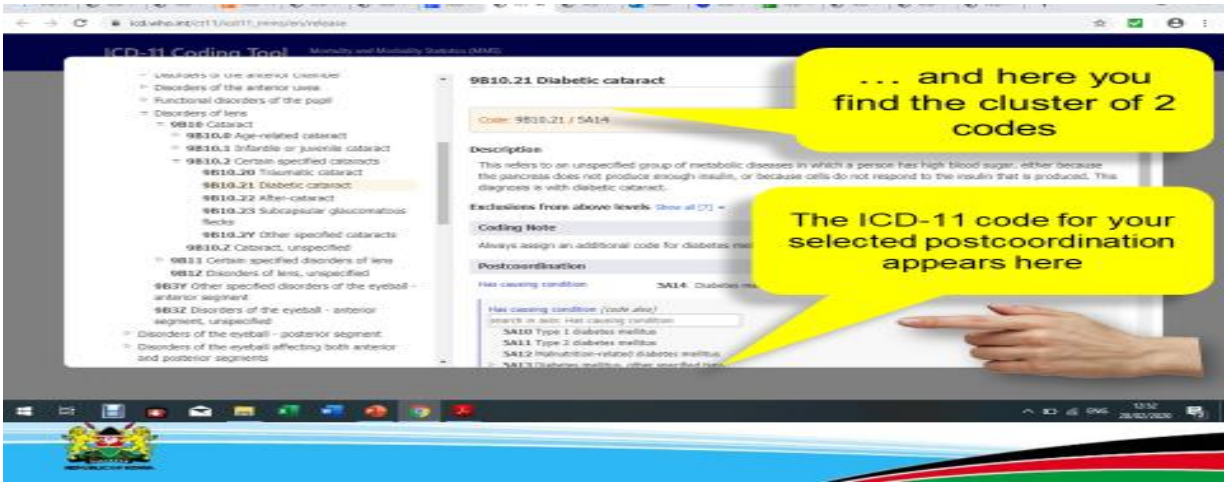
4. Add extension codes for detail, if necessary, such as
   - Laterality
   - Stage
   - Severity
   - Histopathology
5. Where a post coordination exists, determine whether it is mandatory or not mandatory.

   Mandatory post coordination

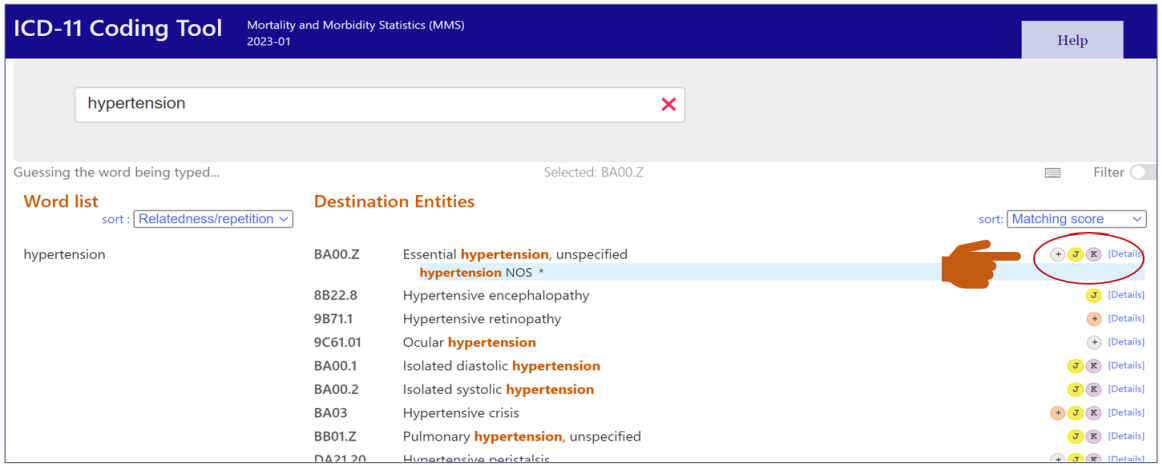
   An example of Diabetic Cataract would require post coordination to determine the type of diabetes as shown below:



Check for Post coordination



6. Assign ICD 11 code **9B10.21/5A14** (In this case we have a cluster code combining two stem codes for diabetes mellitus unspecified and cataract)
7. If the condition is related to Pregnancy or perinatal period click on J (Maternal) or K (Perinatal), you will be directed to related categories in maternal or perinatal chapters respectively. The codes will be assigned from these chapters.



CHAPTER FIVE

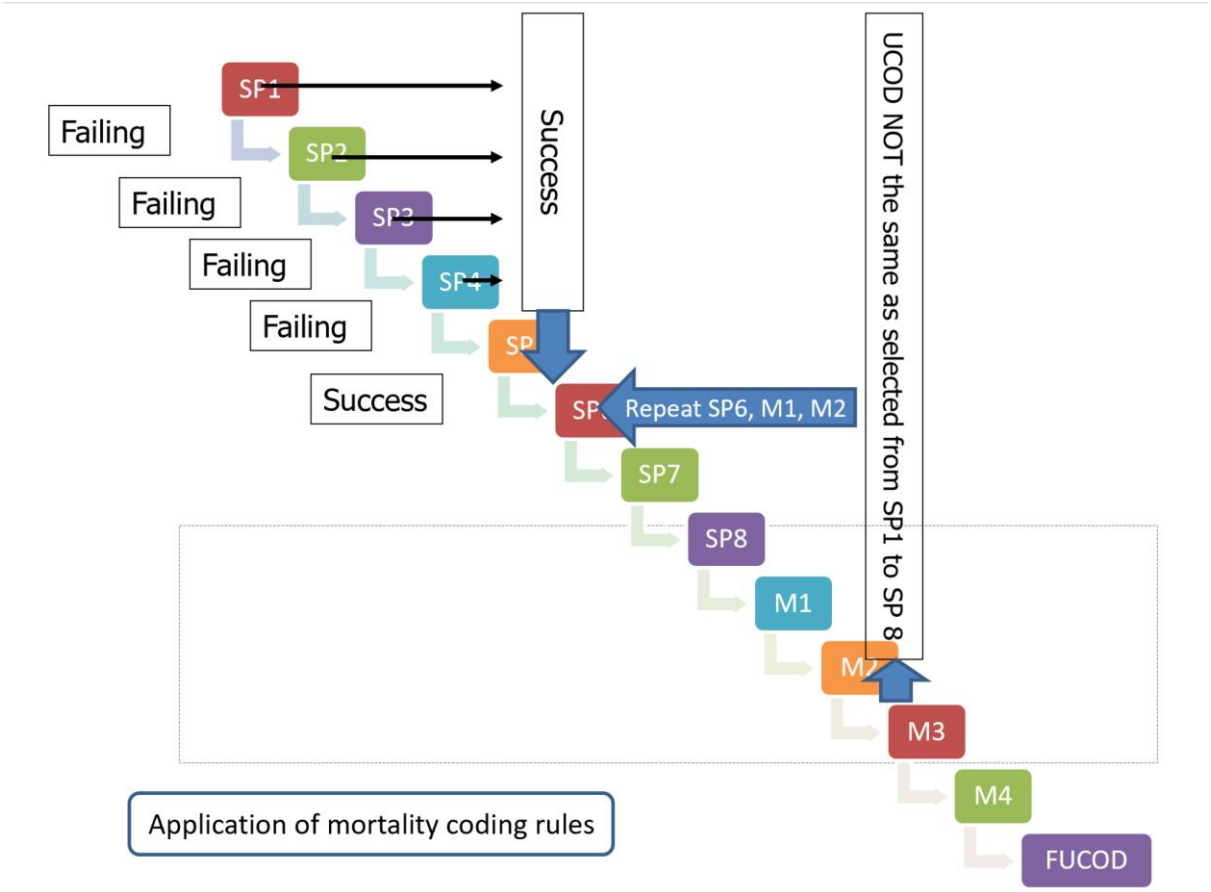
Standard Operating Procedures for Mortality Coding

Mortality coding refers to the transformation of information recorded on death certificates (MCCoD) into standardized codes using the International Classification of Diseases (ICD), enabling structured, comparable mortality statistics.

Rules for ICD-11 Mortality Coding

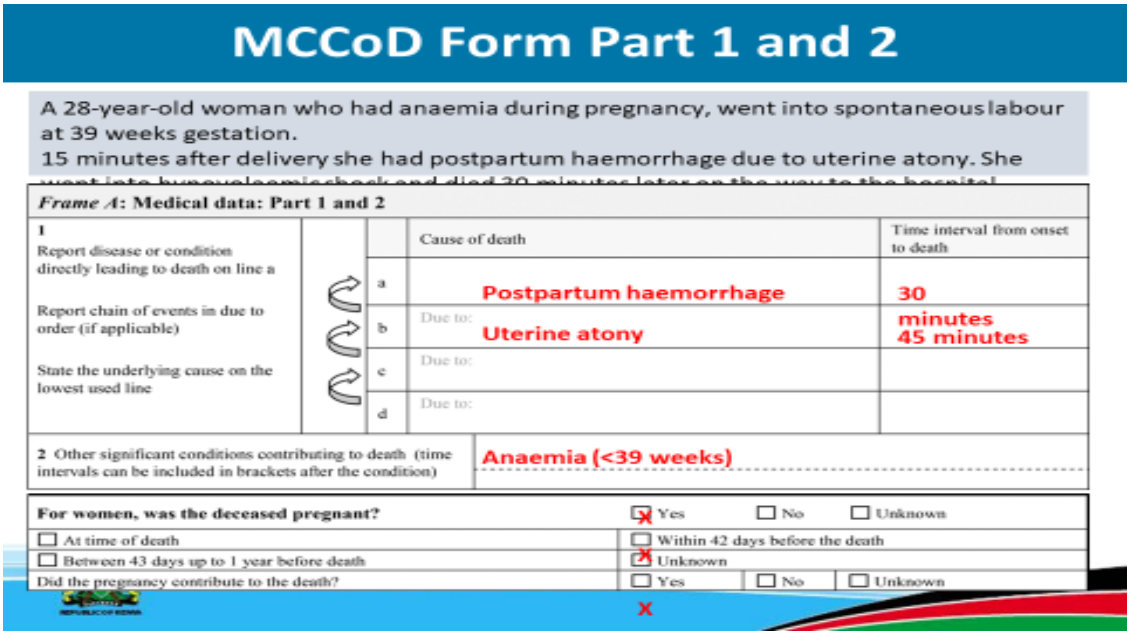
Rules	**Descriptions**
SP1	Only one cause is listed→ that cause is the starting point.
SP2	The first condition on the only line used→ becomes the starting point.
SP3	First condition on the lowest used line that caused all conditions above it.
SP4	First condition in a valid causal sequence (even if not lowest line).
SP5	Terminal cause of death when no causal sequence is present.
SP6	Ill-defined conditions (e.g. “cardiac arrest”) → not accepted as starting point

S P 7	Obvious cause (e.g. trauma, cancer) that clearly led to death.
S P 8	Conditions unlikely to cause death → excluded as starting point.



Steps for Mortality Coding

1. Review MCCoD form (Parts I & II).



2. Identify pathological and chronological sequence of conditions listed in part 1.
3. Code the immediate cause of death, antecedent cause of death and underlying cause of death. The underlying cause of death is selected as the lowest used line of Part 1 if the pathological and chronological sequencing is done correctly and also the coders apply the mortality rules to determine the correct selection of the UCOD.
4. Where the sequencing is not correct, apply mortality coding rules to determine the underlying cause of death.
5. Use:
   - **Stem codes** for all listed conditions
   - **Extension codes** where relevant
6. Assign ICD-11 codes

Example:

Let's break down a case where a patient dies from gastrointestinal hemorrhage caused by ruptured esophageal varices due to portal hypertension from alcoholic liver cirrhosis.

Part I – Sequence of Events Leading to Death

Line	Description	Cause of Death	ICD-11 Code
1a	Immediate Cause	Upper gastrointestinal hemorrhage	ME24.9Z
1b	Antecedent Cause	Ruptured esophageal varices	DA26.00
Ic	Antecedent Cause	Portal hypertension	DB98.7Z

Id	Underlying Cause	Alcoholic liver cirrhosis	DB94.0

Part II – Other Contributing Conditions

Condition	ICD-11 Code	Role
Alcohol dependence	6C40.2Z	Contributed to liver damage

The **underlying cause** (DB94.0) is the disease that initiated the chain of events. The **antecedent causes** (DA26.00, DB98.7Z) are intermediate steps, and the **immediate cause** (ME24.9Z) is what directly led to death.

Morbidity & Mortality Coding in a Digital Environment

After examining the patient and making a diagnosis, the clinician operating the HMIS system navigates to the diagnosis section of the patient's encounter. They then type the diagnosis name into the search bar, and the system displays matching options from ICD-11. From the available selection, the clinician selects the most appropriate code, adds any secondary conditions, and includes details like severity or complications if needed. The system then checks for missing or conflicting information. Once the clinician reviews and confirms the accuracy, the morbidity codes are saved to the patient's shared health record.

In the event of death of the patient, the clinician should complete the digital death entry (the electronic version of a D1). They record the immediate cause of death, any intermediate causes, and the underlying cause, each selected from the HMIS. Additional contributing conditions are coded as well. The system validates the sequence upon the Doris to assist in computing the correct underlying cause of death. After confirmation, the mortality record is finalized and stored.

Both morbidity and/or mortality codes will then automatically be stored in shared health records for reporting, clinical follow-up, and health data analytics.

Note: It is recommended that the preferred HMIS should be one that allows for change of the diagnosis i.e. Confirm, change or replace after investigations and mark primary diagnosis, Codes become part of the official medical record used for disease analysis, public health reporting, billing and can be retrieved for future reference.

Required Tools for Morbidity and Mortality Coding

- ICD-11 Browser
- ICD-11 Coding Tool
- Coding guidelines
- Hospital records or death certificates
- Internet access for regular tool updates
- Discharged Patients File

Quality Assurance

- Daily review and random sampling of coded data to catch cases early.
- Monthly audits by supervisor.
- Feedback sessions with clinical staff to reduce documentation errors.
- Track coding error rates and corrective actions.
- Coder training
- Use of tools.

Data Submission

Morbidity and Mortality individual data is captured in KHIS Tracker and aggregate numbers reported in KHIS Aggregate by Facility HRIO's (coders).

CHAPTER SIX

Standard Operating Procedures (SOP) for Medical Certification of Cause of Death (MCCoD)

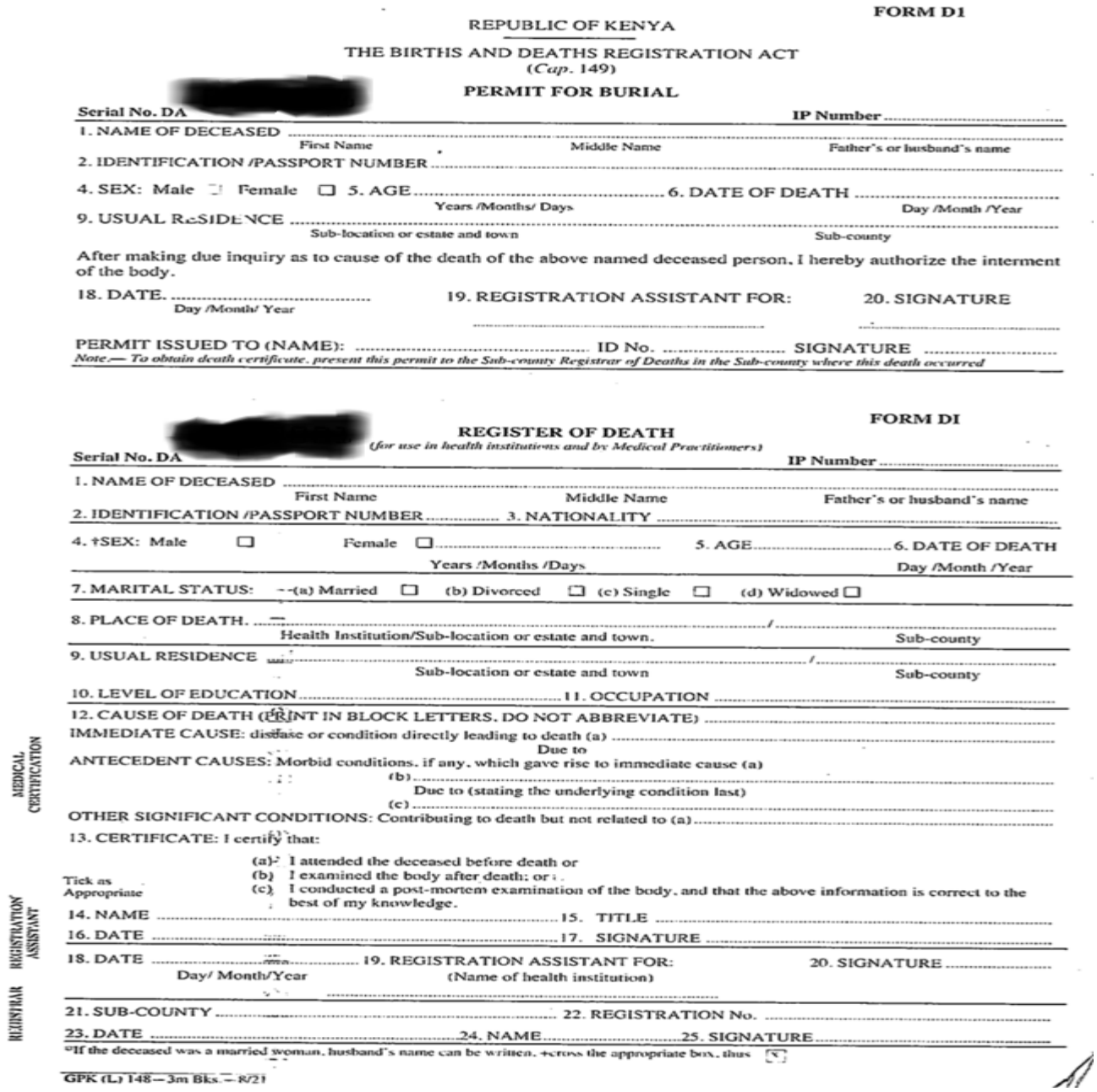
Overview of Medical Certification of Cause of Death (MCCoD)

Medical Certification of Cause of Death (MCCoD**)** is the process of assigning a cause of death by an authorized medically trained Certifier who fully understands the clinical sequence of disease or injury that led to death. A properly completed cause-of-death certificate provides a description of the order, type and association of events that have resulted in the death. This is the responsibility of Certifiers.

Forms used in MCCoD

D1: Medical Certificate of cause of death

- The medical certificate of cause of death(D1) is filled by a clinician/certifier who attended the patient before death or examined the body after death and understands the chronology of what caused the death.
- Includes details about the deceased, the cause of death (immediate, intermediate, underlying, and other contributing factors), and other relevant information.
- Applicable to deaths occurring within the hospital and to all cases requiring post-mortem examination.



FORM D1

REPUBLIC OF KENYA

THE BIRTHS AND DEATHS REGISTRATION ACT
(*Cap.* 149)

PERMIT FOR BURIAL

Serial No. DA [redacted] 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 ..... (Years /Months/ Days) 6. DATE OF DEATH ..... (Day /Month /Year)

9. USUAL RESIDENCE ..... (Sub-location or estate and town / Sub-county)

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. ..... (Day /Month/ Year) 19. REGISTRATION ASSISTANT FOR: ..... 20. SIGNATURE .....

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

Note.— To obtain death certificate, present this permit to the Sub-county Registrar of Deaths in the Sub-county where this death occurred

FORM DI

REGISTER OF DEATH

(for use in health institutions and by Medical Practitioners)

Serial No. DA [redacted] IP Number .....

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

2. IDENTIFICATION /PASSPORT NUMBER ..... 3. NATIONALITY .....

4. †SEX: Male ☐ Female ☐ ..... 5. AGE ..... (Years /Months /Days) 6. DATE OF DEATH (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. / Sub-county)

9. USUAL RESIDENCE ..... (Sub-location or estate and town / Sub-county)

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

MEDICAL CERTIFICATION

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:

Tick as Appropriate

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

REGISTRATION ASSISTANT

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

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

REGISTRAR

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

21. SUB-COUNTY ..... 22. REGISTRATION No. .....

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

†If the deceased was a married woman, husband's name can be written, +cross the appropriate box, thus ☒

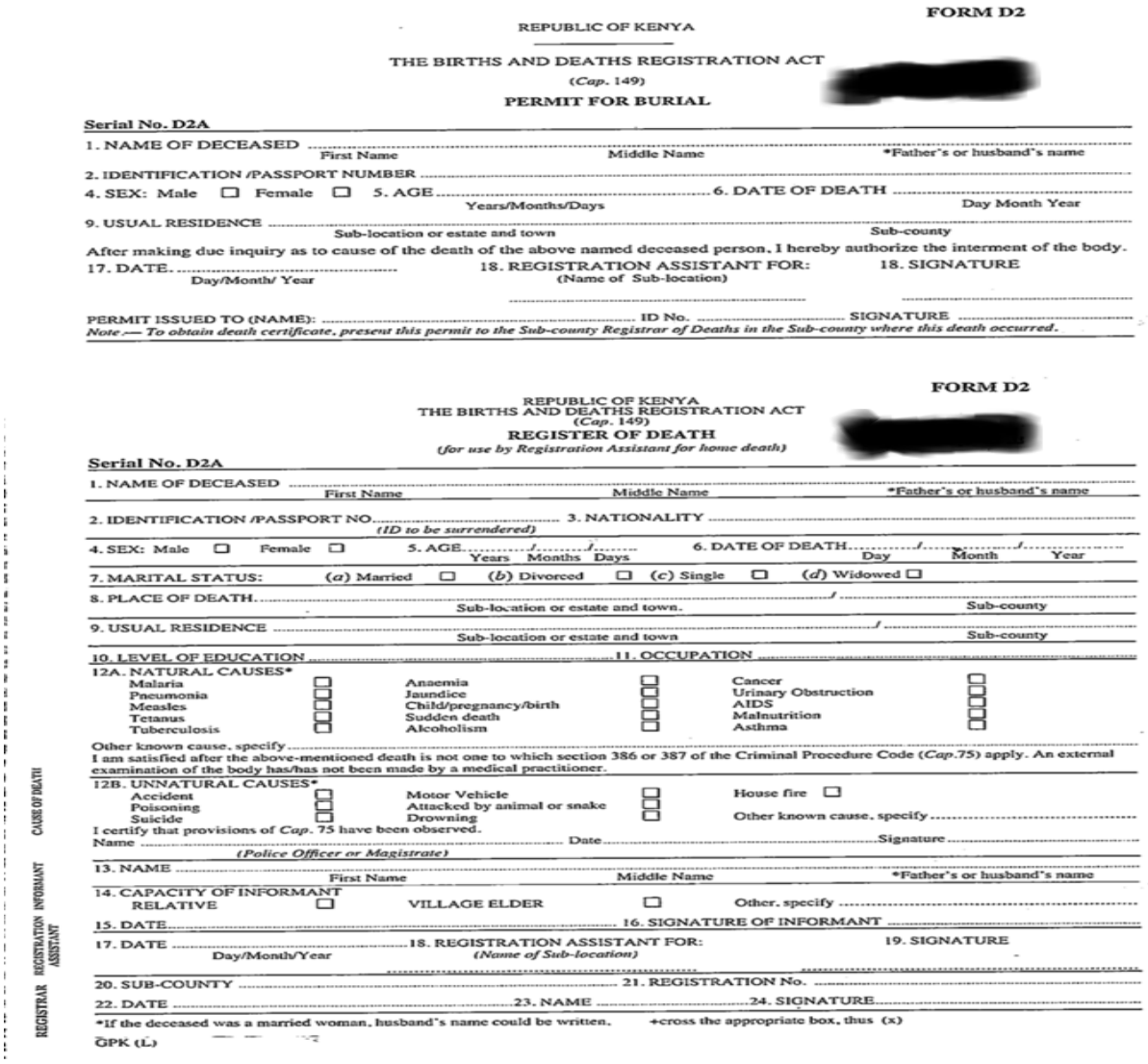
GPK (L) 148—3m Bks—8/21

Top and Bottom parts separated by a perforation: After duly filled in duplicate, the original top part of first page (permit for burial) is torn and given to authorized next of kin/ relative and bottom lower part in duplicate is sent to the Sub-County Registrar, Civil Registration Services.

D2: Assigning Cause of Death occurring in the community (lay reported death)

- For deaths occurring in the community, Form D2 is filled by an Assistant Chief of the sub-location where the death occurred. The original upper counterfoil of the D2 is used as a burial permit.
- The family/next of kin/informant provides necessary information relating to the death to the Assistant Chief.

- The burial permit is used for obtaining the death certificate at the Registrar of births and deaths later upon application by next of kin and payment of prescribed fee.



FORM D2

REPUBLIC OF KENYA

THE BIRTHS AND DEATHS REGISTRATION ACT

(*Cap.* 149)

PERMIT FOR BURIAL

[redacted]

Serial No. D2A

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

2. IDENTIFICATION /PASSPORT NUMBER .....

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

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

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

17. DATE ..... Day/Month/ Year 18. REGISTRATION ASSISTANT FOR: (Name of Sub-location) ..... 18. SIGNATURE .....

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

Note.— To obtain death certificate, present this permit to the Sub-county Registrar of Deaths in the Sub-county where this death occurred.

FORM D2

REPUBLIC OF KENYA
THE BIRTHS AND DEATHS REGISTRATION ACT
(*Cap.* 149)

REGISTER OF DEATH

(for use by Registration Assistant for home death)

[redacted]

Serial No. D2A

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

2. IDENTIFICATION /PASSPORT NO..... *(ID to be surrendered)* 3. NATIONALITY .....

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

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

8. PLACE OF DEATH..... Sub-location or estate and town. ..... Sub-county

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

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

CAUSE OF DEATH

12A. NATURAL CAUSES*

Malaria	☐	Anaemia	☐	Cancer	☐
Pneumonia	☐	Jaundice	☐	Urinary Obstruction	
Measles	☐	Child/pregnancy/birth	☐	AIDS	☐
Tetanus	☐	Sudden death	☐	Malnutrition	☐
Tuberculosis	☐	Alcoholism	☐	Asthma	☐

Other known cause, specify .....

I am satisfied after the above-mentioned death is not one to which section 386 or 387 of the Criminal Procedure Code (*Cap.*75) apply. An external examination of the body has/has not been made by a medical practitioner.

12B. UNNATURAL CAUSES*

Accident	☐	Motor Vehicle	☐	House fire	☐
Poisoning	☐	Attacked by animal or snake	☐	Other known cause, specify	
Suicide	☐	Drowning	☐		

I certify that provisions of *Cap.* 75 have been observed.

Name ..... Date ..... Signature .....

(Police Officer or Magistrate)

INFORMANT

13. NAME ..... First Name ..... Middle Name ..... *Father's or husband's name

14. CAPACITY OF INFORMANT RELATIVE ☐ VILLAGE ELDER ☐ Other, specify .....

15. DATE..... 16. SIGNATURE OF INFORMANT .....

REGISTRATION ASSISTANT

17. DATE ..... Day/Month/Year 18. REGISTRATION ASSISTANT FOR: *(Name of Sub-location)* ..... 19. SIGNATURE .....

REGISTRAR

20. SUB-COUNTY ..... 21. REGISTRATION No. .....

22. DATE ..... 23. NAME ..... 24. SIGNATURE.....

*If the deceased was a married woman, husband's name could be written. +cross the appropriate box, thus (x)

GPK (L)

Top and Bottom parts separated by a perforation: After duly filled in duplicate, the original upper part (permit for burial) is torn and given to authorized next of kin/relative and the original lower part in duplicate (register of death) sent to the Sub-County Registrar, Civil Registration Services

Death Notification Process:

Deaths occurring in health facilities:

STEP 1: Examine the body and ascertain death status.

STEP 2: Get patient file and certify death

STEP 3: Get D1 Form

STEP 4: Clinicians complete the D1 Form (Medical Certification Part) in duplicate and forwards to the Facility HRIO (Registration Assistant) to complete the notification process.

STEP 5: The HRIO issues the original Burial Permit (Upper part of D1) to the next-of-kin.

STEP 6: HRIO uses the completed D1 to capture data in KHIS Tracker

STEP 7: HRIO fills the death register

STEP 8: HRIO submits the completed Register of Death to the Sub County Civil Registrar and files at the facility the copy of the burial permit (upper part of D1)

Note: The next-of-kin uses the Burial Permit along with the deceased's identification documents (National ID, Refugee ID or UNHCR POR if applicable) to bury the body and issuance of death certificate upon payment of the prescribed fees to the office of the Registrar of Births and Deaths.

Brought in dead (BID) to the health facility

A brought-in dead case refers to a person received in a health facility with no signs of life having died before arrival without any medical intervention. The following steps are followed when handling a brought-in-dead case:

STEP 1: Confirm death by the clinician

STEP 2: Refer to the police, who issue an authority note permitting the transportation and storage of the body at the mortuary.

Step 3: The next of kin/family/informant uses the authority note to acquire a burial permit from the assistant chief who fills the D2 form for non-reportable deaths as stipulated by the NCSA Act, 2017.

STEP 4: The IO books for a postmortem examination for reportable deaths under the NCSA.

STEP 5: The Pathologist performs a postmortem then fills the death certification section in section in the D1 form.

STEP 6: HRIO completes the D1 bio data section and issues a burial permit to the next of kin.

STEP 7: HRIO prepares a mortality summary report in a prescribed format and submits it to MOH.

STEP 8: HRIO submits completed D1 forms to the Civil Registrar of Births and Deaths.

Where an autopsy is performed on a body previously issued with a D2 form, the D1 form supersedes and nullifies the D2.

Dead on arrival (DOA)

A patient is declared dead on arrival if there is no sign of life upon examination by a clinician or after unsuccessful resuscitation efforts.

STEP 1: The clinician confirms the death.

STEP 2: Certify the death for non-reportable deaths in-line with the National Coroners Service Act and the acceptable hospital guidelines.

Note: Reportable deaths are referred to the relevant authorities in line with the National Coroners Service Act are referred to relevant authorities for further guidance and action.

STEP 3: The clinician shall fill the name and cause of death in the D1 form.

STEP 4: HRIO completes the D1 bio data section and issues a burial permit to the next of kin.

STEP 5: HRIO prepares a mortality summary report in a prescribed format and submits it to MOH.

STEP 6: HRIO submits completed D1 forms to the Civil Registrar of Births and Deaths.

Unnatural deaths

All unnatural deaths are reported to the police first who collect and take the body to the morgue for autopsy. A post mortem is conducted before filling a D1 form and a burial permit issued to the next of kin for disposal of the body. The filled D1 form should be signed and stamped by the issuing facility.

The next of kin uses the burial permit later to obtain the death certificate from the Registrar of Births and Deaths.

Funeral homes

Funeral homes receive bodies brought by family members/next of kin, the police, other health facilities or other funeral homes.

I. Community Deaths-Natural Deaths

Bodies brought in by the family/next of kin are admitted with a burial permit from the assistant chief of the sub-location where the death occurred.

For community deaths where a post mortem is not requested, the following steps are followed:

STEP 1: The mortician receives the body

STEP 2: The mortician/clinician confirms the death

STEP 3: Verification of the burial permit by the admitting mortician

STEP 4: Admission of the body to the morgue for storage

For community deaths where a post mortem is requested, the following steps are followed:

STEP 1: The mortician receives the body

STEP 2: The mortician/clinician confirms the death

STEP 3: Verification of the burial permit by the admitting mortician

STEP 4: Admission of the body to the morgue for storage

STEP 5: The mortician/IO books for an autopsy upon identification

STEP 6: Pathologist performs the autopsy and fills the name of the deceased and medical certification section in the D1 form.

STEP 7: HRIO completes the D1 bio data section and issues a burial permit to the next of kin.

STEP 8: HRIO prepares a mortality summary report in a prescribed format and submits it to MOH.

STEP 9: HRIO submits completed D1 forms to the Civil Registrar of Births and Deaths.

II. Community Deaths-Unnatural deaths

For unnatural deaths, the bodies will be brought by the police and must be accompanied by an authority note from the police or any other document that may be necessary.

STEP 1: Mortician receives the body

STEP 2: Confirmation of death by the clinician

STEP 3: Admission of the body to the morgue by the mortician

STEP 4: Identification of the deceased person either by next of kin and fingerprint or DNA analysis by the investigating officer.

STEP 5: Book for autopsy upon identification, for bodies requiring postmortem

STEP 6: Pathologist performs the autopsy and fills the name of the deceased and medical certification section in the D1 form.

STEP 7: HRIO completes the D1 bio data section and issues a burial permit to the next of kin.

STEP 8: HRIO prepares a summary report in a prescribed format and submits it to MOH.

STEP 9: HRIO submits completed D1 forms to the Civil Registrar of Births and Deaths.

Transfer from other funeral homes or health facilities

Bodies received from other health facilities or funeral homes are accompanied by a filled burial permit

STEP 1: The mortician receives the body

STEP 2: Verification of the burial permit by the admitting mortician

STEP 3: Admission of the body to the morgue for storage

For transferred bodies where a post mortem is requested, the following steps are followed:

STEP 1: The mortician receives the body

STEP 2: Verification of the burial permit by the admitting mortician

STEP 3: Admission of the body to the morgue for storage

STEP 4: The mortician/IO books for an autopsy upon identification

STEP 5: Pathologist performs the autopsy and fills the name of the deceased and medical certification section in a new D1 form which nullifies the one initially issued.

STEP 6: HRIO completes the D1 bio data section and issues a burial permit to the next of kin.

STEP 7: HRIO prepares a mortality summary report in a prescribed format and submits it to MOH.

STEP 8: HRIO submits completed D1 forms to the Civil Registrar of Births and Deaths.

Determination of Cause of Death

i) In Health Facilities: The determination of cause of death involves identifying the medical reason for a person's passing. This process often involves a Clinician or a Pathologist, who examines the circumstances and may use an autopsy to gather evidence. The cause of death is then recorded on a death certificate.

ii) Brought in Dead: For a "Brought in Dead" (BID) case, the Medical Certification of Cause of Death (MCCoD) D1 is completed by the pathologist after performing autopsy. In case the family cannot afford a fee for a pathologist, then D2 will be completed by the Assistant Chief. The form (MCCoD) should accurately record the cause of death, including the underlying, intermediate, and immediate causes, as well as any contributing factors. Once a postmortem is conducted a D1 is filled and takes precedence over the D2

Procedures for Selection of underlying cause of death

In Kenya, the selection of the underlying cause of death follows standard international practices outlined by the World Health Organization (WHO). This involves identifying the disease or injury that initiated the chain of events leading to death, not necessarily the immediate cause. Factors considered include age, sex, and the specific context of the death (e.g., in a hospital, at home, or due to an injury).

Underlying vs. Immediate Cause:

The underlying cause is the disease or injury that started the sequence of events leading to death. The immediate cause is the final event that directly caused death, but may be a consequence of the underlying cause.

Example: If a person dies from pneumonia, the underlying cause might be HIV/AIDS if the pneumonia was a complication of the weakened immune system caused by HIV. Pneumonia is the immediate cause of death, but HIV is the underlying cause that initiated the fatal chain of events.

CHAPTER SEVEN

Standard Operating Procedures for Reporting and Analysis

Procedures for ICD 11 Data Capture in KHIS Tracker

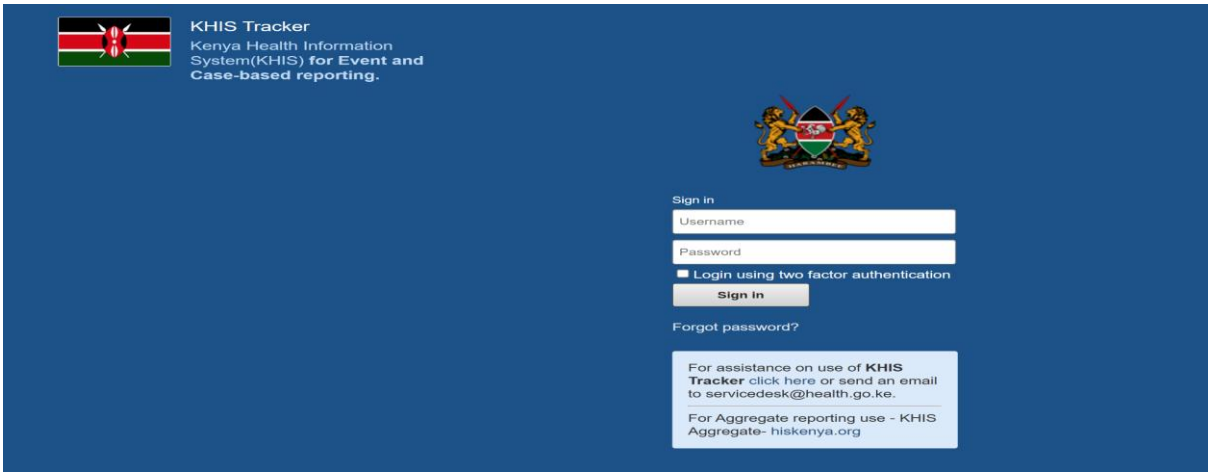
Data capture and analytics play a critical role in the implementation and utilization of the International Classification of Diseases, 11th Revision (ICD-11), a global standard for classifying diseases and health-related problems. KHIS Tracker is the Kenya Health Information System (KHIS) module based on DHIS2 Tracker, used to collect and manage individual-level (case-based) health data in Kenya. It complements aggregate data captured through the standard KHIS (monthly summaries from health facilities), by focusing on individual client data. For ICD 11 reporting, Kenya has adopted the use of ICD 11 App to collect both morbidity and mortality data.

The ICD-11 Cause of Death app is designed to streamline the process of recording morbidity and coding causes of death using ICD-11. The app provides access to two programs; Morbidity for those discharged alive and Mortality (this includes Brought in Dead) and also access to the ICD-11 browser for searching and coding. The app can generate cause of death data using DORIS format and export to ANACoD3 for analysis.

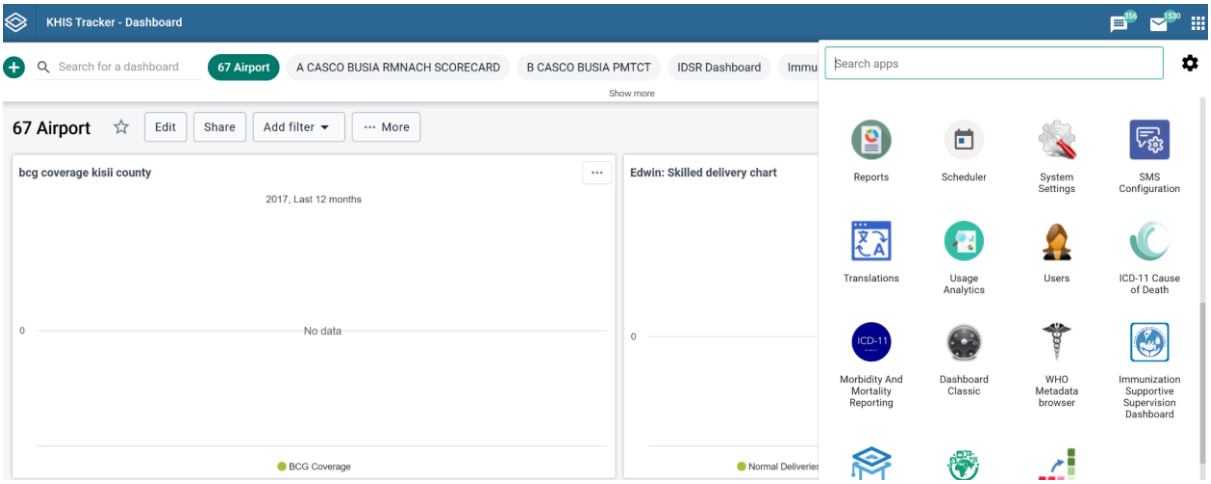
Procedures for reporting Morbidity

Once a patient has been discharged, the patient file is used to capture morbidity data in KHIS Tracker as follows:

Log in to KHIS Tracker (Username and Password)

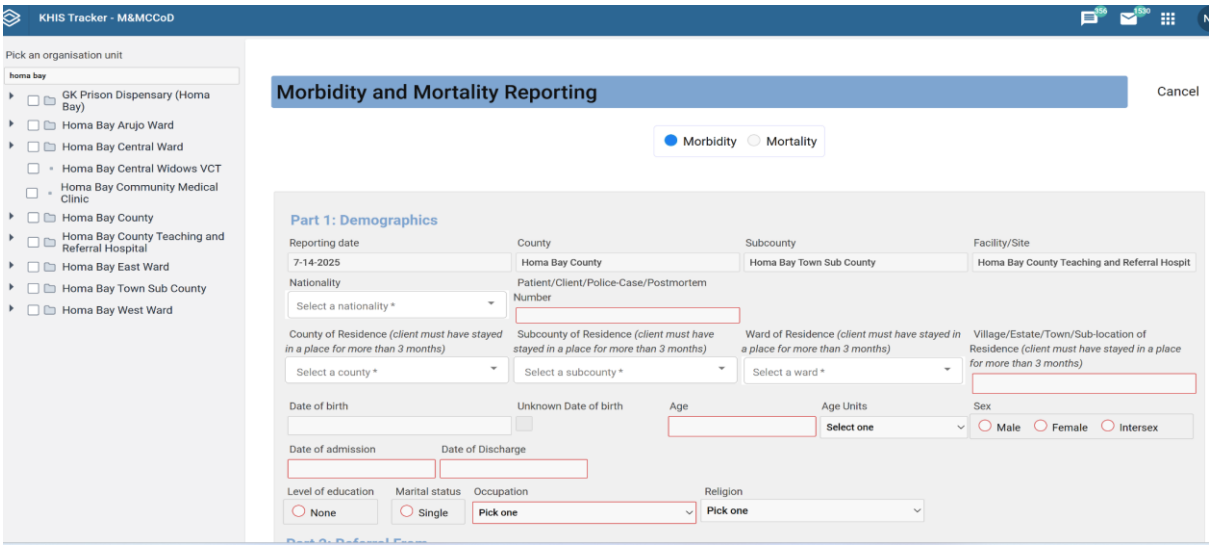


From the Apps Menu select ICD 11 App



Drill down to the facility reporting

Select Morbidity Reporting



1. Record:

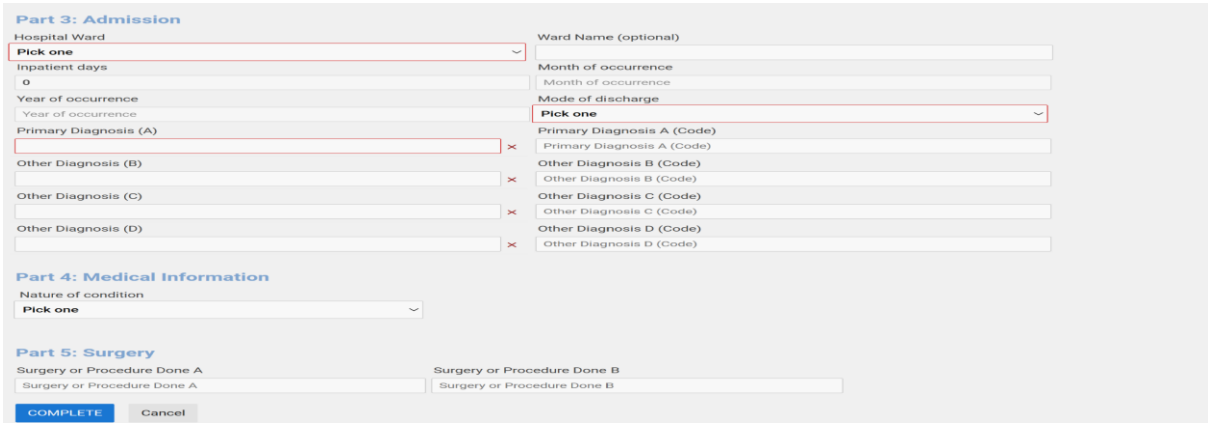
- Demographic details
- Medical Data
- Surgical information if any
- Any relevant information as per the morbidity tool

2. **Assign ICD-11 Codes**:

- Use WHO's ICD-11 browser/coding tool
- Code the primary condition (stem code) and extension codes

Enter as: Stem code: e.g., 5A11.0 or Cluster: e.g., 5A11.0&XY69

- Code the other diagnoses if available



3. Complete the form and submit the record.

Procedures for reporting Mortality

Once a death occurs, the clinician will fill two forms, the discharge of death form (MOH 268B) and the medical certificate of cause of death (D1) form which is used to capture the death in KHIS Tracker as follows:

Log in to KHIS Tracker as above

Select the reporting facility

Select Mortality or BID (for brought in dead)

- Record demographic details
- Record Medical Data
- Assign ICD 11 codes to:
  - Immediate Cause
  - Antecedent Cause(s)
  - Underlying Cause

The system will automatically select the tentative underlying cause of death based on the lowest used line of Part 1 of D1. This selection is further analyzed using DORIS offline version to select the correct underlying cause of death for further analysis using ANACOD3.

Where there are other causes of death that may not directly contribute to the death, they are recorded in Part II of the D1.

Procedures for Reporting Morbidity and Mortality in a Health Facility with EMR systems

Health facility EMR systems are software that stores, manages, and organizes patient medical information electronically, including: Medical history, Diagnoses, Medications, Lab results,

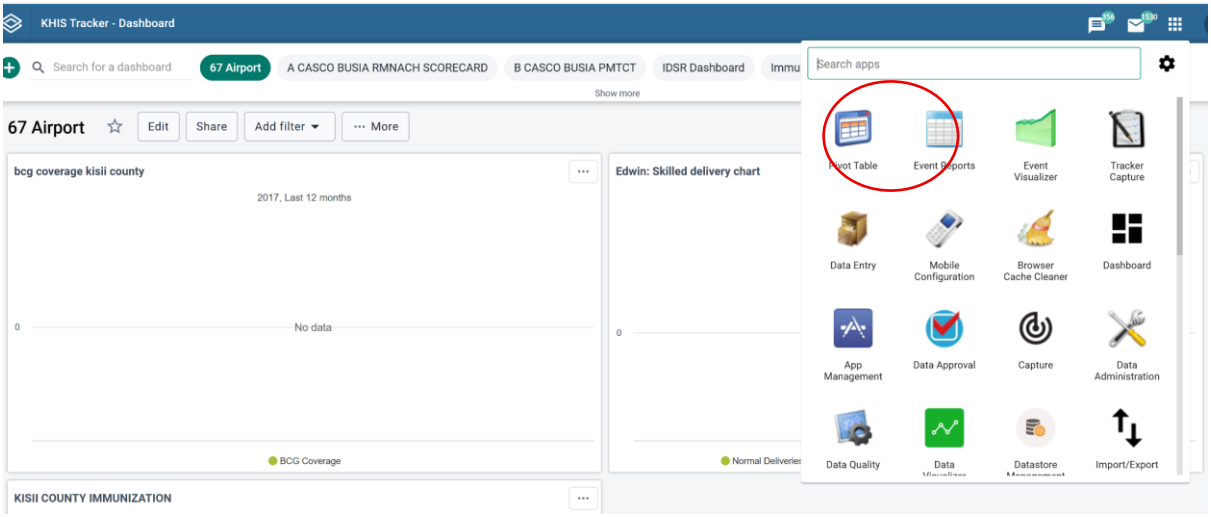
Treatment plans and Clinical notes. The health facilities with EMRs electronically codes morbidity and mortality using the ICD 11 browser integrated in the system while adhering to coding rules and guidelines as prescribed in ICD 11 implementation. The individual level coded data is then sent to KHIS Tracker via API (integration between Health Facility EMR and KHIS Tracker) reducing manual data entry to improve quality of morbidity and mortality data. The data from KHIS is then analyzed to determine the major causes of hospitalization and the underlying causes of death.

Procedures for Analyzing Morbidity and Mortality Data

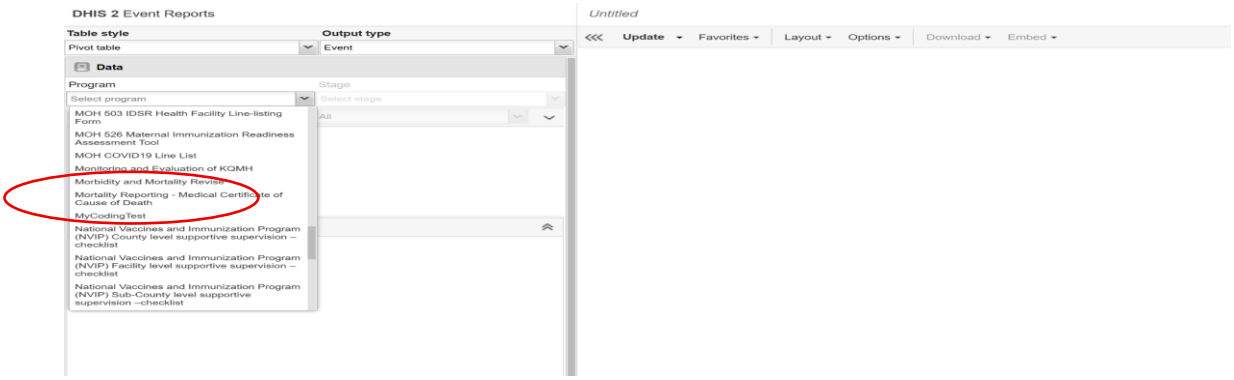
All morbidity and mortality individual level data whether captured directly in KHIS Tracker or imported from a facility EMR will be available in KHIS database to facilitate analysis.

Morbidity Analysis in KHIS Tracker

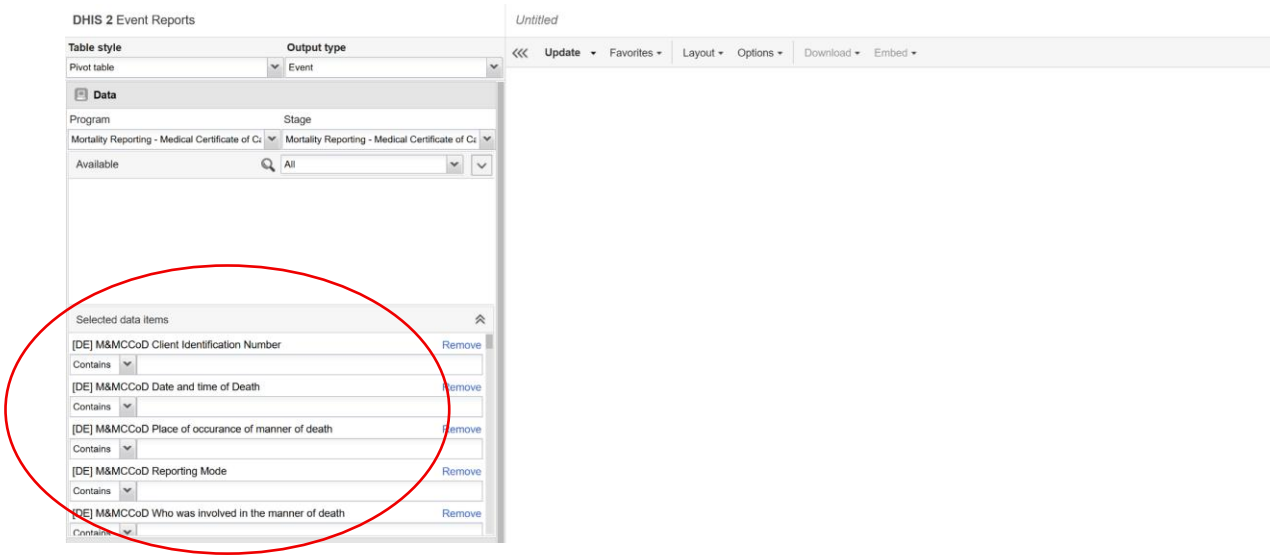
From the Apps Menu select Event Reports



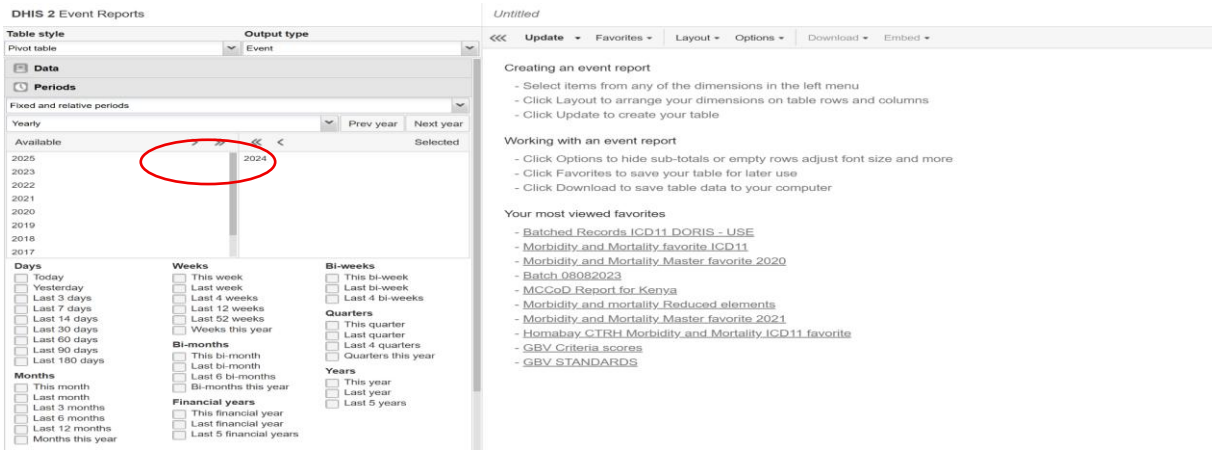
Select Program



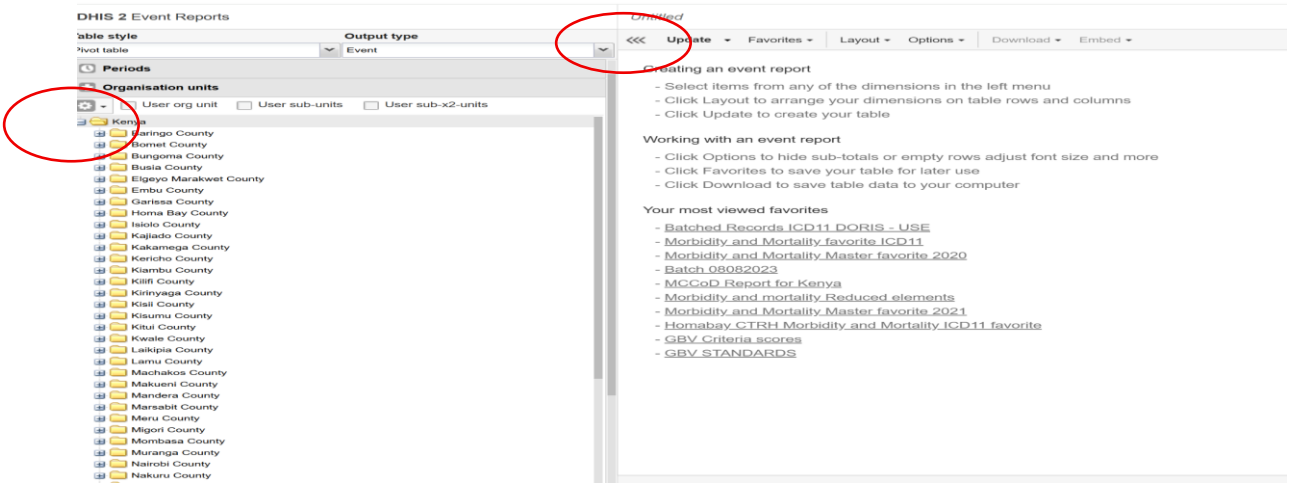
Select data elements



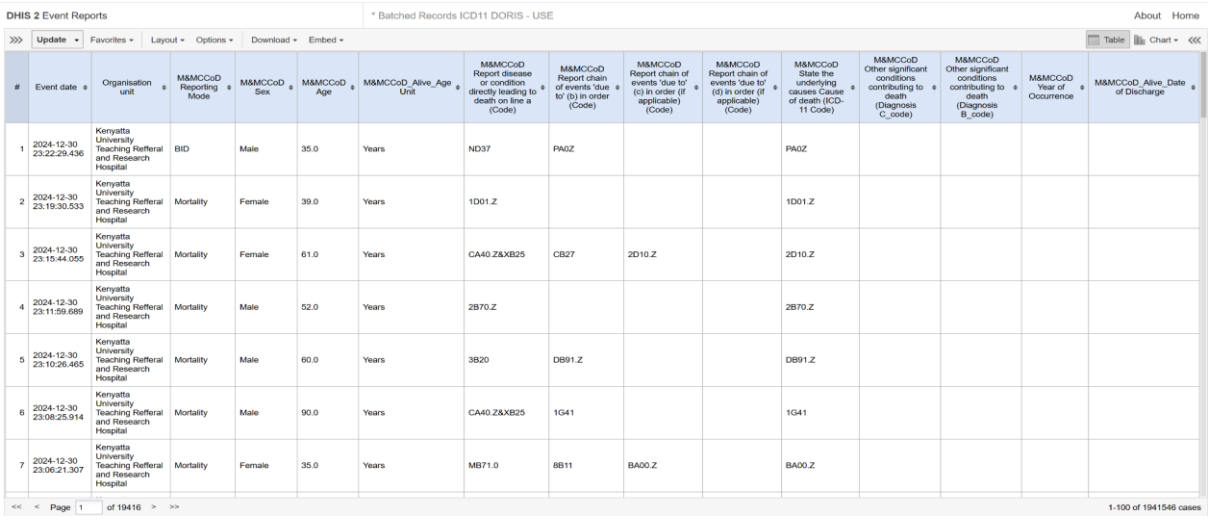
Select Period



Select Organization Unit and Update



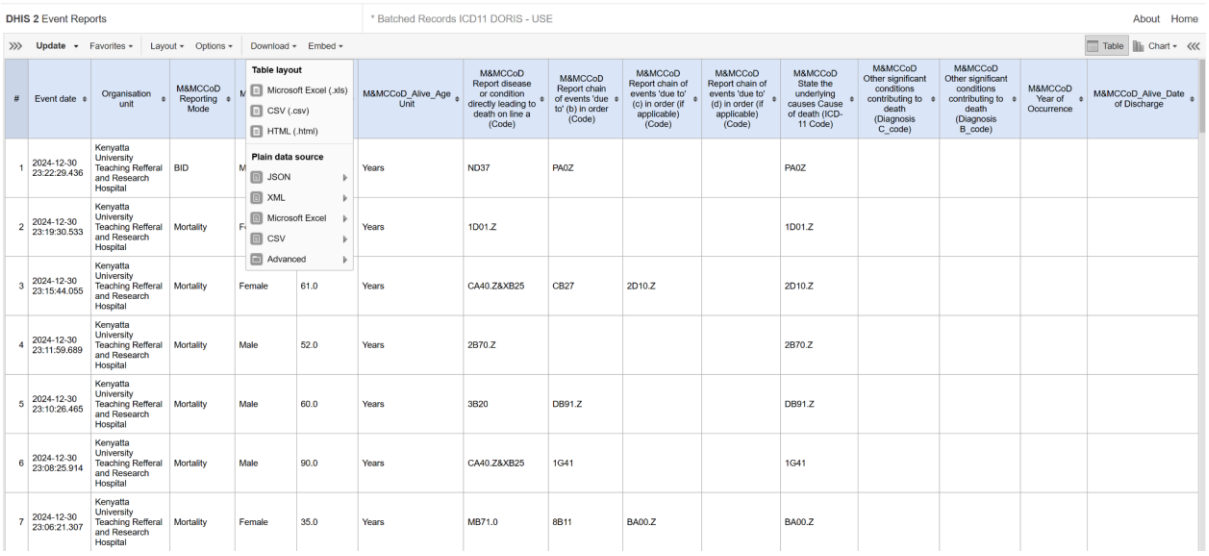
Data Display



#	Event date	Organisation unit	M&MCCoD Reporting Mode	M&MCCoD Sex	M&MCCoD Age	M&MCCoD_Alive_Age Unit	M&MCCoD Report disease or condition directly leading to death on line a (Code)	M&MCCoD Report chain of events 'due to' (b) in order (Code)	M&MCCoD Report chain of events 'due to' (c) in order (if applicable) (Code)	M&MCCoD Report chain of events 'due to' (d) in order (if applicable) (Code)	M&MCCoD State the underlying causes Cause of death (ICD-11 Code)	M&MCCoD Other significant conditions contributing to death (Diagnosis C_code)	M&MCCoD Other significant conditions contributing to death (Diagnosis B_code)	M&MCCoD Year of Occurrence	M&MCCoD_Alive_Date of Discharge
1	2024-12-30 23:22:29.436	Kenyatta University Teaching Refferal and Research Hospital	BID	Male	35.0	Years	ND37	PA0Z			PA0Z				
2	2024-12-30 23:19:30.533	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Female	39.0	Years	1D01.Z				1D01.Z				
3	2024-12-30 23:15:44.055	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Female	61.0	Years	CA40.Z&XB25	CB27	2D10.Z		2D10.Z				
4	2024-12-30 23:11:59.689	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	52.0	Years	2B70.Z				2B70.Z				
5	2024-12-30 23:10:26.465	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	60.0	Years	3B20	DB91.Z			DB91.Z				
6	2024-12-30 23:08:25.914	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	90.0	Years	CA40.Z&XB25	1G41			1G41				
7	2024-12-30 23:06:21.307	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Female	35.0	Years	MB71.0	8B11	BA00.Z		BA00.Z				

<< < Page 1 of 19416 > >> 1-100 of 1941546 cases

Downloading Data



#	Event date	Organisation unit	M&MCCoD Reporting Mode	M&MCCoD Sex	M&MCCoD Age	M&MCCoD_Alive_Age Unit	M&MCCoD Report disease or condition directly leading to death on line a (Code)	M&MCCoD Report chain of events 'due to' (b) in order (Code)	M&MCCoD Report chain of events 'due to' (c) in order (if applicable) (Code)	M&MCCoD Report chain of events 'due to' (d) in order (if applicable) (Code)	M&MCCoD State the underlying causes Cause of death (ICD-11 Code)	M&MCCoD Other significant conditions contributing to death (Diagnosis C_code)	M&MCCoD Other significant conditions contributing to death (Diagnosis B_code)	M&MCCoD Year of Occurrence	M&MCCoD_Alive_Date of Discharge
1	2024-12-30 23:22:29.436	Kenyatta University Teaching Refferal and Research Hospital	BID	M		Years	ND37	PA0Z			PA0Z				
2	2024-12-30 23:19:30.533	Kenyatta University Teaching Refferal and Research Hospital	Mortality	F		Years	1D01.Z				1D01.Z				
3	2024-12-30 23:15:44.055	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Female	61.0	Years	CA40.Z&XB25	CB27	2D10.Z		2D10.Z				
4	2024-12-30 23:11:59.689	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	52.0	Years	2B70.Z				2B70.Z				
5	2024-12-30 23:10:26.465	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	60.0	Years	3B20	DB91.Z			DB91.Z				
6	2024-12-30 23:08:25.914	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Male	90.0	Years	CA40.Z&XB25	1G41			1G41				
7	2024-12-30 23:06:21.307	Kenyatta University Teaching Refferal and Research Hospital	Mortality	Female	35.0	Years	MB71.0	8B11	BA00.Z		BA00.Z				

The data can then be analyzed by running pivots in excel

Mortality Analysis

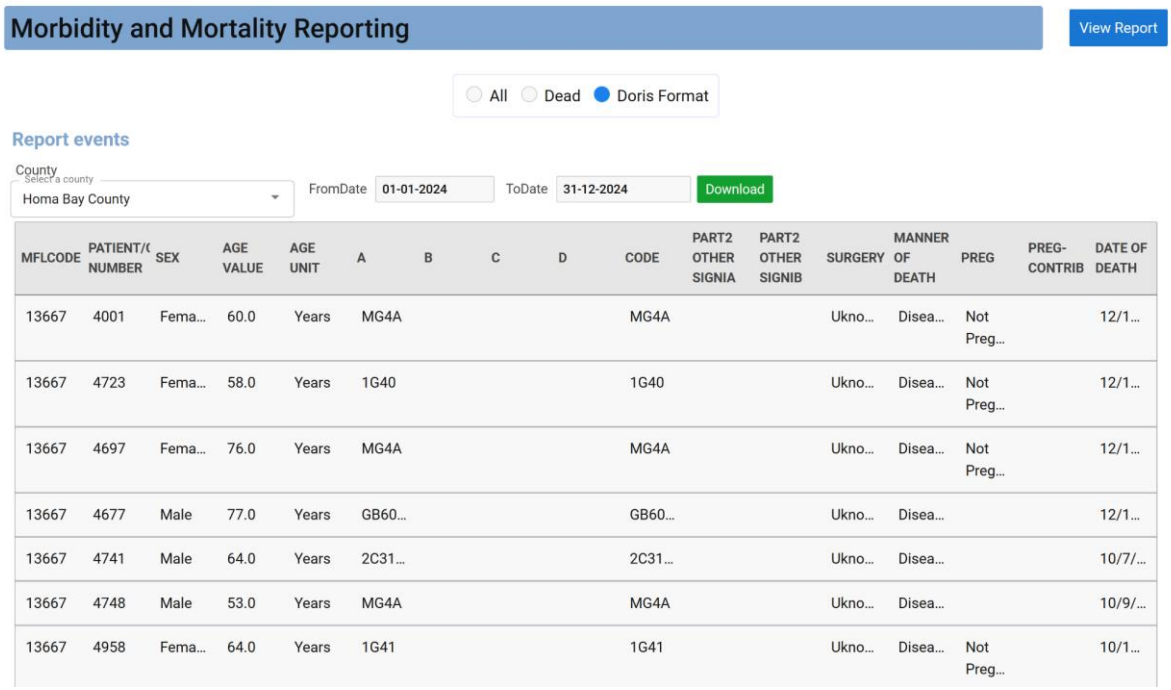
- Go to KHIS Tracker https://histracker.health.go.ke
- Select Event Reports, Favorites, open, search for batch records ICD 11 DORIS USE
- Under Data, go to selected data items, drop down arrow, choose IS EXACT, type Mortality
- Select Organization Unit and period then update
- Download data in CSV format

NB: The process of displaying and exporting data to excel is the same as Morbidity Analysis

Analysis of cause of death data using DORIS

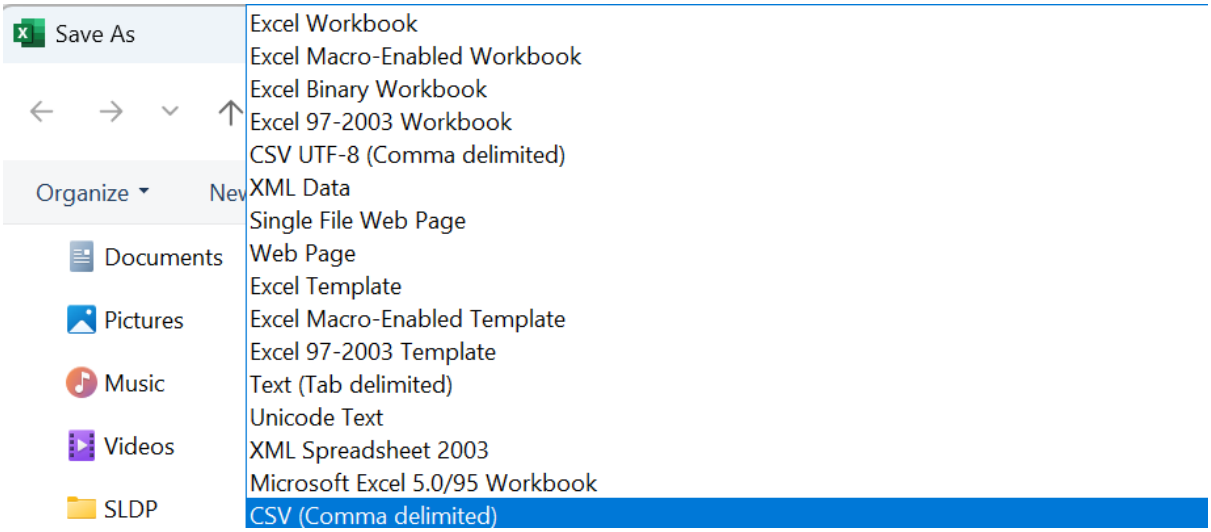
DORIS is a WHO software tool that uses a digital rule base to select the underlying cause of death (UCOD). The tool examines the information provided on the medical certificate of cause of death (MCCD) and assists in automatically selecting the (UCOD) using the fully digitalized mortality coding rules of the International Classification of Diseases 11th revision (ICD-11).

From KHIS Tracker, ICD 11 App download data on DORIS FORMAT



MFLCODE	PATIENT/(NUMBER	SEX	AGE VALUE	AGE UNIT	A	B	C	D	CODE	PART2 OTHER SIGNIA	PART2 OTHER SIGNIB	SURGERY	MANNER OF DEATH	PREG	PREG-CONTRIB	DATE OF DEATH
13667	4001	Fema...	60.0	Years	MG4A				MG4A			Ukno...	Disea...	Not Preg...		12/1...
13667	4723	Fema...	58.0	Years	1G40				1G40			Ukno...	Disea...	Not Preg...		12/1...
13667	4697	Fema...	76.0	Years	MG4A				MG4A			Ukno...	Disea...	Not Preg...		12/1...
13667	4677	Male	77.0	Years	GB60...				GB60...			Ukno...	Disea...			12/1...
13667	4741	Male	64.0	Years	2C31...				2C31...			Ukno...	Disea...			10/7/...
13667	4748	Male	53.0	Years	MG4A				MG4A			Ukno...	Disea...			10/9/...
13667	4958	Fema...	64.0	Years	1G41				1G41			Ukno...	Disea...	Not Preg...		10/1...

Create a folder and save the downloaded data in Comma delimited (CSV format)

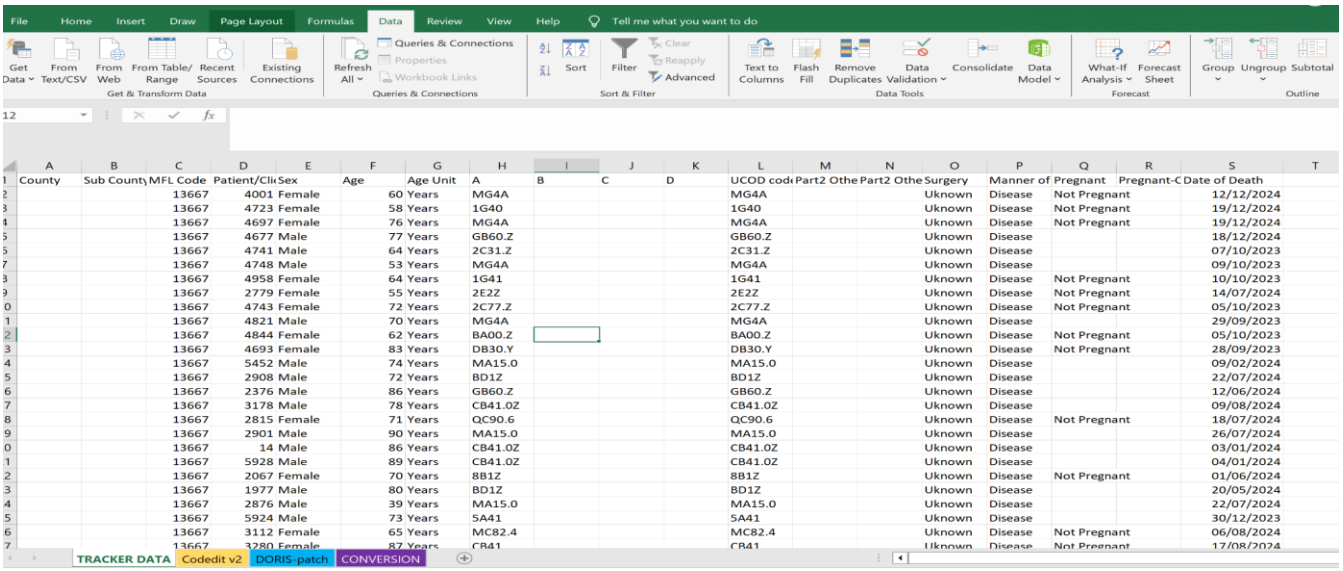


In the same folder include the DORIS and Conversion Excel Template

Open the downloaded data, go to data on menu bar, put filters on column titles and do the cleaning on sex, age, age unit, MCCoD

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	County	Sub Cou	MFL Co	Patient/	Sex	Age	Age Unit	A	B	C	D	UCOD c	Part2 Ot	Part2 Ot	Surgery	Manner	Pregnan	Pregna
2			13667	4001	Female	60	Years	MG4A				MG4A			Uknown	Disease	Not Pregnant	
3			13667	4723	Female	58	Years	1G40				1G40			Uknown	Disease	Not Pregnant	
4			13667	4697	Female	76	Years	MG4A				MG4A			Uknown	Disease	Not Pregnant	
5			13667	4677	Male	77	Years	GB60.Z				GB60.Z			Uknown	Disease		
6			13667	4741	Male	64	Years	2C31.Z				2C31.Z			Uknown	Disease		
7			13667	4748	Male	53	Years	MG4A				MG4A			Uknown	Disease		
8			13667	4958	Female	64	Years	1G41				1G41			Uknown	Disease	Not Pregnant	
9			13667	2779	Female	55	Years	2E2Z				2E2Z			Uknown	Disease	Not Pregnant	
10			13667	4743	Female	72	Years	2C77.Z				2C77.Z			Uknown	Disease	Not Pregnant	
11			13667	4821	Male	70	Years	MG4A				MG4A			Uknown	Disease		
12			13667	4844	Female	62	Years	BA00.Z				BA00.Z			Uknown	Disease	Not Pregnant	
13			13667	4693	Female	83	Years	DB30.Y				DB30.Y			Uknown	Disease	Not Pregnant	
14			13667	5452	Male	74	Years	MA15.0				MA15.0			Uknown	Disease		
15			13667	2908	Male	72	Years	BD1Z				BD1Z			Uknown	Disease		
16			13667	2376	Male	86	Years	GB60.Z				GB60.Z			Uknown	Disease		
17			13667	3178	Male	78	Years	CB41.0Z				CB41.0Z			Uknown	Disease		
18			13667	2815	Female	71	Years	QC90.6				QC90.6			Uknown	Disease	Not Pregnant	
19			13667	2901	Male	90	Years	MA15.0				MA15.0			Uknown	Disease		
20			13667	14	Male	86	Years	CB41.0Z				CB41.0Z			Uknown	Disease		
21			13667	5928	Male	89	Years	CB41.0Z				CB41.0Z			Uknown	Disease		
22			13667	2067	Female	70	Years	8B1Z				8B1Z			Uknown	Disease	Not Pregnant	
23			13667	1977	Male	80	Years	BD1Z				BD1Z			Uknown	Disease		
24			13667	2876	Male	39	Years	MA15.0				MA15.0			Uknown	Disease		
25			13667	5924	Male	73	Years	5A41				5A41			Uknown	Disease		
26			13667	3112	Female	65	Years	MC82.4				MC82.4			Uknown	Disease	Not Pregnant	

Copy the cleaned sheet and paste on DORIS and Conversion Excel Template, Tracker Data Sheet. Then Go to Data on Menu bar, Refresh All,

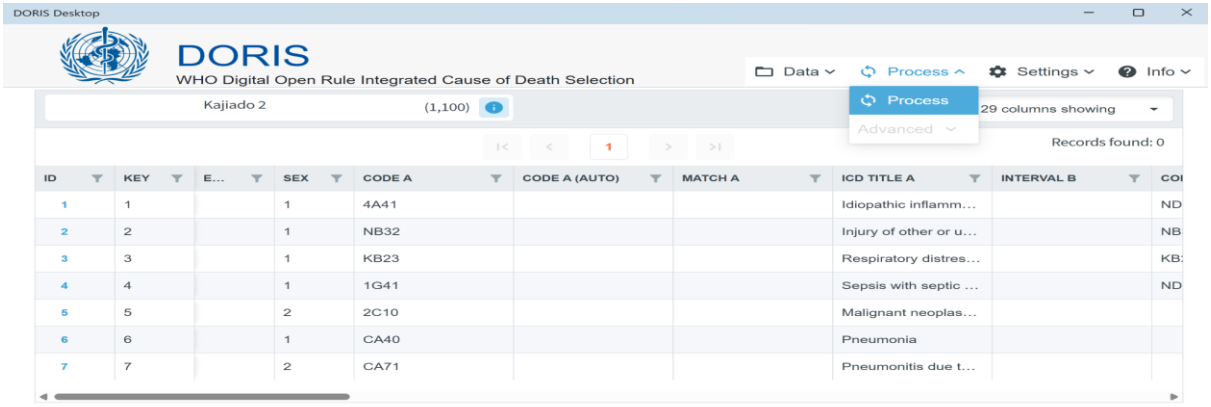


Go to DORIS Patch, Copy the whole sheet and paste in a new workbook, clean the sex and age columns and as CSV e.g. Analysis 1

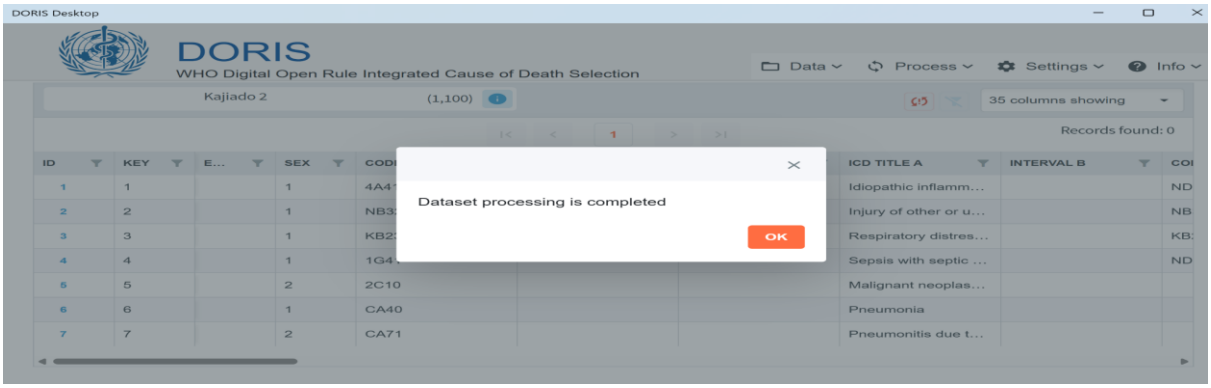
Download and install Doris Desktop version

From Doris Desktop, Click Data and import the saved file

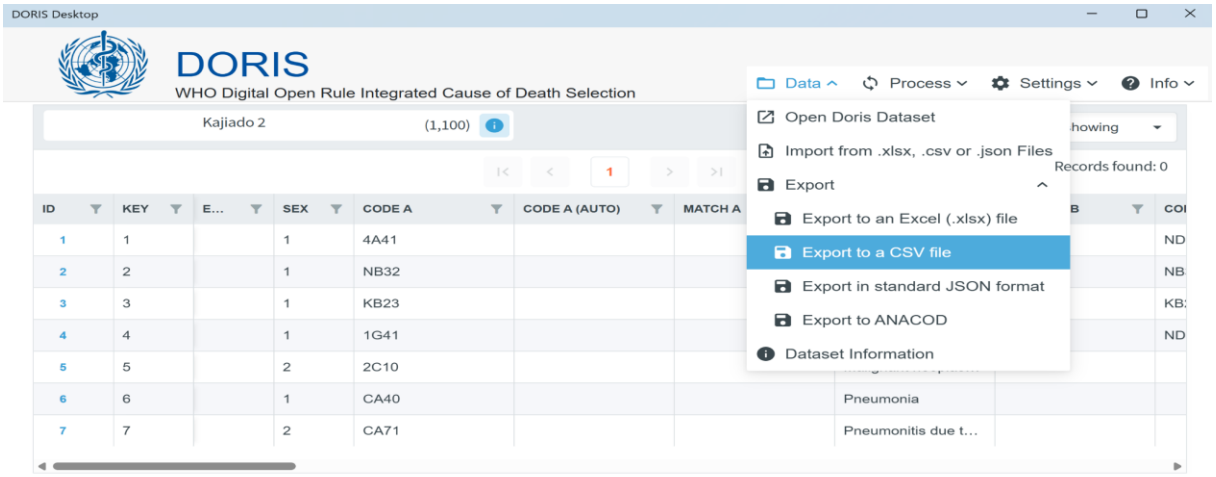
Process the imported file



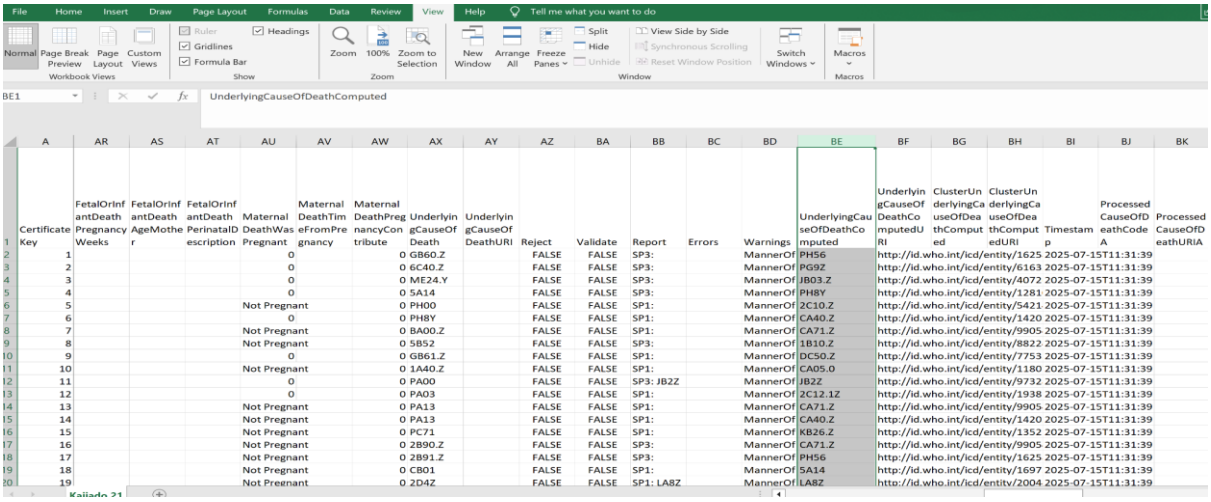
While still on DORIS Desktop, go to Process, select process, wait till dataset processing is completed then click OK



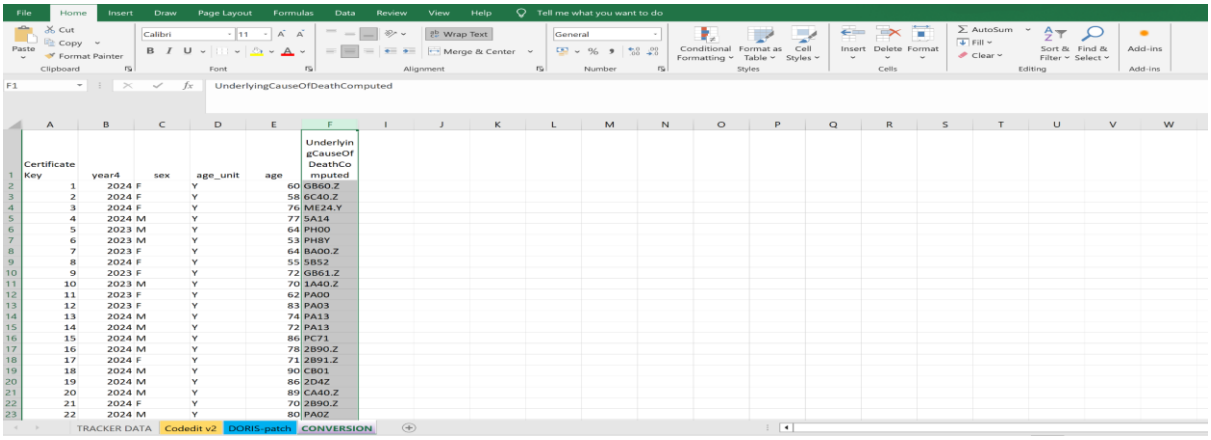
Go back to Data, export the processed file to CSV



From the downloaded file copy the “Underlying Cause of Death Computed”



and paste in DORIS and Conversion Excel Template, under sheet CONVERSION.

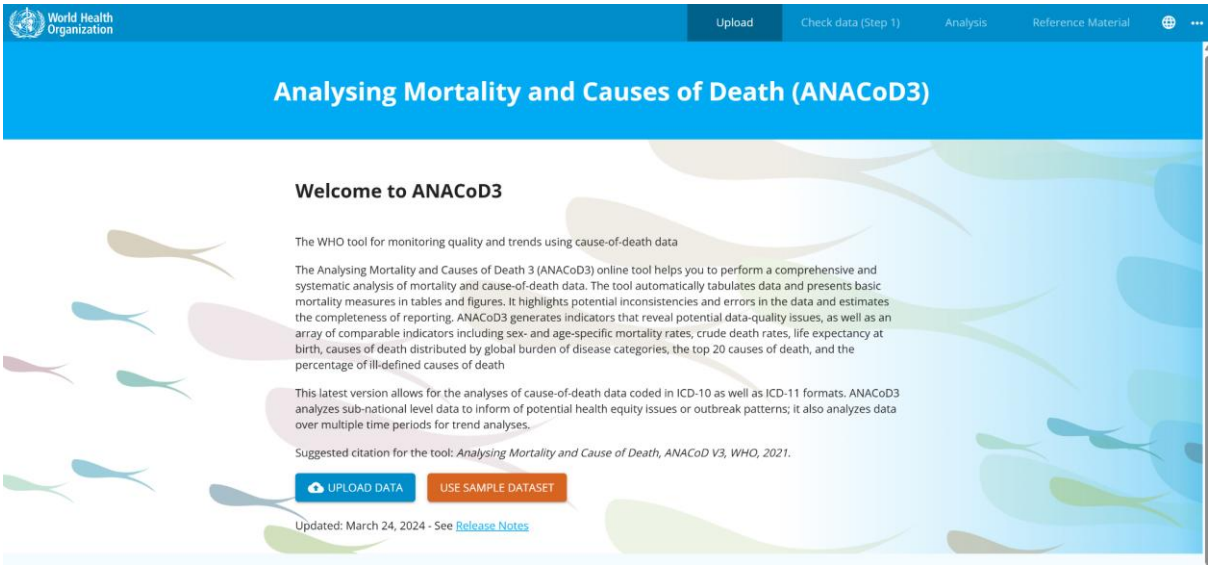


Copy and paste the conversion sheet to a new worksheet, put filters and clean the data, year, age, age unit and UCoD. Remove the filters and save as CSV.

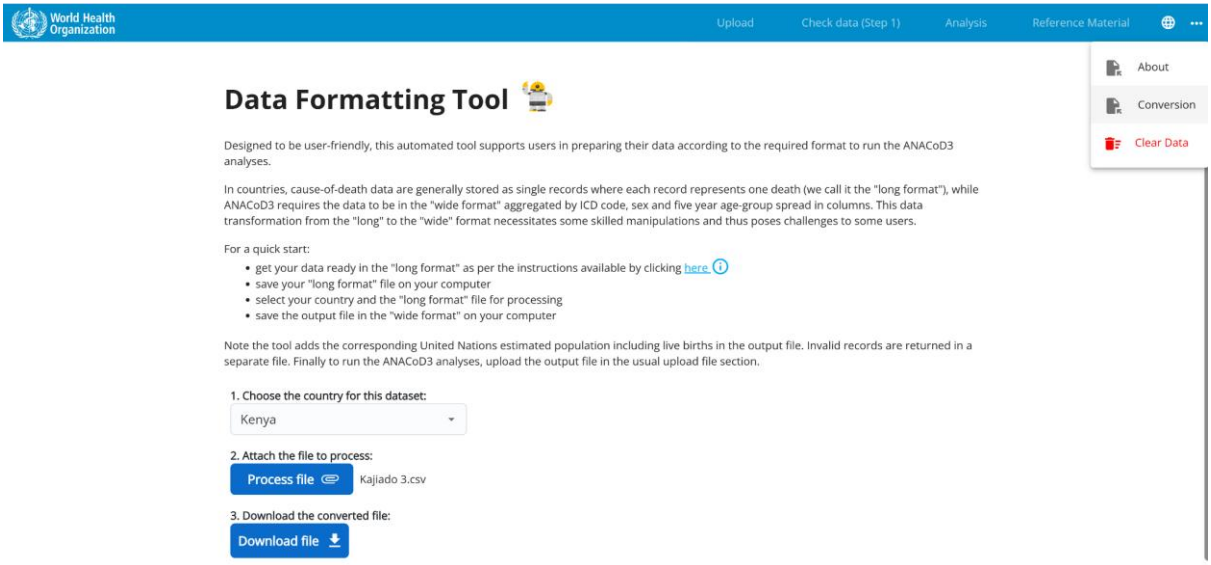
Analyzing Mortality Data in ANACOD 3

This online tool helps the user to perform a comprehensive and systematic analysis of mortality and cause-of-death data. The tool automatically tabulates data and presents basic mortality measures in tables and figures.

From the browser, search and open ANACOD3

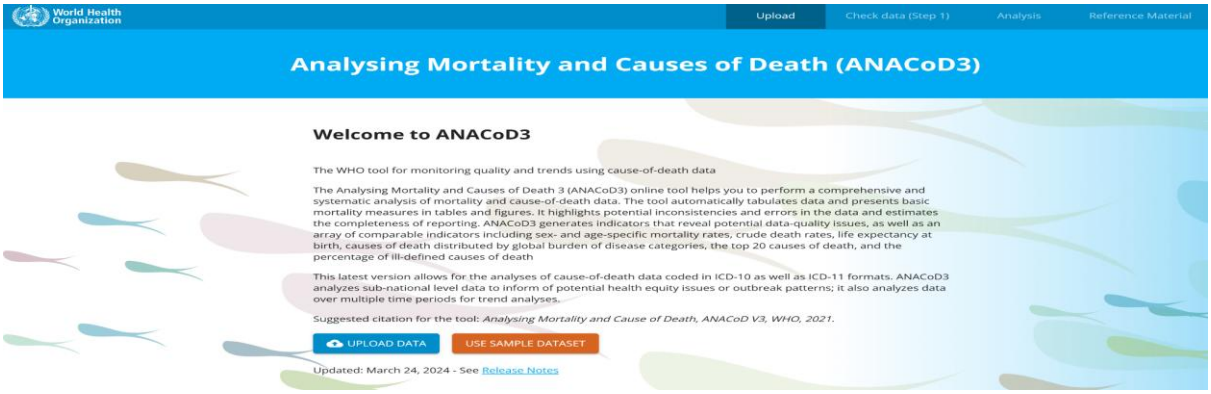


Open the three dots at the top right-hand corner and click Conversion, attach the latest Conversion sheet, Choose Country, attach file to process, download the converted file

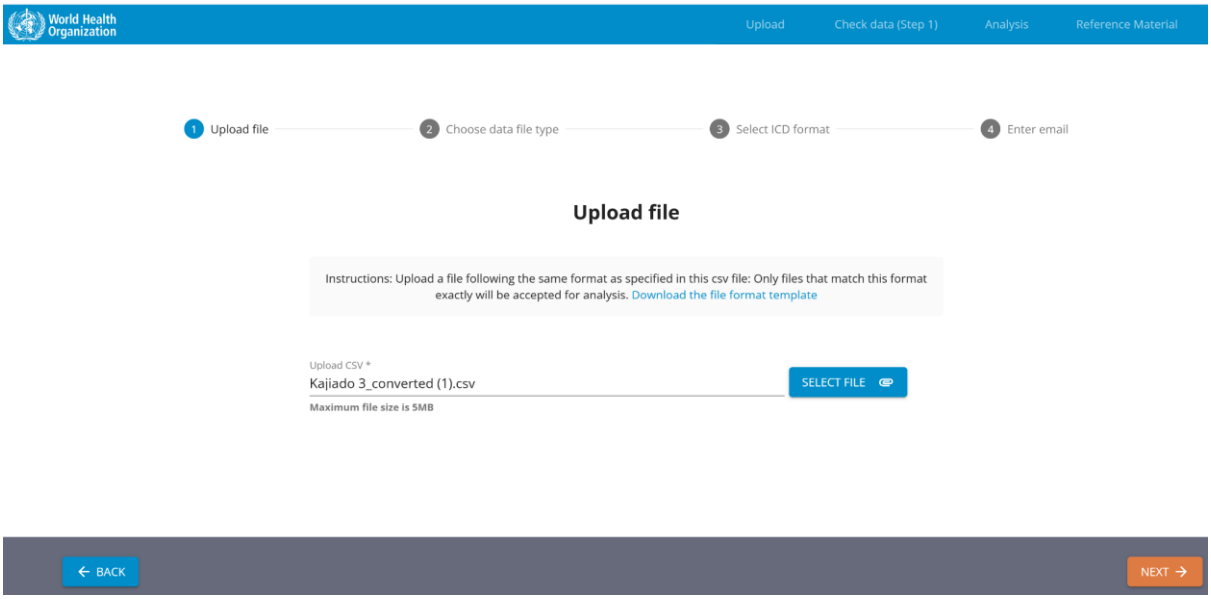


Uploading Data in ANACOD

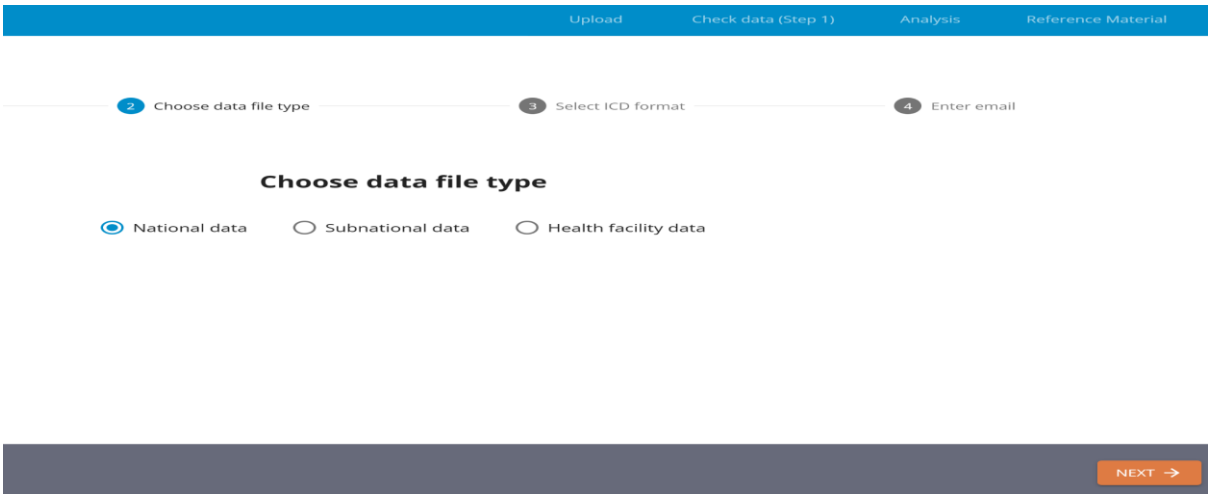
Go to upload data



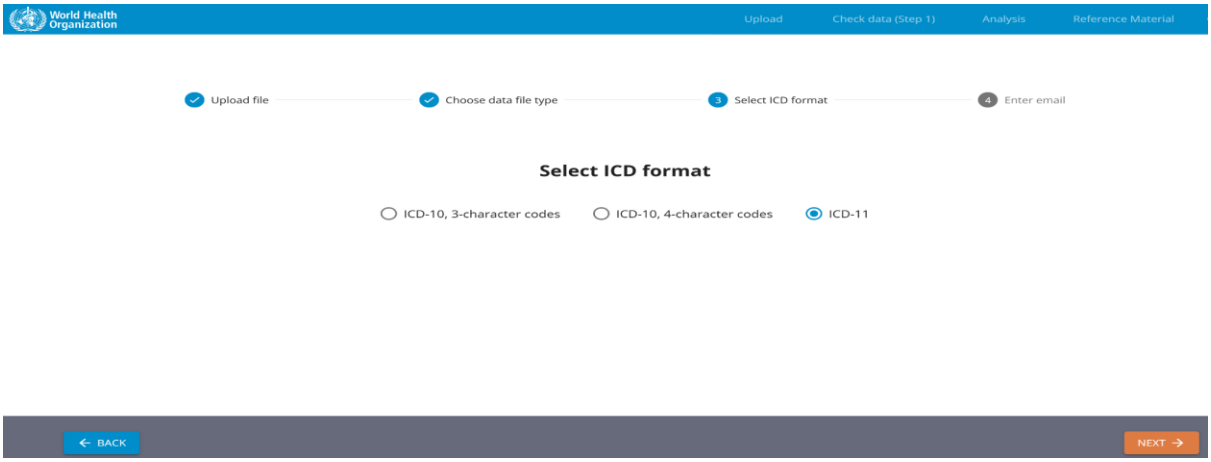
Selecting file to upload



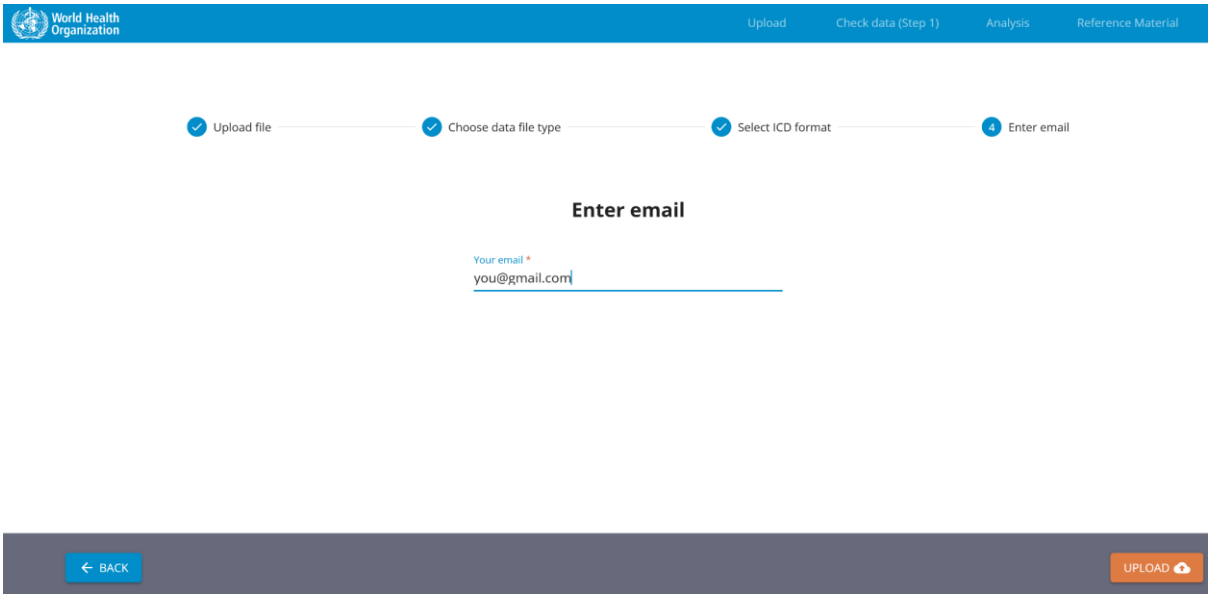
Click next and choose data file type either National, Sub National or Health Facility data



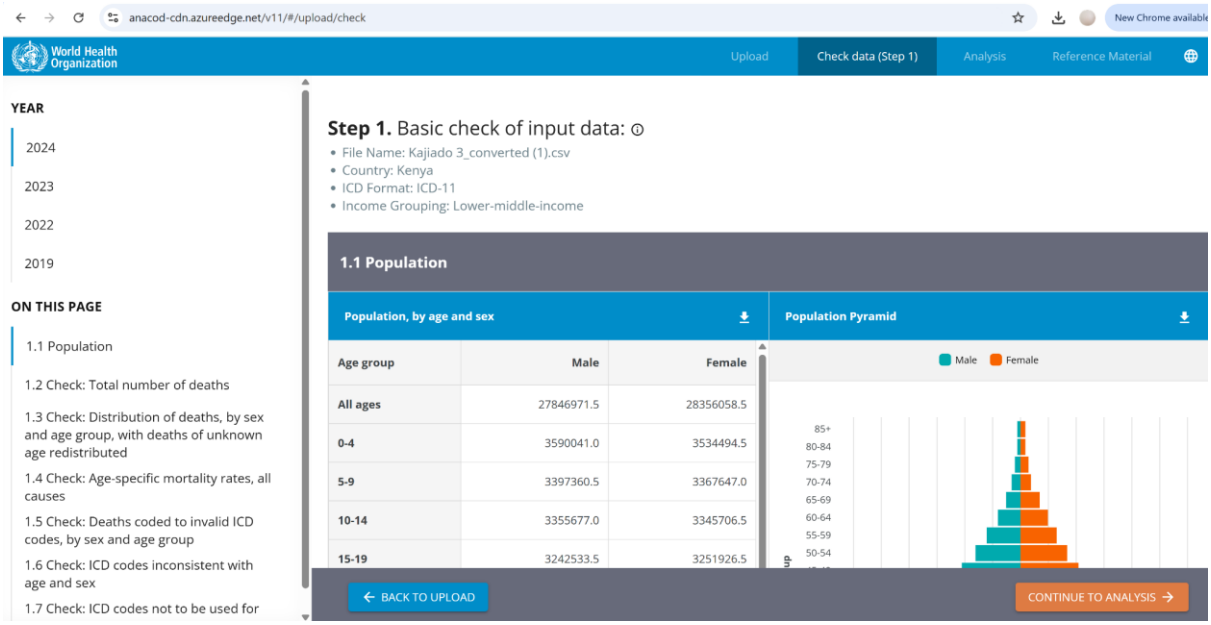
Click next to select the ICD coding format



Click next to enter email address and upload the data to ANACOD



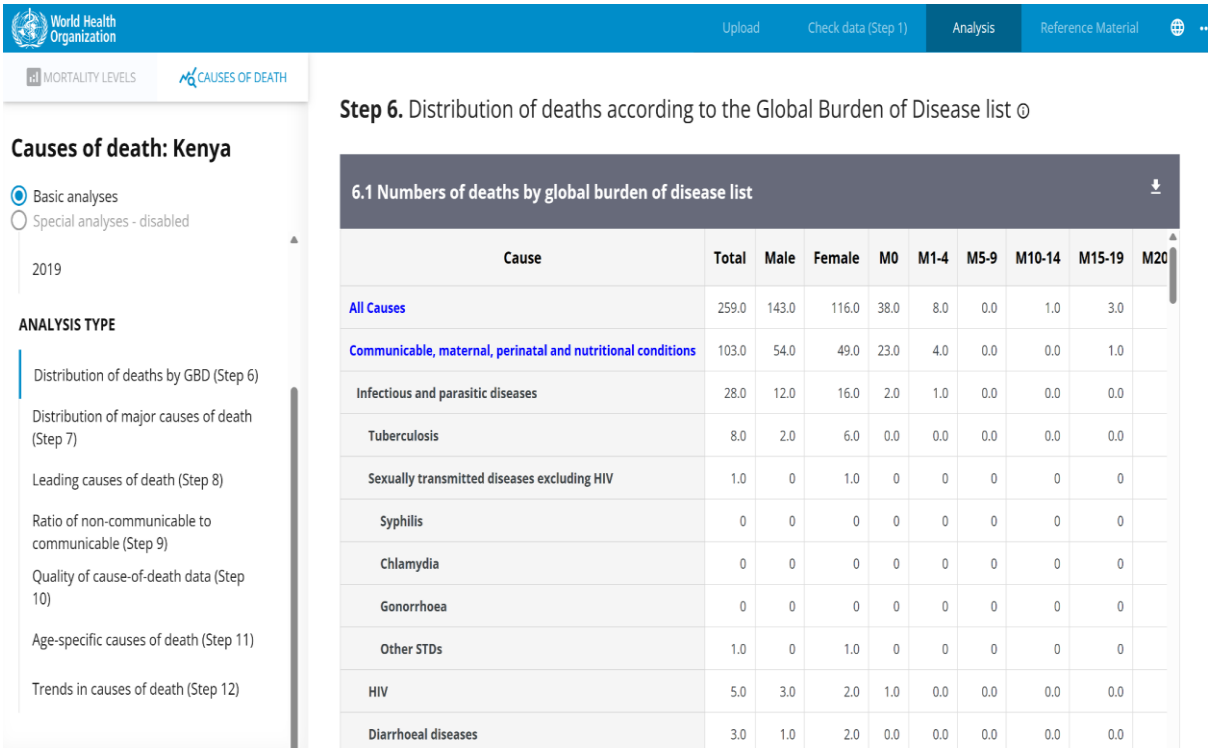
Check Input Data and continue to analysis



Analysis is on two levels:

Mortality levels - (Step 2 - Step 5)

Causes of death - (Step 6 - Step 12)



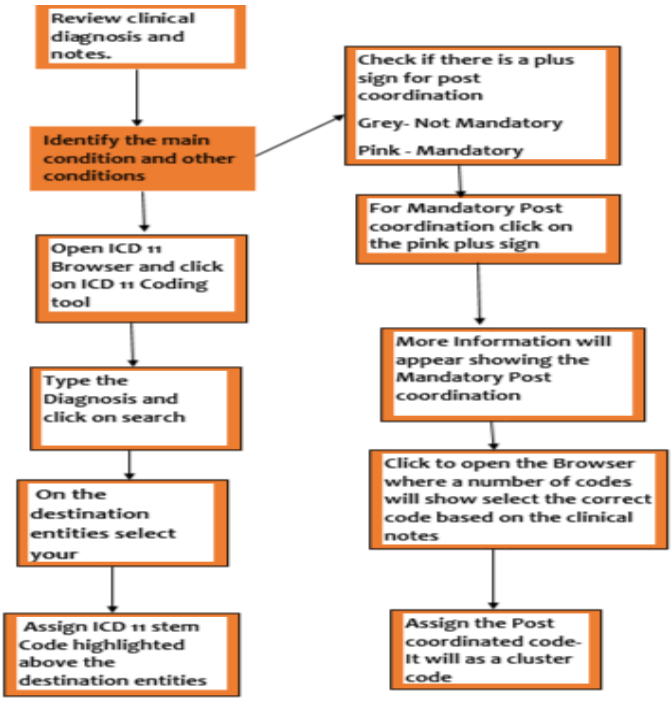
Cause	Total	Male	Female	M0	M1-4	M5-9	M10-14	M15-19	M20
All Causes	259.0	143.0	116.0	38.0	8.0	0.0	1.0	3.0	
Communicable, maternal, perinatal and nutritional conditions	103.0	54.0	49.0	23.0	4.0	0.0	0.0	1.0	
Infectious and parasitic diseases	28.0	12.0	16.0	2.0	1.0	0.0	0.0	0.0	
Tuberculosis	8.0	2.0	6.0	0.0	0.0	0.0	0.0	0.0	
Sexually transmitted diseases excluding HIV	1.0	0	1.0	0	0	0	0	0	
Syphilis	0	0	0	0	0	0	0	0	
Chlamydia	0	0	0	0	0	0	0	0	
Gonorrhoea	0	0	0	0	0	0	0	0	
Other STDs	1.0	0	1.0	0	0	0	0	0	
HIV	5.0	3.0	2.0	1.0	0.0	0.0	0.0	0.0	
Diarrhoeal diseases	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	

ANNEXES

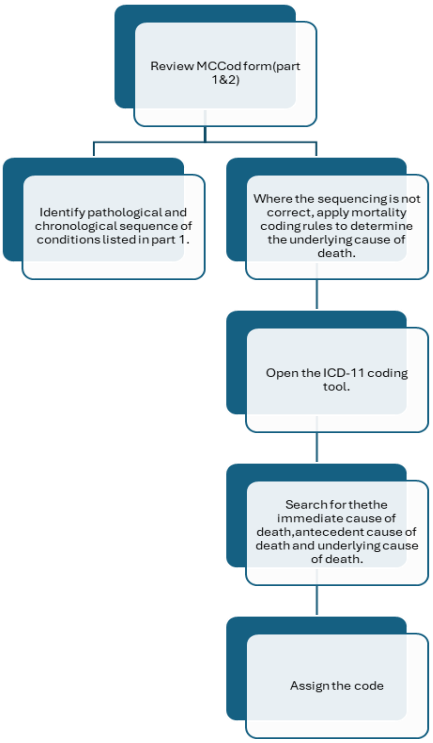
ANNEX 1: JOB AIDS

ICD 11 Coding

- Morbidity Coding

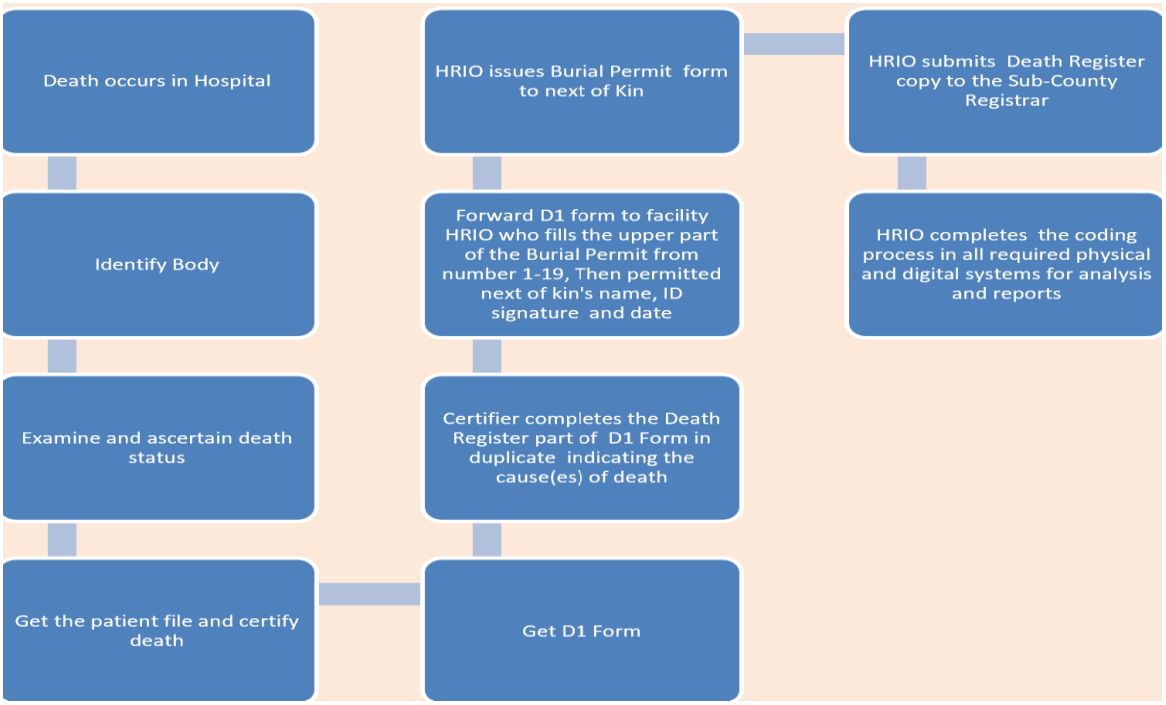


Mortality Coding

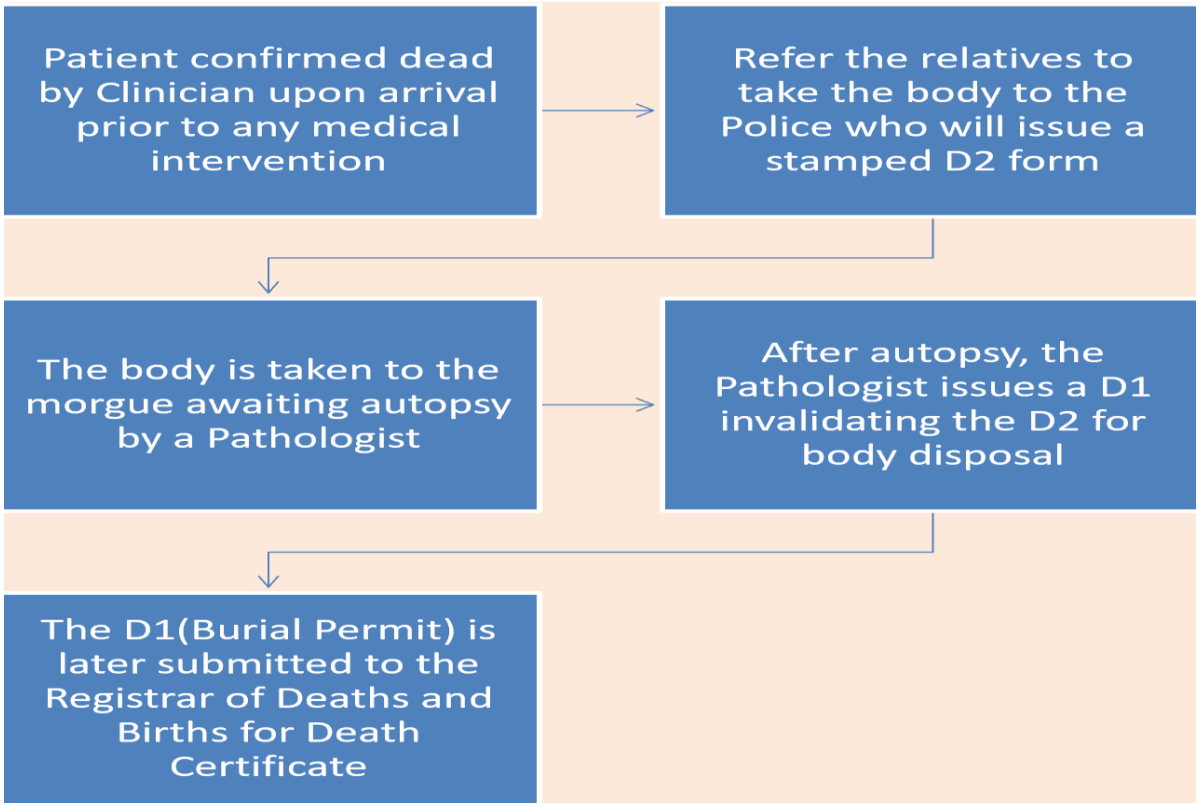


Death Certification Process

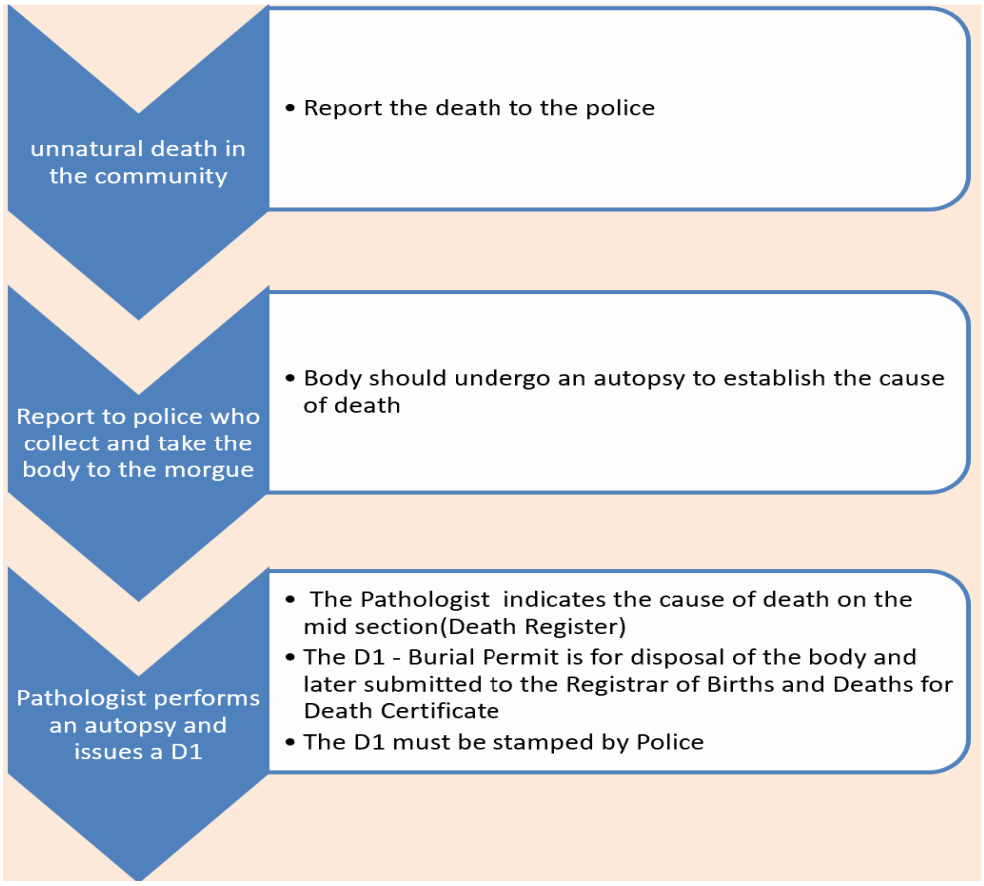
- Facility Deaths



- Brought in Dead

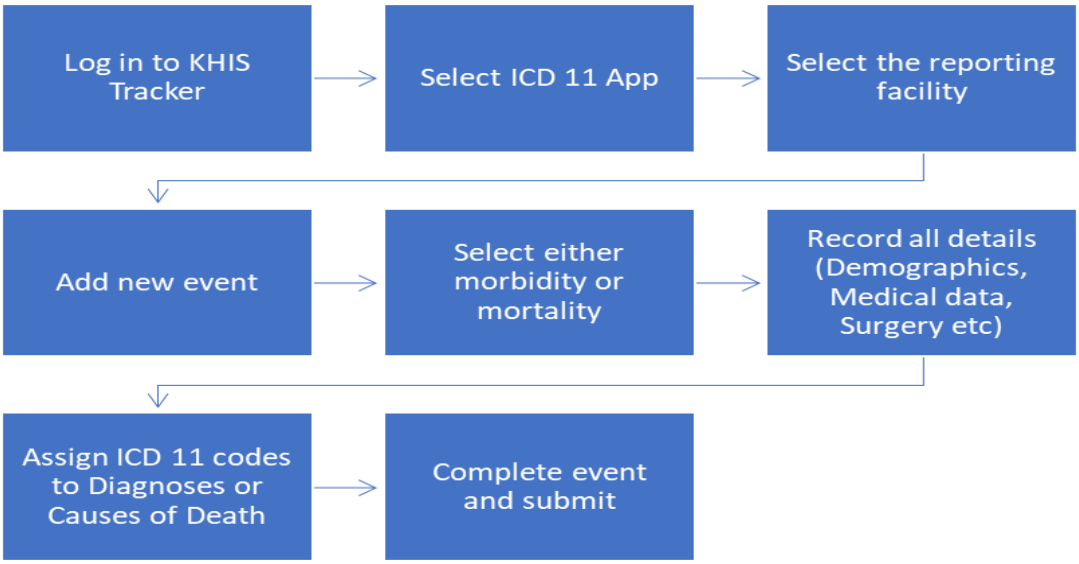


MCCoD Process for Unnatural Death



Reporting and Analysis

Reporting Morbidity/Mortality in KHIS Tracker



Morbidity Analysis

Step 1: Log in to KHIS Tracker

Step 2: From the Apps Menu select Event Reports

Step 3: Select Program (ICD 11 Morbidity and Mortality Reporting - Medical Certificate of cause of death)

Step 4: Select data elements from the program (filter Reporting Mode as Morbidity)

Step 5: Select Period dimension

Step 6: Select Organization Unit

Step 7: Update

Step 8: Download as CSV for further analysis

Mortality Analysis

Step 1: Log in to KHIS Tracker

Step 2: From the Apps Menu select Event Reports

Step 3: Select Program (Mortality Reporting - Medical Certificate of cause of death)

Step 4: Select data elements from the program (filter Reporting Mode as Mortality)

Step 5: Select Period dimension

Step 6: Select Organization Unit

Step 7: Update

Step 8: Download as CSV for further analysis

Using Mortality Favorites

Step 1: Log in to KHIS Tracker

Step 2: From the Apps Menu select Event Reports

Step 3: Select Favorites, open, search for batch records ICD 11 DORIS USE

Step 4: Under selected data elements from the program (filter Reporting Mode as Mortality)

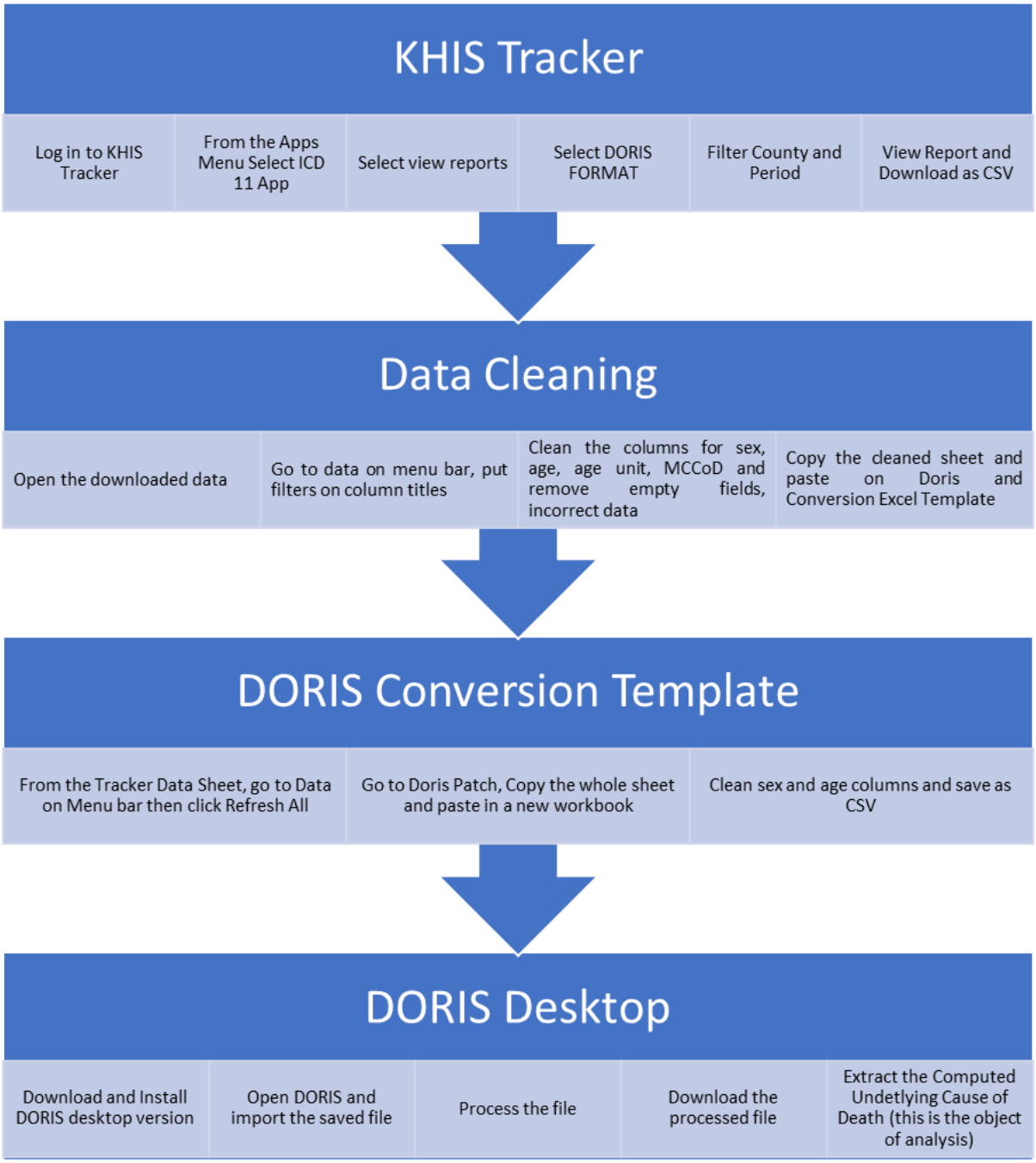
Step 5: Select Period dimension

Step 6: Select Organization Unit

Step 7: Update

Step 8: Download as CSV for further analysis

Analysis of cause of death data using DORIS



Data Conversion

Step 1: From the downloaded file from DORIS Desktop copy the "Underlying Cause of Death Computed''

Step 2: Paste in Doris and Conversion Excel Template, under sheet CONVERSION.

Step 3: Copy and paste the conversion sheet to a new worksheet, put filters and clean the data, year, age, age unit and UCoD. Remove the filters and save as CSV.

Mortality Analysis using ANACOD

Accessing ANACOD3 and data conversion	From the browser, search and open ANACOD3
	Open the three dots at the top right hand corner
	Click Conversion, attach the latest Conversion sheet
	Choose Country, and process the file
	Download the converted file
Uploading data in ANACOD	From ANACOD, select upload data
	Select the converted file to upload
	Click next and choose data file type either National, Sub National or Health Facility data
	Click next to select the ICD coding format, enter email address and upload
Mortality Analysis	Check input data and continue to analysis
	Review Mortality levels - (Step 2 - Step 5)
	Review Causes of death - (Step 6 - Step 12)

ANNEX 2: MCCOD Coding and Assessment Tool

Introduction

The MCCOD Coding and Assessment Tool supports the proper certification and coding of morbidity and mortality data in health facilities. By assessing how well medical staff complete death certificates and apply ICD coding standards, the tool helps ensure accuracy, consistency, and completeness in cause-of-death documentation. This strengthens: the quality of morbidity and mortality data health information systems and enhances the reliability of data used for planning, monitoring, and improving public health services.

Target Audience – Coders and Clinicians

Please answer the following questions accurately.

Section A: General Information

- Name of the County…….
- Name of Sub-County…….....
- Name of Ward…….....
- Name of Health facility……
- MFL Code…….
- Facility Type: .....
- Level of Care of the Health facility …….....
- Facility Ownership (Public Private FBO)

Section B: Capacity in Morbidity and Mortality coding and ICD-11:

B.1 Coders

1. How many staff in this facility are involved in coding?
2. Among the coding staff, how many are qualified HRIOs?
3. How many coding staff have received any formal training on morbidity and mortality coding using the International Classification of Diseases (ICD) 11 system?
4. Details regarding the nature and duration of the training **5days, 3days, OJT, e-Learning, virtual.**
5. Is there any other relevant training that the staff have undertaken on morbidity and mortality coding?
6. On a scale of 1 to 4, how would you rate the effectiveness of the formal training received on morbidity and ICD-11 and data analytics? (1. **Not effective, 2. Less effective, 3. Effective, 4. Very Effective)**
7. Are there any specific areas or topics within Morbidity and ICD-11 that were not adequately covered in the formal training? **Yes/No**
8. If Yes, please list them…….

9. Have you received any training on data analytics techniques specific to morbidity and mortality? **(Yes/No)**
10. If yes, how would you rate the effectiveness of the training? (**Not effective, less effective, Effective, Very Effective)**
11. For how long were you trained on MCCoD – Less than a year, 2 years and above.

Certifiers

1. How many clinicians work in this facility?
2. How many clinicians are trained as certifiers?
3. How many certifiers have received any formal training on medical certification of cause of death and the International Classification of Diseases (ICD-11) system?
4. Please provide details regarding the nature and duration of the training **(5days training, e-Learning, virtual.)**
5. On a scale of 1 to 4, with 1 "Not effective" and 4 "Very Effective", how would you rate the effectiveness of the current training programs on MCCoD and ICD-11? (**Not effective, Less effective, Effective, Very Effective)**
6. Are there any specific areas or topics within Morbidity and ICD-11 that you believe were not adequately covered in the formal training? **Yes/No**
7. If Yes, please list them …….
8. Except for the formal training on mortality certification and ICD-11, what other relevant training have the other staff received? **(OJT, virtual, self-paced training)**

Section C: Knowledge, Skills and Practices in Morbidity and Mortality

Coders

1. Which ICD version are you currently using? (**ICD 10 /ICD 11/None)**
2. If none, what are the reasons for not using any of the versions?
3. If using ICD 10, why has the facility not migrated to ICD 11?
4. How confident are you in your ability to use the International Classification of Diseases, 11th Revision (ICD-11) for coding purposes?

(a)Not confident at all (c) Moderately confident (d) Very confident(e) Extremely confident

5. Which specific areas or coding categories within ICD-11 do you require additional training? (***Introduction to Morbidity and Mortality Coding, Medical Terminologies, Structure and Chapters of ICD-11, Morbidity and Mortality Coding rules, Medical Certification of Cause of Death, Use of decision Tables Legal and Ethical Issues, Data Protection, Data Analytics (KHIS Tracker, Reports Generation, Data Quality, Cod Edit, DORIS & ANACoD).***

Certifier

1. Are certifiers knowledgeable of the criteria for determining the cause of death? **Yes/No**
2. How do Certifiers determine the cause of death to be recorded in D1/Discharge of death summary?
3. What challenges are faced when documenting patient diagnoses at discharge for coding purposes……
4. How do certifiers ensure that clinical notes and discharge summaries are complete and codable?
5. How confident are you in your ability to accurately complete Medical Certificates of Cause of Death (MCCoD)? *(a)Not confident at all* (*b) Moderately confident (c) Very confident (d) Extremely confident)*
6. Are there any specific areas within medical certification or ICD coding where you require additional training? **Choices .... *Medical Certification of Cause of Death, Common Errors in Medical Certification of Cause of Death, Legal and Ethical Issues, Data Protection).***
7. Is there any standard form used for certifying the cause of death? **Yes /No**
8. If yes select below – Medical notes, Discharge summary, Birth notification, Birth certificate, death certificate, death notification.

Section E: **Gaps Identification in Training Curriculum**

1. What topics or skills do you think should be included in the training program?

2. Are there any emerging trends or updates in medical certification or coding practices that you believe should be addressed in the training programs? **Yes/No**

3. If yes, specify……

Section F: Barriers to Training

1. Have you encountered any barriers or challenges in accessing training resources or attending training sessions for MCCoD and ICD-11? **(Yes/No)**

2. If Yes, what are the barriers encountered (**Inadequate training budget, Staff shortages and workload, Low awareness or prioritization, Lack of pre-service education, limited chances/opportunities, None)**

3. What support or resources do you believe would facilitate your participation in training activities? (**adequate training budget, Interactive platforms, Training of trainers (TOT), Protected time for training, National coordination, Incentives for participation, Quality audits and feedback loops, Local mortality committees, establishment of a service desk).**

8. Are there any areas where compliance with ICD standards is lacking?

Section G: ICD Data Analysis Tools:

Utilization of Data Analysis Tools:

1. Do you capture morbidity and mortality data in KHIS Tracker? **Yes/No**

2. If yes, are all cases/deaths reported in KHIS Tracker? **Yes/No**
3. If No, why? **No rights to KHIS tracker/ Facility has no Infrastructure/ facility has no HRIO, Files not coded**
4. Are you conversant with data analysis tools relevant to morbidity and mortality statistics? **(Yes/No)**
5. If Yes, which tools do you use to analyze the data (**KHIS/DORIS/ANACOD/ Excel/ others specify**
6. Do you face any challenges in applying data analysis tools to morbidity and mortality data for decision-making purposes? **(Yes/No)**

Section H: Data use and Decision-Making Processes:

1. How often does this facility generate information products i.e. **Monthly/Quarterly/ Annual reports?**
   2. Has your health facility conducted any MCCoD review in the last one year? **Yes/No**
   3.If Yes confirm with meeting minutes. **Minutes available/Not available**

Section I: Suggestions for Improvement:

1. How do you think the health facility can better support staff members in acquiring the necessary skills and knowledge for effectively utilizing morbidity and mortality statistics in decision-making?

   2. Based on your experience and observations, what recommendations do you have for improving formal training in Morbidity and ICD-11 and data analytics techniques?.....
   ……
   ……
   3. What resources or support do you believe would enhance your proficiency in MCCoD, ICD-11, and data analytics?.....
   ……
   …….
   4. Are there any additional comments?.....
   ……
   ……

Additional Comments:

- Do you have any additional comments regarding training needs or gaps in medical certification and ICD coding training?
- Thank you for your participation! Your feedback will help to improve the training program and better meet the needs of healthcare professionals.