Strengthening Civil Registration and Vital Statistics (CRVS) Systems

Implementing **Civil Registration of Births and Deaths** in the CRVS System

Preface

About the Strengthening CRVS Systems Guides

The Strengthening CRVS Systems Guides provide best-practice guidance for specific aspects of a civil registration and vital statistics (CRVS) system. Drawn from international standards and concepts, the guides provide users with practical and operational advice and strategic planning support for targeted CRVS system improvements.

Civil Registration of Births and Deaths

CRVS systems are concerned with the legal registration of vital events and the collection and statistical analysis of data related to these vital events in the population. A well-functioning CRVS system, among other tasks, registers all births and deaths, issues birth and death certificates, and compiles and disseminates birth and death statistics, including cause-of-death statistics, for policymakers to use.

To enable CRVS systems to be fully functional and for accurate vital statistics data collection, analysis, interpretation and use, it is of critical importance that all births and deaths be registered with the civil registration agency. This guide provides operational best practices for the improvement and maintenance of birth and death registration practices within the CRVS system, particularly with support from the health sector for the civil registration of births and deaths. The efforts described in this guide will help to strengthen the quality and completeness of vital statistics data.

Structure of the Guides

Thes guides begin with an infographic that locates the specific topic of the guide within the context of the overall CRVS system with key principles highlighted. Following this, an implementation framework presents success factors. These factors are broken down into implementation tasks which are grouped into the following main intervention areas: a) Governance and Processes; b) System and Workforce Capabilities; b) Quality Assurance; and d) Data Analysis, Interpretation and Use. For each task the reader can find references to published key resources for further learning and application.

GUIDES

The Strengthening CRVS Systems Guides have been developed for the following topics:

1 **Civil Registration of Births and Deaths**
2 Medical Certification of Cause of Death
3 International Classification of Diseases Mortality Coding
4 Verbal Autopsy

Target Audience

The target audience of the guides includes, but is not limited to, decision-makers, planners and other managers at the civil registration agency, the ministry of health and the national statistics agency in countries aiming to improve their CRVS system and/or to maintain a high-quality system. The guides further aim to support members of high-level interagency CRVS coordination committees or other decision-making bodies concerned with the governance of the CRVS system.

The guides assume the reader has a good understanding of CRVS systems. For readers who would like more introductory and background information about CRVS systems please see:

- Principles and Recommendations for a Vital Statistics System published by the UN Statistics Division (unstats.un.org/unsd/demographic/standmeth/principles/m19rev3en.pdf).

- WHO Resource Kit "Strengthening civil registration and vital statistics for births, deaths and causes of death" (apps.who.int/iris/handle/10665/78917).

- CRVS Knowledge Gateway of the Bloomberg Philanthropies Data for Health Initiative (crvsgateway.info/).

- Training Course on Civil Registration and Vital Statistics Systems of the National Center for Health Statistics of the US CDC (cdc.gov/nchs/isp/isp_fetp.htm).

- eLearning Course on Civil Registration and Vital Statistics (CRVS) Systems of the World Bank Group (olcstage.worldbank.org/content/civil-registration-and-vital-statistics-systems-advanced-level-facilitated-1).

Acknowledgements

CIVIL REGISTRATION OF
BIRTHS AND DEATHS IN THE

Civil Registration & Vital Statistics System

CRVS Systems must be:

- Continuous
- Compulsory
- Universal
- Permanent
- Confidential

Key functions of CRVS systems:

- Provide proof of legal identity
- Produce vital statistics

Types of Vital Events

Vital Events Proper
Live Births, Fetal Deaths, Deaths with **Cause of Death**

Dual Events
Annulments, Divorces, Marriages, Judicial Separations

Vertical Events
Adoption, Recognition, Legitimation

GUIDE 1   **YOU ARE HERE**

Civil Registration of Births & Deaths

The civil registration of birth and death is the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of these vital events. The civil registration process establishes and provides legal documentation for the births and deaths. Civil registration records are the best source for the production of vital statistics. Civil registration of births and deaths requires coordination between health facilities, the civil registrar, and families to collect information related to the vital event for registration and certification, for legal, administrative and statistical purposes.

Place of Occurrence of the Death

Death in Presence of Physician

Death in Absence of Physician

GUIDE 2

Medical Certification of Cause of Death (MCCD)

GUIDE 4

Verbal Autopsy (VA)

GUIDE 3

International Classification of Diseases (ICD) Mortality Coding

Civil Registration of Births and Deaths

A well-functioning system for civil registration for births and deaths ensures that the informant and the civil registrar work together to achieve completeness or near completeness of vital event registration and produce data that can be used to inform evidence-based decisions on population health policies.

KEY PRINCIPLES

Make birth and death registration universal

All births and deaths should be registered with the civil registrar, without discrimination or distinction based on subnational geography; racial, ethnic or religious group; sex; citizenship; or other status. Registration services should be accessible to all population groups throughout the country and processes should not be overly burdensome.

Make birth and death registration compulsory

To ensure continuity, permanence and universality, national authorities should make registration compulsory through an up-to-date legal framework. The compulsory obligations must apply to everyone with responsibilities in the civil registration system, including institutional actors as well as individuals.

Conduct birth and death registration on a continuous and permanent basis

The CRVS system should have the resources and capacity to register vital events as they occur and without interruption, to generate a continuous flow of vital statistics that can be analyzed at regular intervals. This includes financial resources, information technology and human resources.

Ensure confidentiality

Personal information must be maintained in a manner that ensures confidentiality. The CRVS legal framework should reflect international standards for personal privacy and data security, while at the same time ensuring that data may be processed for legitimate government purposes and functions.

Implementation Framework for Civil Registration of Births and Deaths in the CRVS System

Intervention Area A:

Governance & Processes

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Governance structures coordinate stakeholders to support high coverage and ease of access to birth and death registration. The legal framework reflects and supports international best practices. Efficient birth and death registration processes are operationalized.

SUCCESS FACTOR A1

Appropriate Governance Structures

PURPOSE

To ensure functional structures, system coordination and management of processes and data in the CRVS system.

OUTPUT

Terms of references for applicable governance committees specifying roles and responsibilities, constituents, and frequency of meetings, among other points.

Governance committees meet and function as intended.

IMPLEMENTATION TASKS

☐ **Ensure functioning of a high-level inter-agency national CRVS coordination committee**

- The committee should be responsible for the overall coordination of the CRVS system and provide high-level oversight, input and approval of processes required for the registration and certification of vital events and generation of vital statistics.

- The committee should develop and oversee a national strategic plan to ensure that there is high coverage of vital event registration and certification to achieve universality and to ensure data may be used for vital statistics reports and public health decision-making.

- Representation on the committee should include, at a minimum, those agencies responsible for civil registration and certification processes, identity management, and vital statistics (e.g., the civil registration agency, ministry of health, national identification agency and national statistics agency) at a sufficiently senior level to allow for decision-making regarding the CRVS system.

- The committee should be legally mandated, have well-defined terms of reference, and meet at least annually (but preferably more frequently) to discuss matters affecting the CRVS system.

- The committee should be authorized to establish technical working groups to focus on technical issues.

- For additional information, see references 1, 2, 3, 4 and 5.

☐ **Ensure functioning of subject-specific technical working groups, where needed**

- The national CRVS coordination committee should establish and operationalize national technical working groups that focus on specific CRVS issues and/or processes. For example, a mortality technical working group can play a key role in improving the completeness and quality of mortality data (6) and a technical working group on communication and education can lead public awareness campaigns.

- Each national technical working group should have representatives from all stakeholder agencies relevant to the particular topic. Members of the technical working group may include senior technical staff and other people with expertise in the topic of concern (e.g., hospital administrators, government staff, police for medico-legal cases, statisticians, academic experts, or representatives of civil society).

SUCCESS FACTOR A1 (CONT'D)

- A technical working group should be led by the agency responsible for the specific topic (this is most commonly the civil registration agency but may also be the ministry of health). The technical working group should report to the national CRVS coordination committee.

- Each technical working group should have terms of reference and should meet on a quarterly (or as necessary more frequent) basis.

- Each technical working group should develop and implement an action plan that helps achieve the objectives of the national strategic plan.

☐ **Ensure functioning of subnational CRVS coordination committees, where appropriate**

- Coordination among the stakeholder ministries at the subnational level can help ensure that civil registration processes are implemented effectively and uniformly across the country. Cub-national CRVS coordination committees should include, at a minimum, representatives from the ministries or departments responsible for health, civil registration, identity management and statistics at the subnational level. Usually, a subnational level representative from the ministry or department in charge of civil registration chairs the subnational committee.

- Subnational CRVS coordination committees should report to the national CRVS coordination committee. The subnational committees might also report to the subnational level government (e.g., provincial or district government) depending on the system of government.

- Each subnational CRVS coordination committee should have terms of reference and should meet quarterly, or more frequently as necessary.

- Each subnational CRVS coordination committee should develop and implement an action plan that helps achieve the objectives of the national strategic plan.

REFERENCES

1   United Nations Economic and Social Commission for Asia and the Pacific (2019). Get in the Picture. National CRVS Coordination Mechanism. https://getinthepicture.org/regional-picture/implementation-steps/national-coordination-mechanism.

2   Department of Economic and Social Affairs of the United Nations, Statistics Division (2014). Principles and recommendations for a vital statistics system, revision https://unstats.un.org/unsd/demographic/standmeth/principles/m19rev3en.pdf

3   United National Guidelines on a Legislative Framework for Civil Registration, Vital Statistics, and Identity Management (2023. https://desapublications.un.org/publications/guidelines-legislative-framework-civil-registration-vital-statistics-and-identity

4   Governance and Systems Architecture Pathways Guide to CRVS Implementation (Topic 1) [under development].

5   Data for Health Initiative, Civil Registration, Vital Statistics and Identity Management (CRVSID) Legal and Regulatory Review Toolkit, Chapter 2 (Structure of Civil Registration Agency. https://www.advocacyincubator.org/what-we-do/our-public-health-advocacy-programs/civil-registration/legal-and-regulatory-review-toolkit-for-crvsid

6   Vital Strategies Strengthening Civil Registration and Vital Statistics (CRVS) Systems: Implementing Medical Certification of Cause of Death in the CRVS System. https://www.vitalstrategies.org/resources/strengthening-crvs-systems-guides/

SUCCESS FACTOR A2

Strong CRVS Legal and Regulatory Framework

PURPOSE

To ensure that the CRVS legal framework mandates best practices and processes for complete and timely registration of births and deaths.

OUTPUT

A legal framework that supports a system for universal and compulsory birth and death registration using best practices that are appropriate for the country's context.

REFERENCES

7   UN Statistics Division (2018). Handbook on Civil Registration and Vital Statistics Systems: Management, Operation and Maintenance, Revision 1. https://unstats.un.org/unsd/demographic-social/Standards-and-Methods/files/Handbooks/crvs/crvs-mgt-E.pdf.

8   Data for Health Initiative, Civil Registration, Vital Statistics and Identity Management (CRVSID) Legal and Regulatory Review Toolkit, Chapter 3 (Registration of Birth and Death), available at: https://www.advocacyincubator.org/what-we-do/our-public-health-advocacy-programs/civil-registration/legal-and-regulatory-review-toolkit-for-crvsid

9   World Bank (2017). Strengthening CRVS and National ID Systems. Report No: AUS16865. http://documents.worldbank.org/curated/en/306621510673094647/pdf/AUS16865-revised-public.pdf.

IMPLEMENTATION TASKS

Review and revise the CRVS legal and regulatory framework and ensure alignment with international best practice for registration of births and deaths

- The CRVS legal framework should reflect international best practice, modified as necessary for the country's context, and adhere to international definitions of key terms, including live birth, death, fetal death and cause of death. (2, 3, 8).

- The CRVS legal framework should define roles and responsibilities of the key government stakeholders, including the agency responsible for civil registration, the ministry of health and the national statistics agency. (2, 3, 8).

- The CRVS legal framework should mandate data sharing arrangements to allow for generation of vital statistics and the use of civil registration data for other official government purposes, including maintenance of a population register (if applicable in the country) (7).

- The CRVS legal framework should mandate linkage between the civil registration system and national identity management system, including generation of a unique identity number (if applicable) at birth registration and retirement of legal identity at death registration (2, 3, 8, 9).

- The CRVS legal framework should specify the procedures for registration of births and deaths that occur in health facilities and in the community, including where registration may occur (at place of event or at place of residence) (3, 8).

- The CRVS legal framework should specify what documents or other evidence will be required to verify accuracy of information presented to the civil registrar. Evidence should not be so burdensome as to discourage registration (3, 8).

- The CRVS legal framework should specify that registration and the original birth and death certificate is free of charge (2, 3, 8).

- The CRVS legal framework should set an appropriate time period that constitutes "on-time" registration of a births and deaths. Late registration during a "grace period" (typically one year after the event) and delayed registration after the grace period must be allowed, although additional evidence may be required. Fees for late and delayed registration should be avoided. If charged, fees must be minimal so as not to discourage registration (2, 3, 8).

- The legal framework should ensure the registration of all deaths independent of the availability of cause of death data (i.e., a cause of death should not be required to register a death) (2, 3, 8).

- The CRVS legal framework should require reporting of a death to the civil registrar before a permit for disposal of a body may be issued (8).

SUCCESS FACTOR A3

Efficient Birth and Death Registration Business Processes and Data Management Strategies

PURPOSE

Ensure that vital event data is managed in a systematic way and conceptualized through stakeholder engagement and a business process improvement and mapping exercise.

OUTPUT

Business process maps for the collection, verification, storage and use of birth and death information are produced with buy-in from all stakeholders. The role of informants and registrars are clearly defined.

IMPLEMENTATION TASKS

☐ **Establish a multi-disciplinary inter-ministerial business process mapping team to analyze existing birth and death registration processes and redesign the processes to increase efficiency**

- The core team should include: representatives from the civil registration agency, including local civil registrars; representatives from the identity management agency; representatives from the ministry of health and health care workers; and information technology and legal experts from the stakeholder agencies. The purpose of this team is to analyze and map existing system processes and determine and map redesigned system processes. See (8) for more information.

- The core team should review and map current business processes for registration of births and deaths that occur in health facilities and in communities, in order to identify bottlenecks and barriers to registration, as well any gaps or overlaps in processes.

- The core team should redesign CRVS business processes for birth and death registration, with the 10 CRVS milestones clearly identified on the redesigned business process maps (10). These redesigned business processes should maximize system performance and efficiency in order to achieve complete birth and death registration.

- After system redesign, the core team should review the legal framework and recommend any amendments needed to align the law with the redesigned processes.

☐ **Clearly identify the role of the health sector as the informant or notifier**

- Redesigned business process maps should clearly identify the person or institution required to act as the informant for births and deaths and any person or institution required to act as the notifier for births and deaths.

- The ideal approach to the civil registration of births and deaths in a CRVS system is to move information, rather than people (11). This means that the optimal system for vital event registration will not require families to take on a major role in registration (11). Rather, an informant (typically a health facility or community health worker) will report all necessary information to the civil registrar (7). The family need not travel to the civil registrar or interact with the civil registrar except to collect the birth or death certificate (if the certificate cannot be delivered to the family in another manner).

SUCCESS FACTOR A3 (CONT'D)

- Establishing the health sector as the informant with the responsibilities for registration of vital events may be advantageous in the following ways (12):

  - Increases access to registration and certification services

  - Increases convenience for family members, requiring no additional effort or time

  - Promotes timely registration of births and deaths

  - Enables mistake to be rectified easily, increasing accuracy of vital event information

- Alternatively, health facilities and community health workers could act as the notifier of births and deaths that occur in the health facility or the community (respectively), providing some of the information necessary for registration. The family remains responsible for declaring the event to the civil registrar and providing other information (such as name of the child and biographical information for the parents). For more information on the health sector as informant or notifier see: The Health Sector in Civil Registration: Options and Methods to Increase Registration of Live Births, Stillbirths and Deaths. (13)

- In addition to playing a role as informant or notifier, the health sector plays a simultaneous role as the party responsible for completing medical certification of cause of death (MCCD) including the underlying cause of death and sequence of events leading to death (2, 3, 8) (See Guides 2 and 3 for more information).

- Countries must ensure that their civil registration laws reflect the role of health administrators and/or health workers as informants or notifiers, as appropriate, and require these people or institutions to share information on the occurrence and characteristics of births and deaths (3)

SUCCESS FACTOR A3 (CONT'D)

Optimize registration system design, ensuring the system provides maximum coverage and timeliness of birth and death registration

- Locate registration offices at the local level to increase accessibility, such as at the village, county or district level, and/or within health facilities. Conduct mobile registration drives in remote villages and towns that cannot readily access a registration office and extend hours of operation for registration offices in crowded urban areas to reduce wait times. (3, 8)

- Establish mechanisms to facilitate late registration of births identified by the health or education sectors during their routine activities, for example, during immunization or on entry into primary school (2, 3, 8).

- For deaths in the community, establish processes for scheduling and completing a verbal autopsy (3, 8). See Guide 4 on verbal autopsy for more information.

- Establish processes for medical and legal authorities to report deaths due to unnatural causes to the civil registrar (3, 8).

REFERENCES

10 Cobos Muñoz D, AbouZahr C, de Savigny D. (2018). The 'Ten CRVS Milestones' framework for understanding civil registration and vital statistics systems. BMJ Global Health. httpp:// dx.doi.org/10.1136/ bmjgh-2017-000673.

11 WHO, UNICEF (n.d.). Health sector contributions towards improving the civil registration of births and deaths in low-income countries. Guidance for health sector managers, civil registrars and development partners. https://vital.ent.box.com/ file/656175971161.

12 Tuoane-Nkhasi, M., Bratschi, M., Mwanza, J. (2019). Strengthening linkages between civil registration and the health sector to better health and improved civil registration systems: the cases of Uganda and Liberia. UNECA. https://www.uneca.org/sites/default/files/ uploaded-documents/ACS/5COM-RCR/crvs-v-strengthening_linkages_between_civil_ registration_and_the_health_sector.pdf.

13 The Health Sector in Civil Registration: Options and Methods to Increase Registration of Live Births, Stillbirths, and Deaths. https:// www.vitalstrategies.org/resources/the-health-sector-in-civil-registration-options-and-methods-to-increase-registration-of-live-births-stillbirths-and-deaths/

Intervention Area B:

System & Workforce Capabilities

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Human resources, information technology (IT) and other capabilities are in place to ensure complete and on-time registration of births and deaths.

SUCCESS FACTOR B1

Adequately Funded Civil Registration System

PURPOSE

To plan for and ensure availability of all necessary financial resources to operate the CRVS system.

OUTPUT

All necessary financial resources are available to maintain and improve the CRVS system, including financial resources for the civil registration agency, ministry of health and national statistics agency.

IMPLEMENTATION TASKS

☐ **Develop budget and secure financial resources needed to maintain the civil registration system**

- Plan and budget necessary financial resources to establish and maintain the civil registration system. This should consider aspects such as human resources, information technology systems and training needs (8).

- Plans and budgets should include financial resources for all government stakeholders, including the civil registration agency, the ministry of health and the vital statistics agency.

SUCCESS FACTOR B2

Standard Operating Procedures and Manuals

PURPOSE

To ensure that birth and death registration, including data collection, transmission, processing, and analysis, are carried out in a standardized manner.

OUTPUT

Standard operating procedures and manuals for all relevant staff are available and in use.

IMPLEMENTATION TASKS

☐ **Develop standard operating procedures for registration of birth and death from data collection to analysis**

- Standard operating procedures (SOPs) and manuals should be developed for all cadres of staff involved in civil registration, including:

  - Health sector staff or other local officials, who collect and transmit birth and death registration information to civil registrars;

  - Local civil registrars who collect and verify this information and transmit it to the national level;

  - National level civil registration staff who maintain and transmit the information to the statistics office; and

  - Statistics office staff that quality check and analyze this data and generate and disseminate vital statistics.

- Manuals, guides and supporting materials should be developed based on the context of the country.

- Standard operating procedures and manuals should be made readily available to the relevant staff for use and reference.

SUCCESS FACTOR B2 (CONT'D)

Train all relevant staff on standard operating procedures for death registration

- Training efforts should ensure that all staff are familiar with these standard operating procedures and that the procedures include critical areas such as:

  – How births and deaths in health facilities are reported to the civil registration authorities using a standard template comprising the information items essential for registration (8).

  – How births and deaths in the community are reported to the civil registration authorities by specific types of individuals, including community health workers, local officials or funeral directors (where the law permits), using a standard template comprising the information items essential for registration (8).

- Informants and/or notifiers should be trained to collect vital event information that adheres to international standards and meets the needs of the civil registration agency, identity management agency and statistics agency.

- Training should include steps for quality assurance. See Intervention Area C, Quality Assurance.

SUCCESS FACTOR B3

Human Resources for Birth and Death Registration

PURPOSE

To ensure that civil registration officers, health sector staff and other sectors understand registration processes and their contribution to the integrity of registration records which ultimately result in the generation of vital statistics.

OUTPUT

A cadre of highly trained registrars and health sector staff ensure universal coverage and timeliness of birth and death registration and certification processes.

IMPLEMENTATION TASKS

☐ **Ensure that staff with roles to play in birth and death registration and certification are trained to support families in registering births and death and obtaining certificates**

- As stated in Success Factor A3, for facility births and deaths, the health facility at which the vital event occurred would be the ideal informant (13). Alternatively, if the family is the informant, health facility staff should act as a notifier of births and deaths (13).

- The health facility that acts as an informant or notifier for a birth or death that occurs in the facility should be trained to collect all required details from family members to send to the civil registrar. (7)

- As stated in Success Factor A3, community health workers may act as the informant or notifier for births and deaths that occur in the community. (13). Community health workers should be trained to collect all required details from family members to send to the civil registrar.

- In the case of deaths, the informant's function is limited to announcing the fact of death; details on cause of death must be confirmed through medical certification of cause of death (MCCD) by the appropriate health personnel. (See Guide 2, Implementing Medical Certification of Cause of Death in the CRVS System.)

- Registrars should be trained to ensure that the information on registration forms is accurate and complete and trained on how to follow up with informants if the information provided is incomplete (7).

- Registrars should also be trained on certification processes. Specifically, registrars should be trained on: 1) protocols to safely store and maintain an inventory of security paper so that it can only be used for official purposes; 2) who is entitled to receive a birth or death certificate; and 3) how to verify the identity of the person who requests a birth or death certificate.

SUCCESS FACTOR B3 (CONT'D)

Develop training strategies and materials for civil registrars and others involved (e.g., health workers in facilities and the community) with respect to birth and death registration processes

- Provide training and continuous on-the-job education to local registrars so that they are familiar with the laws and regulations governing civil registration and vital statistics.

- Ensure that training programs for registration staff emphasize the importance of recording registration information accurately and completely.

- Provide guidance materials to civil registrars describing good practices in birth and death registration and certification, as well as in the maintenance of archives and information sharing across government sectors.

- Provide information and training to health sector staff to facilitate registration, including training on their role as informant or notifier (as appropriate).

- Develop materials and train civil registrars on public education strategies regarding the importance of registration; including information on how families may access assistance in completing registration forms, obtain help completing the required documents for burials, and obtain a birth or death certificate (14).

- Make available training and guidance materials to all personnel responsible for reporting births or deaths to the civil registrar, such as community leaders, midwives, nurses, community health workers, hospital personnel, morticians, etc. (8, 9).

REFERENCES

14 WHO, UNICEF (n.d.). Health sector contributions towards improving the civil registration of births and deaths in low-income countries. Guidance for health sector managers, civil registrars and development partners. https://vital.ent.box.com/file/656175971161.

SUCCESS FACTOR B4

Infrastructure and Other System Resources for Birth and Death Registration

PURPOSE

To ensure the necessary infrastructure for the registration of births and deaths.

OUTPUT

Infrastructure and other system resources are in place to register and to collect and share data on births and deaths.

REFERENCES

15 Plan International and Jembi Health Systems (2017). CRVS digitisation guidebook: A step-by-step guide to digitising civil registration and vital statistics processes in low resource settings. African Development Bank for the African Programme for the Accelerated Improvement of Civil Registration and Vital Statistics, Addis Ababa. http://www.crvs-dgb.org/en/.

16 Plan International, APAI CRVS. Open CRVS. An open and standards based solution for CRVS. http://www.id4africa.com/2017_event/Presentations/3-5-3_Plan_International_Edward_Duffus.pdf.

IMPLEMENTATION TASKS

☐ **Maintain necessary IT infrastructure for birth and death registration**

- When possible, move to a digital civil registration system from a paper-based system. Digital systems aid in timely data sharing and enhanced data storage and security. In addition, permitting online registration has the potential to increase coverage, as those without the time or resources to travel to a registration office may be able to register through mobile phones and other devices. See the CRVS Digitization Guidebook (23) for more information and guidance.

- Digitized systems can provide benefits to remote communities. Remote and rural populations are often regions of high levels of poverty and lack access to internet or mobile phone services. Providing online registration services in urban areas can save resources, which can then be invested to provide in-person mobile registration services to remote and rural populations who lack internet or mobile phone access.

- Digitization can prevent loss in the event of natural disasters, such as floods, earthquakes, volcanic eruptions and tsunamis. Such emergencies often cause a disruption in birth and death registration services and may result in the loss of paper-based documentation. This, in turn, may result in people being unable to prove citizenship if they cross borders. A digital CRVS system, with information stored in the cloud or a secure offsite location, may help to avoid loss of documentation and preserve registration records.

- For both digital and paper-based systems, ensure that civil registration offices have adequate equipment and supplies, including but not limited to computers, high-speed internet access, forms/pamphlets, phones, photocopiers/scanners, etc.

- Develop protocols and tools for the interoperability of the IT systems among stakeholders, including the civil registration agency, ministry of health and national statistics office. Build systems to ensure data security and privacy (15, 16).

- As necessary, allow for the use of paper in the periphery to prevent technology limitations from acting as a barrier to vital events registration.

- Sustainability may be a challenge in countries where resources for the CRVS systems are not adequate. Where appropriate, local innovations and technologies may be enabled by law in order to implement processes that are designed to serve the local context by local leaders who can help sustain ownership and buy-in.

Intervention Area C:

Quality Assurance

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A structured and routine quality assurance program is in place to ensure the highest possible quality of civil registration data and contribute to the continuous improvement of civil registration processes.

SUCCESS FACTOR C1

Supportive Supervision System for Civil Registration Data Collection

PURPOSE

To ensure that civil registration data collection processes are followed, and the quality and completeness of civil registration data are monitored and continuously improved.

OUTPUT

Supportive supervision system in place for civil registration data collection process.

IMPLEMENTATION TASKS

Provide supportive supervision to health care workers, civil registrars and statisticians

- Supervisors in health facilities should provide support to health care workers who complete birth and death notification forms for submission to the civil registrar. This supportive supervision should include oversight to ensure that health care workers: 1) capture data on births and deaths close to the time of the event, which helps ensure the accuracy of the information; 2) complete birth and death notification forms accurately and completely; and 3) submit birth and death notifications to the civil registrar on time, in accordance with existing regulations.

- Supervisors within the national civil registration agency should provide support to local civil registrars who receive, review and verify data for birth and death registration. This supervision should include oversight to ensure that civil registrars: 1) review data and query informants and notifiers regarding any incomplete or inaccurate data; 2) enter data into the system without any errors (if paper reports are transcribed); and 3) submit registration records and reports on a regular and timely basis to the national level.

- Supervisors within the national statistics office should provide support to statisticians who generate vital statistics. This supervision should ensure that statisticians follow standard operating procedures for querying, editing, compilation and generation in order to ensure accuracy of vital statistics.

SUCCESS FACTOR C2

Routine Quality Assurance System for Registration of Births and Deaths

PURPOSE
To ensure that the quality of birth and death registration data is assured on a regular basis.

OUTPUT
Quality assurance system for the assessment of collected birth and death registration data.

REFERENCES

17 Murray CJ, Rajaratnam JK, Marcus J, Laakso T, Lopez AD.(2010). What can we conclude from death registration? Improved methods for evaluating completeness. PLoS Med. 2010;7(4). https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000262.

18 Hill, K. (2017). Analytical Methods to Evaluate the Completeness and Quality of Death Registration: Current State of Knowledge, UN Population Division. http://www.un.org/en/development/desa/population/publications/pdf/technical/TP2017-2.pdf

19 Vital Strategies, CRVS Systems Improvement Framework. https://www.vitalstrategies.org/resources/crvs-systems-improvement-framework/

IMPLEMENTATION TASKS

☐ **Conduct routine quality checks of collected birth and death registration data**

- Quality assurance encompasses the steps taken at each stage of the operations of civil registration and vital statistics systems to ensure that all vital events occurring within the country are registered on time and without duplication, that all related information is accurately recorded, and that the compilation and processing of recorded vital events result in the proper and timely production of vital statistics (2).

- The quality of vital statistics is measured by their completeness, correctness or accuracy, availability and timeliness. (2).

- *Complete* registration has been achieved when every vital event that has occurred to the members of the population of a particular country (or area), within a specified time period, has been registered in the system, i.e., has a vital event registration record. This means that the system has attained 100% coverage. Any deviation from complete coverage is measured by "coverage error" (2, 17).

- *Correctness* or *accuracy* of registration is achieved when data items for each vital event on the vital record have been accurately and completely filled in, i.e., when there are no response errors or missing items. The measurement of any deviation from correctness is called "content error" (18).

- *Availability* means that data that have been collected, filed, processed and stored in each system (civil registration and vital statistics) are accessible to users in a user-friendly format (2, 18).

- *Timeliness* in registration means that every event that has occurred in the country (or area) has been reported for registration within the legally stipulated time period (2).

☐ **Conduct routine quality assurance at health facilities**

- Quality assurance should be carried out at the health facility where the birth or death notification form was filled and should assess the quality and completeness of the data.

- In systems where the health facility is the informant, health care workers should ask the family to confirm the information before health sector staff enter the data into the system, by reviewing and signing (electronically or manually).

- Data entry staff should check for issues such as missing demographic or statistical data. If health care workers fill the notification form directly into an electronic data capture system, these checks can be enforced using data entry constraints and required fields.

SUCCESS FACTOR C2 (CONT'D)

Conduct routine quality assurance at local civil registration offices

- After birth and death information is submitted to the civil registrar, the civil registrar should conduct further quality checks to ensure that data is complete. If there is incomplete or seemingly inaccurate data, there should be a system for the civil registrar to query the health facility. If data is submitted directly by family members, the civil registrar should review the information for correctness and completeness, verifying the information against other documentation (such as health facility notification forms) and request corrected or additional information as needed from the family before they leave the registration office.

- The civil registration agency should develop strategies to minimize and manage potential duplicated records, including using unique event IDs for vital events, and a unique ID for the individual concerned.

- Quality assurance steps should ensure that: (a) all local registration areas have carried out the required registration functions; (b) every vital event occurring to members of the population in a given area has a record in the system; and (c) all local offices transmit the records to a higher-level registration office, according to established procedures.

- Quality assurance may also include checks to ensure confidentiality procedures and protocols are followed (2). Security measures may include daily logs and matching exercises, using control numbers, matching control numbers to all registration documents, and secure storage of paper documents are all strategies to avoid fraud and misuse.

Conduct routine quality assurance at national statistics office

- Quality assurance steps should also be taken by offices responsible for the compilation and dissemination of vital statistics. The audit system should have procedures in place to ensure that: (a) statistical reports from the registration areas are received on a timely basis; (b) every registration area has reported its data; and (c) the frequencies of each type of vital event reported are close to the expected values for the same time period.

SUCCESS FACTOR C2 (CONT'D)

Develop a monitoring and evaluation plan to continuously evaluate operations of the CRVS system, including key indicators, data required and frequency of evaluation

- A monitoring and evaluation (M&E) plan should be structured to include key performance indicators (KPI) associated with each CRVS process. The country's CRVS strategic plan may include KPIs, including the data collection source, data collection method and frequency of data collection. If the strategic plan contains such an M&E plan, this plan should be followed. If not, stakeholders should develop an M&E plan. (See CRVS Systems Improvement Framework, Section 5). M&E should be conducted on an ongoing basis, with data collected at the intervals determined in the M&E plan.

- Key indicators may be chosen to monitor the progress of the civil registration system over time. These indicators should measure the process and function of the civil registration services in a country. Key performance measures may also help a country's CRVS system by serving as benchmarks for measuring the outputs of the civil registrar staff, which can help in adjusting for demand and distribution of human resources (7, 19). A few examples of themes that should be measured by the indicators chosen include:

  - Completeness of birth and death registration: The number of each type of vital event (births, deaths and facility or community) should be periodically reviewed to assess registration completeness based on historical data. Data from hospitals may be collected to compare the number of vital events reported by the hospital against the number of vital events registered by the civil registrar. Geographic breakdown of completeness of birth and death registration can alert registration officials to geographic areas that may require resources to increase access to services (such as mobile registration) or to conduct education campaigns.

  - Timeliness: Tracking on-time and late reporting of births and deaths, broken down by geographic location, can alert officials to problems in the system.

  - Accuracy and efficiency: Monitoring the operations of the civil registration system, such as the average workload of registrars, errors in the capture of information, the frequency of edits, and the average time needed to enter a record are important for understanding the function of the CRVS system and committing resources to its improvement (7).

SUCCESS FACTOR C2 (CONT'D)

- – Gender equality measures: Gender imbalances in the civil registration of births and deaths may also affect quality of civil registration data in a country. Under-registration of female births and deaths is a common occurrence and countries should develop specific strategies to achieve a greater balance in coverage across genders.

- – Accessibility: Increasing access, as previously described, is important to uphold equity in the CRVS system. Regularly evaluating the performance of the CRVS system in covering all segments of a population (geographic, urban vs. rural, ethnic minorities, migrants or refugees, etc.) will provide benchmarking for improving coverage, and therefore quality, of civil registration data (2).

- – Total number of certificates issued for each type of vital event, disaggregated by geographical or administrative level: A designated manager(s) should use this information to identify unexpected increases or decreases in vital event registration or certification by comparing current monthly data to historical data trends.

- • Implement improvements in a sample of locations, ideally a nationally representative sample, to refine approaches.

Intervention Area D:

Data Analysis, Interpretation & Use

A system is in place for the collected birth and death registration data to be analyzed, interpreted, and used for administration and planning.

SUCCESS FACTOR D1

Analysis, Interpretation, Dissemination and Use of Birth and Death Registration Data

PURPOSE

To analyze, interpret, disseminate, and use birth and death registration data in the form of vital statistics for the purpose of administrative planning and policymaking..

OUTPUT

Vital statistics on births and deaths available to government officials and policymakers.

IMPLEMENTATION TASKS

☐ **Regularly compile and publish vital statistics reports to inform decision-making and policymaking**

- Birth and death registration data should be compiled and used to generate vital statistics, including mortality statistics, using the United Nations-recommended minimum list of tabulations (2).

- An annual vital statistics report, including cause-specific mortality statistics, should be produced within 12 months of the end of the registration calendar year.

- Provisional vital statistics data should be produced monthly or quarterly to assist with timely decision-making. This provisional data should include aggregate births and deaths by geographic location and all-cause mortality data by age, sex and location (20).

- Relevant government officials should produce technical briefs and statistical reports that present actionable data to policymakers (e.g. mortality technical working group, national CRVS steering committee) to faciliate decision-making.

- The civil registration and national statistics agency should establish and implement open data and data sharing protocols with expert entities such as universities, public health institutes and researchers to build capacities and maximize the utility of available data.

- The civil registration agency should ensure data security and confidentiality of information to maintain trust in the CRVS system while maximizing the use of the information for the public benefit.

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SUCCESS FACTOR D1 (CONT'D)

Review the quality of birth and death statistics derived from civil registration records to identify deficiencies and implement remedial actions

- The production of vital statistics reports depends on the quality of vital statistics data described in Intervention Area C Quality Assurance. A vital statistics performance index (21) combines six dimensions of vital statistic strength, which incorporate aspects from Guides 2-4 including: quality of cause of death reporting i; quality of age and sex reporting; internal consistency; completeness of death reporting; level of cause-specific detail; and data availability/timeliness (21).

- Be transparent about data limitations and identify improvement strategies. Analyzing the quality of civil registration data reveals areas that need further support or where data is lacking to provide reliable estimates of demographic indicators; it may also reveal system-wide weaknesses in the civil registration system that could be producing biases and weaknesses in the quality of data.

- Work with demographers, statisticians and epidemiologists to evaluate birth and death (including cause of death) statistics across the following broad dimensions: completeness, accuracy, generalizability of the results, relevance, comparability, timeliness, and availability and accessibility. Completeness will ideally be at or above 90% (22).

**Bloomberg Philanthropies
Data for Health Initiative**

The Bloomberg Philanthropies Data for Health Initiative provides technical assistance to over 25 low- and middle-income countries worldwide to improve the collection and use of critical public health data. The Civil Registration and Vital Statistics (CRVS) Program is one of five Initiative components; the other four components focus on data use; developing new tools for noncommunicable disease risk factor surveillance; strengthening cancer registries; and supporting a range of health data-related country projects through a global grants program.

Collaborating institutions in the Initiative are:
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