**Planning for SRS Implementation- Assessing Mortality Data Landscape**

**Indicative Guidance**

[*Note for the country team: Please expand the background section below to fit your specific country context. Provide specific contextual data on mortality and other populations and health information. Add any additional justifications for the assessment*.]

**Rationale for completing a mortality systems assessment:**

[*Country*] lacks any nationally representative data on all-cause, all-age mortality to accurately understand the current public health situation and be able to assess the effectiveness of health programs and policies deployed, formulate evidence-based programs and policies, and appropriately allocate resources to different health sectors and geographically.

Main data sources such as CRVS, health information system, and other surveillances systems such as the maternal and perinatal death surveillance and response are inadequate for producing needed vital statistics that are nationally representative and have high coverage levels.

[*Country*] relies on infrequent household surveys for mortality data and modelled data rely mainly on external data and are externally produced by the UN for monitoring the Sustainable Development Goals (SDG) for health. In addition, mortality data from household surveys are usually limited to a narrow age group (e.g. children under five years) or to a specific event (e.g, maternal death) and do not provide information about the cause of death; thus, surveys do not currently provide a picture of what is happening across age groups or what the causes of death are that could be targeted.

The government has recognized the need for more regular mortality data that includes information about causes, ages, and sex, both nationally and by region, and is taking steps to establish an integrated mortality surveillance system.[[1]](#footnote-2)

As part of this initiative, the government is initiating the development of a national sample registration system (SRS) to produce frequent and timely mortality statistics at national and subnational levels. Like national surveys, the SRS will rely on a sample of population within geographic clusters nationwide, but selected to produce representative estimates of mortality rates and causes nationally and sub nationally by age and sex. It will also provide information much more frequently, allowing better tracking of progress and facilitating faster and more targeted responses to disease outbreaks or population crises.

The Bill and Melinda Gates Foundation (BMGF) is providing financial support for planning activities for the development of a sound and costed protocol for an SRS that builds on and integrates with existing systems and processes. As part of this planning, a comprehensive assessment of the mortality and cause of death data landscape will be conducted. This protocol describes activities to conduct for this mortality assessment.

**Objectives**:

The assessment seeks to understand existing systems and platforms of mortality data collection and use, their functioning, interoperation, stakeholders, and how they can contribute to the development and sustainability of a sample registration system for mortality and cause of death in the country.

More specifically, the assessment would:

1. Identify and describe the main stakeholders of mortality data in terms of causes and age groups of focus, data producers, managers, users, and funders, their institutional policy and legal mandate, and geographical coverage.
2. Map out and describe all national and subnational systems or platforms for mortality data collection, compilation, and different actors.
3. Describe the current levels of functioning of these platforms in terms of geographic coverage and representativeness, type of data collected (individual, aggregate, by age and sex), data quality, and mortality indicators derived, if any, and their reference period. In addition, provide the intended ‘optimal’ level and time goal to reach this level.
4. Identify and describe the country’s experience with the use of digital solutions for mortality data collection and opportunities for real time data collection, analysis and reporting.
5. Understand linkages and how data are shared between the existing systems, and opportunities for synergy across the systems; describe flow of information also between institutions
6. Identify (and include as an annex) the data capture forms and the data elements captured by the identified forms that each institution uses
7. Summarize recommendations for how the current mortality surveillance system can be improved and how a functioning SRS specifically can contribute to these improvements, with consideration for the county’s existing mortality data landscape.
8. An indicative outline of the final assessment report is included in the reporting section below.

**Implementation team:**

The findings of the assessment will be used to design an SRS for the country. It is essential that, from inception, key actors are identified and engaged in the assessment. These would include representatives from the Ministry of Health (monitoring and evaluation, planning, public health, and community health departments), other relevant ministries (e.g. Ministry in charge of CRVS, Community Structures, etc.), technical internal and external public health institutions (e.g., National Institute of Public Health, National Institute of Statistics), Universities, bilaterial and multilateral agencies, etc. Consider establishing a technical advisory committee (if not already available) to support the initiative, with endorsement at the relevant high levels of leadership of the government. Representatives from the institutions in this committee should be engaged in sites visits, formative activities, and results discussions and sharing.

**Methods**:

Two complementary approaches should be planned: (a) an initial desk review that can help fine tune the objectives of the assessment as well as help determine (b) specific additional data collection activities, including which site visits to conduct.

***Desk review of existing mortality systems, reports, studies, and stakeholders***: a compilation of published reports and scientific literature will help identify existing data systems, results produced, and main institutions related to mortality surveillance. These documents can be identified through searching websites of national institutions, publication databases (e.g. PubMed or local databases), and talking with relevant resource persons in the country. The desk review should be implemented by the primary institution leading the mortality assessment (e.g. the national public health institute). A short tool to help users develop an inventory of existing systems is included in the appendix.

The desk review will also seek to identify any existing technical committees or working groups working on mortality surveillance or using data from such systems. Such committees can be easily identified by contacting relevant ministerial departments. Findings from the desk review will help to further fine tune the objectives of the assessment, design the efforts to collect additional data to be collected, and sites to visit.

***Primary data collection***: A mixed methods approach with structured and semi-structured interviews with key informants (institutions involved in data collection e.g. HMIS, NSO; and key stakeholders such as traditional leaders, local health officials, community leaders, etc.) would be implemented. The interview questions will focus on how well the systems identified through the desk review are functioning, what data elements these systems collect, their frequency, their geographic scope, the use of IT and digital solutions, how data are stored, accessed, used and disseminated.

**Settings**:

To establish a nationally representative Sample Registration System (SRS) for monitoring mortality rates and causes of death, the assessment should aim to comprehensively evaluate existing national and subnational data systems, including vital registration, health information systems, and demographic surveillance sites. Where appropriate, purposively select districts with active mortality data collection or robust surveillance infrastructure to identify best practices and gaps. Prioritize subnational areas that reflect diverse geographic, urban-rural, and mortality profiles to capture the country’s mortality data landscape. For instance, health and demographic surveillance sites can provide detailed cause-of-death data, while morgues may reveal unreported deaths or coding challenges. This approach ensures a thorough understanding of opportunities and barriers to effective mortality surveillance.

**Sites**:

Mortality data can be collected from various sites, categorized as follows:

* **Health Facilities**: Data from District Health Information System-2 (DHIS-2), electronic medical record systems, and hospital information systems capture facility-based deaths and causes of death.
* **Community-Based Sources**: Community registers, burial sites, and health and demographic surveillance systems provide insights into deaths outside facilities, particularly in rural areas.
* **Administrative Systems**: Civil Registration and Vital Statistics (CRVS) systems, morgues, and national statistics offices record official mortality and cause-of-death data.

Before initiating the assessment, map key stakeholders for each site, such as hospital administrators, local CRVS registrars, morgue staff, community health workers, and national statistics officers. Identify individuals to interview based on their role in data collection, management, or oversight to understand data quality, completeness, and operational challenges. Use a structured approach, such as stakeholder analysis matrices, to prioritize engagement.

To support the development of a future nationally representative system, assess differences across contexts:

* **Rural vs. Urban**: Rural areas may rely on community-based reporting with limited CRVS coverage, while urban hospitals may over-represent facility deaths.
* **Facility vs. Community**: Facility data may miss community deaths, particularly in areas with low healthcare access.
* **Socioeconomic and Cultural Factors**: Include sites reflecting income disparities, ethnic diversity, or conflict-affected regions to capture variations in mortality patterns.
* **System Coverage Gaps**: Prioritize areas where CRVS or other national systems are not fully implemented to identify barriers to data collection.

This approach ensures the assessment captures the diversity of mortality data sources and informs the design of a comprehensive surveillance system.

**Respondents:**

Key informants at national, regional/provincial, and district levels.

To assess mortality data systems, purposively select respondents based on their roles in collecting, managing, or overseeing mortality data, planning, and monitoring at national and subnational levels. These individuals should provide insights into data quality, system operations, and barriers to effective surveillance. For example, target national-level respondents such as Ministry of Health officials, CRVS managers, or national statistics officers, and subnational respondents like district health managers, hospital data clerks, or local registrars. Prioritize those with decision-making authority, direct data access, or experience addressing gaps in cause-of-death reporting. Use stakeholder mapping from the site assessment to identify and contact respondents, ensuring representation from diverse geographic and administrative contexts. The table below suggests categories of respondents (e.g., health facility staff, CRVS personnel, policy makers) to guide standardized selection across sites. An example of list key informants interviewed during mortality data assessment in Zambia is included in the appendix.

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| **Sites/System/entity** | **Respondents** |
| National level decision-makers | Selected relevant MOH/Government Health Services department directors and other relevant Ministries |
| CRVS | CRVS managers at national, province and district level (as relevant);  Directors and managers of Vital Statistics from National Statistics Office |
| HMIS | MOH Director of HIS and M&E  National/regional level manager of HMIS  Health facility data clerks |
| Surveys | Directors and managers of surveys at NSO and National Public Health Institute |
| Maternal and Perinatal Death Surveillance and Response (MPDSR) | Director/Managers of MPDSR |
| Morgues / Burial surveillance sites | Managers/Data clerks |
| Health and Demographic Surveillance Sites | Managers of data collection and analysis |
| Communities | Selected community officials (Village chiefs) |
| Government partners, UN agencies, civil society NGOs | Identify relevant individuals involved in data gathering, analysis or use |

**Ethical clearance:**

If data are collected on existing systems’ functionality and do not include specific human subject data, it may be possible that the assessment is exempt from ethical clearance for human subjects research. We suggest checking with the local IRB office for ethical clearance requirements. If ethical clearance is required, it would be essential to factor in the time it will take to obtain approval before data collection is started. However, while processes for approval are engaged, desk reviews and specific data on existing systems’ functionality must be started.

**Data collection tools:**

Two types of tools may be developed.

Structured tool to conduct an inventory of existing data collection tools and collect specific functionality and characteristics of systems identified through the desk review (See form 1.1 in the appendix).

Structured or semi structured interview questionnaires: 1) for mortality stakeholders including national and subnational level leaders, planners, policymaker, data users and civil society (partners, civil society, community leaders) (see form 1.2 in the appendix), 2) for mortality data producers and managers (see form 1.3 in the appendix)

**Training:**

Recruit social scientists, such as sociologists or public health researchers, from local universities or research institutions to conduct qualitative and structured interviews for the assessment, leveraging their expertise to capture stakeholder perspectives about system operations and data quality. Appoint a senior social scientist to coordinate the team, train data collectors over at least two days on interview techniques, ethical considerations, and cultural sensitivities, and oversee pilot testing with a small sample to refine tools. If local expertise is limited, partner with international organizations or train public health officers, ensuring tools are adapted to the country’s context (e.g., civil registration gaps) and quality control measures like debriefs are implemented for rigor.

**Data collection:**

Plan for electronic data collection using tablets to enhance efficiency and accuracy, with the system inventory tool—designed to catalog mortality data sources and infrastructure—implemented in Excel for accessibility and real-time updates. Program the semi-structured tool, used for standardized stakeholder interviews, on a familiar in-country platform like Open Data Kit ([ODK]((https://getodk.org/))) or [Survey Solutions]((https://mysurvey.solutions/en/)), leveraging their mobile-friendly features. Technical assistance from international partners (e.g., Johns Hopkins University) can support platform customization if needed.

For qualitative interviews, record discussions (with secure audio devices) and take notes. Transcribe recordings daily by a trained local team to ensure timely analysis, with contingencies like paper backups or offline tools for areas with limited connectivity. The senior social scientist should oversee tool adaptation, data quality, and adherence to a plan specifying sampling, transcription protocols, and thematic analysis, ensuring alignment with the country’s mortality surveillance context.

**Analysis**:

Analyze data to address the assessment’s objectives---evaluating systems for a nationally representative Sample Registration System (SRS)---using primarily descriptive methods like thematic analysis for qualitative interviews and summary tables for system characteristics, producing clear reports and visualizations.

***Priority and legal framework for mortality and cause of death surveillance***: For government priorities and legal frameworks, review interviews with leadership (e.g., Ministry of Health, CRVS officials) and strategic documents that help understand national priorities for mortality surveillance, existing laws or plans (including CRVS), funding mechanisms, and digitization goals. Identify key stakeholders, cross-sectoral linkages (e.g., data-sharing between health and interior ministries), and opportunities or challenges for SRS implementation, validating findings through stakeholder workshops.

***Mortality data systems and linkages***: To assess mortality data systems and linkages, document existing platforms (e.g., CRVS, DHIS-2), detailing their legal mandates, geographic coverage, representativeness, data collection tools, processes, frequency, storage, analysis, outputs, and dissemination methods. Analyze system interactions, data flows, interoperability (e.g., CRVS-DHIS-2 compatibility), and data use. Use social network analysis to map stakeholder relationships, as demonstrated in Zambia’s assessment (contact technical partners for support). Evaluate data quality, including completeness and accuracy, to inform SRS design.

***Experience with digital solutions for data collection and monitoring***: For digital solutions, describe current or planned use of tools like electronic CRVS or mobile platforms, assessing software types, capacity, and guidelines for digitization, such as WHO SMART Guidelines[[2]](#footnote-3) or other digital health standards. Highlight infrastructure or training challenges to gauge scalability for SRS implementation.

***SWOT analysis of identified systems***: Conduct a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) for each platform and the overall mortality surveillance landscape, capturing system-specific and collective gaps. Led by the assessment team, draft the analysis and then engage a broader stakeholder committee through workshops to refine insights and prioritize actionable recommendations for SRS planning.

**Reporting:**

A comprehensive report detailing the findings of the assessment must be produced. We propose that the report be organized along the following sections:

1. Background: summarize relevant contextual information about the countrygovernment’s health and population goals, key strategic plans, efforts made to collect mortality data, and rationale for a mortality surveillance in the country.
2. Objective: the assessment is conducted to provide data that will inform the design and implementation of a sample registration system in the country. Such an objective must be indicated and the long-term goal full elucidated. Specific objectives related to the assessment would be included. In general, this information would have been already included in the protocol of the assessment
3. Implementing agency: state the agencies that led the activities, other partners that were involved, and their specific roles
4. Methods of the assessment: this section will borrow from the protocol of the assessment, updated with actual implementation changes
5. Results
   1. Mortality surveillance framework (describe any existing high-level framework, policy, structure, committees, and mandates for mortality surveillance in the country, financing)
   2. Mortality data systems and stakeholders
   3. Linkages/Integration of mortality systems
      1. Network analysis
   4. Main mortality data indicators produced by each system
      1. Data forms, elements, and flow
      2. Indicators: numerators and denominators
   5. Geographic coverage and data reporting
   6. Experience and use of IT and digital solutions
   7. SWOT analysis of existing data systems and existing gaps
6. Recommendations for the design of a sample registration system (institutional lead, stakeholders to engage, financing, methodological design, data collection and flow, analysis and reporting, dissemination, promotion of data demand and use)
7. Limitations and conclusion
8. Appendix: Tools used; list of stakeholders (institutions); relevant charts
9. References

**Results sharing:**

Organize a technical meeting to present findings from the assessment, discuss proposed mortality surveillance principles (e.g., data quality, interoperability), and recommend strategies for a sample registration system (SRS). Discuss site selection, digital tools, and funding plans, aiming to validate results and secure stakeholder commitment. Prioritize inviting key stakeholders—such as Ministry of Health officials, CRVS authorities, district health officers, and partners like WHO—based on their influence and data oversight roles, ensuring representation from national and subnational levels. Conduct the meeting as a hybrid workshop with presentations and discussions, using visualizations like system maps to communicate gaps and opportunities. Produce a policy brief outlining actionable steps. Follow up by disseminating a detailed report and forming stakeholder working groups to sustain momentum for SRS implementation, adapting recommendations to the country’s resource and system context.

**Appendix:**

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| **Table 1:** Key informants interviewed during the Baseline Assessment of Mortality Surveillance Systems, Zambia 2023 | | | | |
| **Institution** | **National Level** | **Provincial Level** | **District Level** | **Health Facility** |
| Ministry of Health | Director (Public health, Clinical care, M&E), Program Managers (HIV, Malaria, Vaccine Preventable Disease (VPD), Integrated Disease Surveillance and Response, Maternal and Perinatal Death Surveillance and Response program managers, Monitoring and Evaluation Officers  ICT officers | Provincial directors of health, Program Officers (i.e. HIV, MPDSR  etc. Health  Information Officers Surveillance Officer  ICT officers | District directors of health,  Health information officers, Program officer (i.e. surveillance officer)  Health information officers  Directors of DHSS sites | Medical superintendents, Physicians,  Health Information officers  Nurses/nurse in charges, Program officers (HIV etc.)  Mortuary attendants Mortality Surveillance Officers |
| Zambia National Public Health Institute | Director General Program officers (mortality surveillance) Vaccine preventable | Provincial Surveillance officers Provincial Health Information officer | District Surveillance Officer | Health Information officer |

1. In Africa, Africa CDC has developed a mortality surveillance framework and is working with countries to operationalized its implementation. [↑](#footnote-ref-2)
2. https://www.who.int/teams/digital-health-and-innovation/smart-guidelines [↑](#footnote-ref-3)