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DATA FOR HEALTH INITIATIVE

CRVS technical guide

A framework for evaluating national CRVS systems at baseline

April 2018

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Contents

Abbreviations

COD	cause of death
CRVS	civil registration and vital statistics
D4H	Data for Health
EA	enterprise architecture
SDG	Sustainable Development Goal

Key terms

Cause of death:	refers to 'all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstance of the accident or violence which produced any such injuries' (Twentieth World Health Assembly, 1967)
Completeness:	is defined as the percentage of actual births or deaths in a population that are registered. Put another way, it is the number of registered births or deaths divided by the actual number of births or deaths in a population.
Coverage:	is defined as the fraction of the population with access to registration points.
Mortality coding:	is a complex process by which all diseases and conditions recorded on a medical death certificate are transformed from text to alpha-numeric codes, following strict procedures as set out by the International Classification of Diseases and Related Health Problems, 10th Revision.
Process mapping:	is becoming an essential early step in the comprehensive assessment of any CRVS system. A process map is a visual snapshot of the end-to-end activities, stakeholders and requirements of a CRVS system.
Underlying cause of death:	is 'the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury' (World Health Organization, 1994).
Verbal autopsy:	is a structured interview carried out with family members and/or caregivers of the deceased to elicit signs and symptoms and other important information which can be used to assign a probable underlying cause of death.

A framework for evaluating national CRVS systems at baseline

Executive summary

Civil registration and vital statistics (CRVS) systems are the cornerstone of sustainable development. After decades of neglect, there is now considerable global momentum for CRVS systems strengthening to achieve the 2030 Agenda for Sustainable Development. Currently, many countries do not have adequate CRVS systems in place and will require collaborative partnerships for CRVS improvement. CRVS technical and implementation partners will therefore play an important role in helping countries to strengthen the collection and use of vital statistics generated from civil registration for population health planning and broader Sustainable Development Goal achievement. However, to provide effective and efficient technical support to countries, CRVS partners will need to comprehensively understand the characteristics of a country's CRVS system at baseline.

This *CRVS technical outcome series* paper sets out the baseline evaluation framework applied by the Bloomberg Philanthropies Data for Health (D4H) Initiative. The framework is an important tool that delivers a concise and up-to-date actionable evaluation of a CRVS system. The framework assesses four key domains of CRVS system performance:

- Quality, timeliness and detail of vital statistics (births, deaths and cause of death) available to governments.
- Functioning of the CRVS system.
- Institutional capacity for CRVS production and use.
- Demand for CRVS.

Undertaking the baseline evaluation is a key step to enable those working to strengthen CRVS systems to identify key areas for CRVS technical intervention for maximum value and impact. A baseline evaluation also provides a starting point to empirically measure the long-term effect of the CRVS technical interventions. Although specifically designed for the D4H Initiative, principles of the baseline evaluation framework can be adapted to other CRVS improvement and measurement initiatives.

Improving national CRVS systems

Deficiencies in birth and death registration around the world are causing a 'scandal of invisibility'.[1] Globally, the births of nearly 230 million children under the age of five have never been recorded,[2] and an estimated two-thirds of all deaths that occur in the community (that is, outside of health facilities) remain unregistered.[3] In particular, births and deaths among the poorest and most marginalised people are often unregistered.

Not being counted matters. For individuals, birth certificates (the legal record of a birth registration) enable people to access a range of social services, from education to health care.

For governments, accurate birth and death statistics, including cause of death (COD) data, are essential for evidence-based health policy and planning. Without them, governments lack evidence about issues such as the causes of premature mortality, and where to allocate limited financial and human resources.[4]

Deficiencies in birth and death registration are often caused by weak or inadequate civil registration and vital statistics (CRVS) systems. International, regional and national policy mandates have therefore been introduced to drive CRVS strengthening efforts in individual countries. The most recent of these comes from the United Nations General Assembly's adoption of the Sustainable Development Goal (SDG) agenda in September 2015. The agenda is a 35-page 'plan of action for people, planet and prosperity' containing 17 goals, which United Nations Member States unanimously agreed

1 Setel et al. A scandal of invisibility: making everyone count by counting everyone. ***Lancet*** 2007; 370(9598):1569-1577.

2 United Nations Children's Fund. *Every child's birth right: inequities and trends in birth registration.* New York, USA: UNICEF; 2013.

3 De Savigny D, Riley I, Chandramohan D, et al. Integrating community- based verbal autopsy into civil registration and vital statistics (CRVS): system-level considerations. *Global Health Action* 2017; 10:1272882.

4 Shibuya K, Boerma JT. Measuring progress towards reducing health inequalities. *Bulletin of the World Health Organization* 2005; 83:162.

to strive towards and achieve by 2030.[5] SDG achievement cannot be implemented, measured or achieved without data produced from reliable CRVS systems, and strengthening CRVS systems is an explicit part of the SDG framework.[6]

Several regional mandates are in place to support countries in their CRVS system improvement efforts. These include the African Programme on Accelerated Improvement of CRVS[7] and the Asia–Pacific Ministerial Declaration to 'Get everyone in the picture', which pronounced 2015–24 to be the Asia–Pacific CRVS Decade.[8] National governments are also taking international and regional commitments seriously at the domestic level. The Philippines, for example, has also declared 2015–24 to be the CRVS Decade for the Philippines, with the goal of getting 'every Pinoy and Pinay in the picture'.[9]

Countries will require collaborative partnerships at multiple levels (local, regional, national and international) to successfully strengthen CRVS systems. Technical and implementation partners will play an important role in helping countries to improve the collection and use of their CRVS information. The Bloomberg Philanthropies Data for Health (D4H) Initiative, for example, has partnered with 2 cities and 18 low and- middle-income countries to provide technical assistance, build capacity and fund programs for long-term CRVS improvement, as well as to facilitate strategic use of CRVS data for population health policy and planning (**Figure 1**).

Figure 1 D4H Initiative countries and cities; vital statistics performance index (best available score between 2005 and 2012)

5 United Nations General Assembly. *Transforming our world: the 2030 Agenda for Sustainable Development.* New York, USA: UN; 2015.

6 University of Melbourne. *SDG achievement will depend on CRVS systems*. CRVS summaries. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018.

7 www.apai-crvs.org/

8 www.getinthepicture.org/

9 Aquino B. *Declaring the years 2015 to 2024 as Civil Registration and Vital Statistics Decade.* Manila, Philippines: Office of the President of the Philippines; 2015.

What is a CRVS system baseline evaluation, and why is it important?

Given the global momentum in improving CRVS systems, countries and other stakeholders will be increasingly calling on technical partners to support CRVS systems scale up.

The D4H Initiative has designed and implemented the baseline evaluation framework as an assessment tool. Technical partners and countries can use the tool at the start of their collaboration to understand the current CRVS system and data landscape, including strengths, weaknesses and limitations. A baseline evaluation report is a concise technical reference document, preferably completed before any technical interventions begin.

There are three reasons to conduct a baseline evaluation:

- To obtain a comprehensive and up-to-date actionable assessment of a CRVS system, including the quality of the data it produces.
- To help countries to identify the most efficient and cost-effective areas for CRVS technical intervention, to ensure maximum value, impact and outcome.
- To provide a starting point to measure the effect of the technical interventions over regular intervals. By summarising the CRVS situation at baseline, the progress of technical interventions can be empirically seen.

Other assessment frameworks

The interest in strengthening CRVS systems has produced several complementary assessment frameworks and tools, including rapid and comprehensive assessments[10,11] and innovations around using enterprise architecture (EA) for process mapping.[12]

More recently, specific assessment tools, such as those used for assessing legal and regulatory frameworks,[13] the quality of cause of death data[14], and medical certificates of cause of death,[15] have also been developed.

There is no 'right' way of establishing an effective CRVS system. Each of the various assessment tools and frameworks can be used to better understand a system, including its strengths and weaknesses, and to generate an idea of what an 'ideal' system might look like. Such an understanding will allow for the main issues to be identified, which will need to be addressed through technical interventions.

The rapid and comprehensive assessments developed by the University of Queensland, and endorsed by the World Health Organization (WHO), are the best known and most widely used of the other frameworks. These frameworks have been applied extensively in almost every WHO region of the world. The baseline evaluation differs from the rapid assessment, because the baseline evaluation is not only used to describe and assess the CRVS system, but is also used as a comparative tool for measuring the impact of technical interventions. In other words, although previous assessment frameworks were designed to provide information on CRVS system strengths and weaknesses, the baseline evaluation framework was also designed to assess progress with technical interventions and system improvements.

The comparative strengths, weaknesses and applications of assessment frameworks are in **Table 1**. Importantly, the baseline evaluation framework is not a scorecard to measure a country's CRVS systems' function or dysfunction against some standard: rather, it is a best practice technical tool used to comparatively measure and track the impact of CRVS technical interventions.

10 World Health Organization, and Health Information Systems Knowledge Hub, University of Queensland. *Rapid assessment of national civil registration and vital statistics systems.* Geneva, Switzerland: WHO; 2010.

11 Ibid. *Improving the quality and use of birth, death and cause-of-death information: guidance for a standards-based review of country practices.* Geneva, Switzerland: WHO; 2010.

12 de Savigny D, Cobos Muñoz D. *Understanding CRVS systems: The importance of process mapping.* CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018.

13 Schwid A, Frederes A, Bronson G, et al. CRVS legal and regulatory review tools and methodology. New York, USA: Vital Strategies and Global Health Advocacy Incubator; 2018.

14 Mikkelsen L, Lopez AD. ***Guidance for assessing and interpreting the quality of mortality data using ANACONDA***. CRVS Resources and tools. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, and Civil Registration and Vital Statistics Improvement, University of Melbourne; 2017.

15 University of Melbourne. ***Assessing the quality of death certificates: Rapid tool.*** CRVS resources and tools. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2018.

Table 1 Available CRVS system assessment tools, frameworks and methods for improvement

Tool, framework or method	Understanding a CRVS system			Improving specific components		Monitoring and evaluation
	Rapid assessment	Process mapping	Comprehensive assessment	Legal and regulatory review toolkit	ANACONDA	Baseline evaluation
Overview	The rapid assessment generates a series of numerical scores that reflect the strengths and weaknesses of all the key components of a CRVS system. It also produces one overall score for classifying systems into one of four categories. However, it is not able to identify detailed development priorities and feasible improvement strategies.	Process mapping provides a visual representation of the end-to-end processes for births and deaths within a CRVS system, including activities across different stakeholders. Four different maps are usually produced: ■ Births in a health facility ■ Births in the community ■ Deaths in a health facility ■ Deaths in the community. Two types of maps are often produced: ás-is' and ás-desired'.	The comprehensive assessment uses materials that provide guidance on how to systematically evaluate the quality and functioning of a CRVS system. It provides guidance about: ■ Assessing the inputs, processes and outputs of the legal and regulatory framework ■ Registration practices, coverage and completeness ■ Certification and coding practices ■ Compiling, tabulating and using the resulting data.	The toolkit provides guidance on how to analyse existing CRVS laws to identify legal obstacles and opportunities for improving CRVS systems. It provides concise explanations of 43 best practices and guidance on how to evaluate compliance with them.	ANACONDA is an electronic tool that assesses the accuracy and completeness of mortality and COD data. It applies 30 different tests to raw data, to provide a comprehensive data quality review. It also automatically generates the associated figures and tables to base a report on.	A baseline evaluation report is a concise technical reference document completed for each country or city at the start of a project. A baseline evaluation provides information and guidance on a country's CRVS system and data quality, and the most cost-effective and efficient areas for technical intervention. It can also be used as the starting point for the empirical measuring, monitoring and evaluation of the impact of the CRVS technical interventions over time.
Applications	The rapid assessment is primarily aimed at raising awareness and generating political buy-in for a more comprehensive review.	All countries are strongly encouraged to include process mapping as part of any CRVS assessment activities, as it provides a shared understanding of the strengths and weaknesses of of birth and death reporting in the current system.	The comprehensive assessment provides a complete understanding of the strengths and weaknesses within the CRVS system, when evidence for action is required. As part of the assessment, guidance is provided on how to use the results to develop a strategic action plan for CRVS improvement.	Countries that have outdated legislation, or who have identified it as a key issue as part of their assessment process, should use this tool and method.	All countries that have COD data coded to ICD-10 by age and sex are encouraged to regularly use ANACONDA as part of routine quality assurance and monitoring. It also points to the priority areas for action to improve a CRVS system.	The baseline evaluation report is not a scorecard to measure a country's CRVS systems function or dysfunction against some standard. Rather, it is a best-practice technical tool (in report form) used to assess the baseline to help to inform planning and ongoing measurement.

Understanding the baseline evaluation framework

As set out in Principles and recommendations for a vital statistics system,[16] civil registration is the process whereby major vital events occurring in a population are officially recorded. The Office of the Civil Registrar (or local equivalent) maintains registers that contain information about vital events, and issues legal certificates on demand to entitled claimants. In addition to this legal function, it performs a statistical function that is crucial for government. The information collected through civil registration serves many government purposes and is the key source of vital statistics when aggregated, analysed and disseminated.

A CRVS system comprises the organisation and infrastructure for compiling vital statistics, as well as the human capacity to effectively use those statistics to guide health and social policy and development in a country. The baseline evaluation framework has four domains of inquiry that aim to explore both of these aspects of the system:

- Domain 1 assesses the outputs of the CRVS system. It documents what birth, death and COD data are available to government. It also describes whether the data are timely and of good quality.
- Domain 2 assesses how operationally efficient the CRVS system is, including identifying bottlenecks, duplications, whether the country follows international standards and best practice (for example, in medical certification of COD), and how a country's CRVS system is anchored in law to ensure continuity, consistency and comprehensiveness.
- Domain 3 assesses the human capacity available to ensure operation of the civil registration system and produce the resulting vital statistics. It assesses whether any other CRVS system planning has previously occurred, whether there is an inter-agency CRVS committee in place, and whether international best-practice benchmarks are integrated into current CRVS practices, data collation and reporting.
- Domain 4 assesses whether there is a demand for CRVS data from key policy-makers and identifies the incentives and initiatives that have occurred in-country to improve community knowledge and practices on birth and death registration. This domain of inquiry has a strong qualitative component. It includes a baseline assessment of the level of community awareness of the significance of birth and death registration, and the ability of community members to access registration services.

The rest of this section explains each domain and sub-domains in more detail.

16 United Nations Department of Economic and Social Affairs (Statistical Division). *Principles and recommendations for a vital statistics system*. Revision 3. New York, USA: UNSD; 2014.

Quality, timeliness and detail of vital statistics available to government	Functioning of the CRVS system
Institutional capacity for CRVS production and use	Demand for CRVS

Domain 1: Quality, timeliness and detail of vital statistics available to government

Sub-domain 1.1: Birth, death and cause of death data available from the CRVS system

Objective: to identify the availability of birth, death and cause of death data for monitoring how well the CRVS system performs and produces vital statistics.

This first sub-domain documents the birth, death and COD data that are available and consolidated by government. This includes identifying:

- The data characteristics (for example, the number of events and other variables available for analysis – sex, age, place of occurrence).
- How many years of data are available.
- The most recent year of available data.
- Where the data can be sourced.

This sub-domain assesses data sourced from the CRVS system, and from other sources such as the health sector, police reports, coroners, cemeteries and religious authorities, which may or may not be linked to the CRVS system.

Sub-domain 1.2: Other systems of continuous surveillance of birth and death data

Objective: to identify the availability of birth, death and cause of death data for monitoring how well the CRVS system performs and produces vital statistics.

Data on births, deaths and COD may not only be in the CRVS system or others (as listed above), but may also be accessible from other discrete surveillance sites, such as demographic surveillance sites and research settings. Because these sites are often located in multiple settings (urban, rural, specific population groups), they can provide complementary data to what is collected through the CRVS system.

Sub-domain 1.3: Data quality

Objective: to assess whether the data collected, aggregated and reported are accurate, reliable and complete.

This sub-domain assesses the quality of data collected and its potential to be 'fit for purpose' for policy and planning. It includes assessments of the completeness of birth and death registration, the reporting of deaths from health facilities to the CRVS system, and the timeliness of publication of vital statistics. The Vital Statistics Performance Index for Quality is a metric that assesses the quality and utility of mortality data, and is the recommended metric to analyse the overall quality of mortality data (see **Box 1**).

Box 1: Vital Statistics Performance Index for Quality

The Vital Statistics Performance Index for Quality, or VSPI(Q), is a summary index of the quality of mortality data based on the metric developed by Philips et al. in 2014.[17] The VSPI(Q) focuses on the quality of cause of death data (disaggregated by age and gender of the deceased, and underlying cause of death coded to the International Classification of Diseases 10th revision), and assesses civil registration and vital statistics system performance against five key measures of data quality:

- Completeness of death registration
- Fraction of unusable codes
- Amount of detail in the cause of death list to tabulate the data
- Extent to which age and or sex are missing in the data
- Number of biologically implausible underlying causes.

Scores on each of these five components are weighted according to their importance in determining the correct cause of death distribution in a population, and combined into a VSPI(Q) score, ranging from 0 to 100. The higher the score, the better the quality of the mortality data.

17 Phillips DE, Lozano R, Naghavi M, et al. A composite metric for assessing data on mortality and causes of death: the vital statistics performance index. Population Health Metrics 2014; 12:14.

Quality, timeliness and detail of vital statistics available to government	**Functioning of the CRVS system**
Institutional capacity for CRVS production and use	Demand for CRVS

Domain 2: Functioning of the CRVS system

Sub-domain 2.1: CRVS system structure, processes and governance

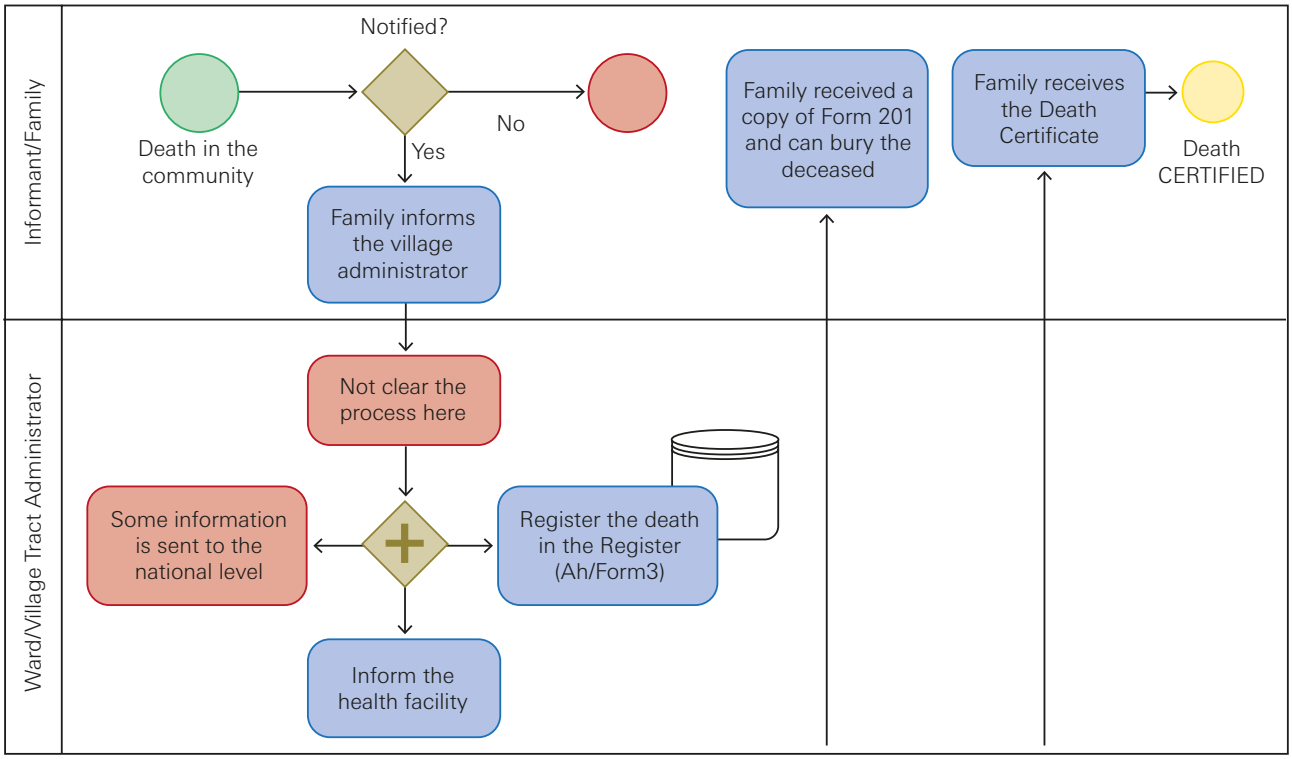
Objective: to systematically understand, analyse and optimise CRVS system processes and relationships

Enterprise Architecture (EA) is a method that provides a framework to describe the 'fundamental concepts or properties of a system in its environment embodied in its elements, relationships, and in the principles of its design and evolution'.[18]

EA uses process mapping and modelling to describe and analyse the business architecture of a system, including explicitly identifying process bottlenecks, duplication of tasks, and dead ends, and opportunities for improvement (**Figure 2**). A process map is a visual snapshot of the activities, stakeholders and requirements of a process from end to end. Process maps can capture complexity and meaningfully display the multiple interactions (or lack of them) among different stakeholders in the CRVS system.[19]

EA and process maps can help countries and their technical partners to assess whether CRVS system goals and objectives are aligned with current country operations. This knowledge can help to improve CRVS system design.

Figure 2 Example of a process map of a death in the community



18 International Organization for Standardization. ISO/IEC/IEEE42010: *systems and software engineering – architecture description.* Geneva, Switzerland: ISO; 2013

19 de Savigny D, Cobos Muñoz D. *Understanding CRVS systems: The importance of process mapping.* CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018.

Sub-domain 2.2: Legal and regulatory framework for CRVS

Objective: to identify how a country's CRVS system is anchored in law, to help ensure its continuity, consistency, accuracy and comprehensiveness.

Making registration activities subject to the law, and establishing procedural rules and regulations, are essential for the efficient management, operation and maintenance of any CRVS system. Legislation helps to ensure the completeness of registration and improve the accuracy of information held in the civil record.

Information collected as part of this sub-domain includes the existence of laws relating to birth and death registration, and the year(s) they were enacted. Additional detail is required for death registration laws – for instance, if the law defines what source of COD information can be used in official statistics (for example, medical certification from a physician or other health worker; verbal autopsy). Other important legislative and regulatory frameworks to be considered include reporting obligations for public and private hospitals, processes for disposing bodies, and coronial systems for certifying and registering non-natural deaths.

Sub-domain 2.3: Cause of death reporting and certification practices

Objective: to describe the processes and standards used in certifying health facility and community deaths.

Understanding the processes and standards around the medical certification of COD is one of the first steps in improving the quality of mortality statistics. Areas covered under this sub-domain include:

- Whether the International Form of Medical Certificate of Cause of Death (WHO 2016) is in use and, if not, what the major differences in the local certificate are.
- The average hours of training medical students, interns, and experienced physicians receive on certification.
- Whether deaths are coded and, if so, to what version of the International Classification of Diseases.
- Whether automated coding is used (for example, Iris).
- The extent to which verbal autopsy is used to determine COD in the community (that is, for deaths occurring outside of hospitals).

Quality, timeliness and detail of vital statistics available to government	Functioning of the CRVS system
Institutional capacity for CRVS production and use	Demand for CRVS

Domain 3: Institutional capacity for CRVS production and use

Sub-domain 3.1: Previous assessments and activities

Objective: to identify other CRVS assessments, strategic action plans and other systems strengthening activities and projects that may have occurred in the past.

Most countries have already conducted an assessment or some planning. It is important to refer to the findings of previous assessments and strategic plans, especially for recent or continuing projects.

Sub-domain 3.2: Funding

Objective: to determine if a costed investment plan for CRVS systems scale up exists and identify funding gaps.

The funding gap is the amount of money that the government has not yet identified or committed to, which is likely to act as a barrier to implementation of the investment plan. This gap can also be an opportunity for strategic technical and partner investment.

Sub-domain 3.3: Oversight

Objective: to identify if there is a national CRVS committee.

It is important to identify if a national inter-agency CRVS committee or working group exists. If so, the assessment should also identify the committee's membership (that is, government departments, and external agencies or stakeholders), and how many times the committee has met in the past 12 months.

The committee should be sufficiently high level. This is crucial for ensuring that decisions and agreed activities can be implemented effectively.[20]

20 For example terms of reference for a CRVS committee or working group, see https://crvsgateway.info/learningcentre/crvs-governance-and-architecture/crvs-coordinating-committee.

Sub-domain 3.4: Civil registration functions

Objective: to compare current civil registration practices with international best-practice standards.

Current civil registration practices for births and deaths are compared with the 'Ten CRVS Milestones' framework (**Figure 3**) developed to help policy-makers, managers and other CRVS stakeholders to understand CRVS systems as a whole and compare them with best practice.[21]

Key questions to address include:

- Who should collect information and at what level of the system?
- Who is responsible for compiling, storing, managing and disseminating data and information, and how are these activities implemented?
- What is the minimum amount of information that should be collected on each birth and death?
- What standard operating procedures, manuals or instructions exist for implementing key steps in the civil registration process?
- What are the end-to-end processes and who are the stakeholders involved to ensure vital events are certified, registered and included in national statistics?
- What is the capacity of CRVS staff to check the accuracy and completeness of records and compile data for statistical analysis?

Sub-domain 3.5: Health sector functions

Objective: to compare current health sector practices with international best-practice standards.

This sub-domain is similar to Sub-domain 3.4 on registration practices, except it emphasises capturing information about the process for certifying, analysing and disseminating COD statistics.

Sub-domain 3.6: Statistical office functions

Objective: to compare current statistical office practices with international best-practice standards.

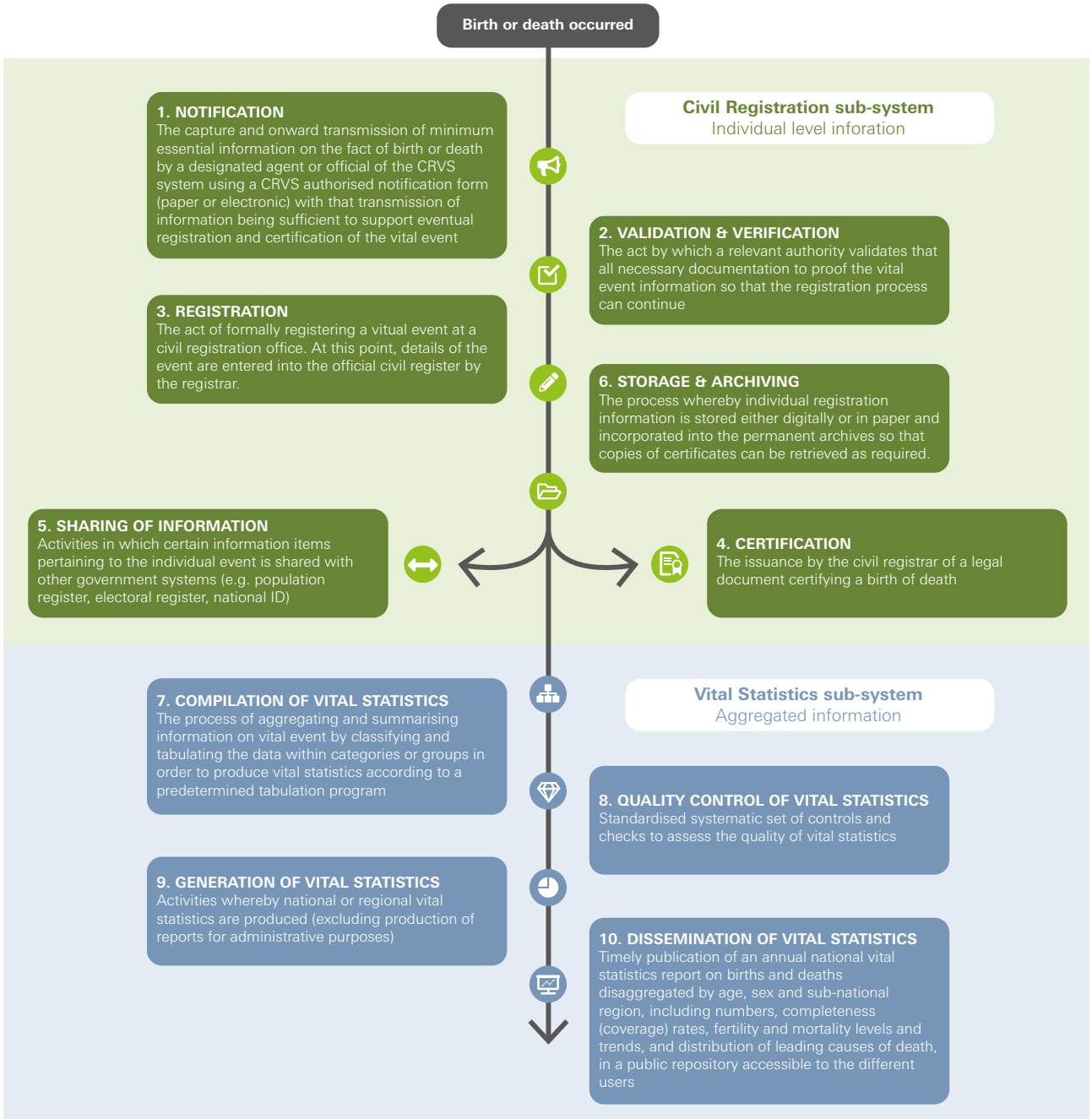
Before completing this sub-domain, it is important to identify the government agency that is responsible for producing vital statistics. This is usually the national statistics office, but local practices may vary. Key aspects to assess include the country's capacity to:

- Compile vital statistics according to global standards (such as those set by the United Naions).[22]
- Check raw data for accuracy and apply adjustment techniques.
- Analyse and interpret the data.
- Present and disseminate information for maximum use.

21 Cobos Muñoz D, Abouzahr C, de Savigny D. The 'Ten CRVS Milestones' framework for understanding Civil Registration and Vital Statistics systems. *BMJ Global Health* 2018; 3:e000673.

22 United Nations Department of Economic and Social Affairs, Statistical Division. *Principles and recommendations for a vital statistics system.* Revision 3. New York, USA: UNSD; 2014.

Figure 3 'Ten CRVS Milestones' framework



Quality, timeliness and detail of vital statistics available to government	Functioning of the CRVS system
Institutional capacity for CRVS production and use	**Demand for CRVS**

Domain 4: Demand for CRVS

Objective: to identify the incentives and initiatives that have occurred to improve community knowledge and demand for registration.

Community awareness of the importance of birth and death registration, and the ability to access registration services without barriers (for example, fees) are important for CRVS systems to function effectively and reliably. Although there are no sub-domains for this last component, five specific indicators are assessed:

- Incentives used in the past five years to encourage birth registration.
- Incentives used in the past five years to encourage death registration.
- Barriers to achieving complete registration of vital events.
- National or local incentives to increase community knowledge about the importance of civil registration.
- Recent training to increase knowledge and skills among the CRVS workforce.

Information sources

Sources that may be consulted as part of the baseline evaluation include:

- Interviews with CRVS personnel within key internal country organisations and departments, such as officials from Home Affairs, Ministry of Health, National Statistics Office, civil registry, Ministry of Justice, coroner's office, civil society, research institutions, private organisations and religious organisations.
- Interviews with CRVS-related personnel within relevant external stakeholders (such as multilaterals, bilaterals, development banks, donor agencies, interest groups, academia).
- Domestic laws, regulations and policies on CRVS.
- Previous CRVS assessments (for example, rapid or comprehensive, or modified versions of these).
- In-country CRVS handbooks, manuals, work plans, meeting notes, agency or inter-agency CRVS agreements, conference reports and other relevant documentation.
- The *Lancet* series (from 2007 and 2015) that included high-level standardised morbidity and mortality measurements across countries.
- Site or field visits.
- Multidisciplinary literature review of peer-reviewed and grey literature, including from public health, medical, law, social science and anthropological databases.

Bringing it all together: the baseline evaluation report

The baseline evaluation report has two main parts:

- Summary tables of key data and findings from the four domains of inquiry.
- A complementary narrative.

The narrative component is, in many respects, the most critical part of the report, because it describes overall CRVS system functioning. Importantly, the narrative explains what is happening in practice – that is, the difference between what ought to be occurring according to CRVS-related legislation, policy, standards and best practice; and what really is happening. This contextual information qualifies the reliability of the CRVS systems' data outputs.

The template for the baseline evaluation report is summarised in **Box 2**.

Box 2: Components of a baseline evaluation report

I. Summary
II. Introduction and background
a) System governance
b) Existing assessments of CRVS system, strategic plans and costed plans
III. Baseline status of CRVS system
a) Background
b) Functioning of the CRVS system
c) Data outputs
d) Incentives and initiatives for increasing demand
IV. Health sector: Ministry of Health
a) Background
b) Birth and death reporting
c) Cause of death reporting
V. Other sources of birth, death and cause of death data
a) Sample vital registration system
b) Health and demographic surveillance sites
c) Ad hoc data sources – verbal autopsy
d) Police
e) Religious organisations (ie church records)
f) Funeral parlours, crematoriums and cemeteries
VI. Summary and conclusions
a) Overview of current system
b) Areas for potential intervention
VI. Appendixes
a) CRVS data output
b) Health sector data output
c) Other data sources data output
d) Continuance surveillance systems data output
e) CRVS systems functionality or function
f) Institutional capacity for CRVS
g) Incentives, initiatives and barriers for increase in demand for CRVS
h) CRVS data reliability
i) Enterprise architecture process maps
j) List of national CRVS inter-agency committee members
k) Examples of current versions of birth and death certificates
l) Relevant legislation or statutes

Summary

Civil registration and vital statistics (CRVS) systems are the cornerstone of sustainable development. After decades of neglect, there is now considerable global momentum for CRVS systems strengthening to achieve the 2030 Agenda for Sustainable Development. Currently, many countries do not have adequate CRVS systems in place and will require collaborative partnerships for CRVS improvement. CRVS technical and implementation partners will therefore play an important role in helping countries to strengthen the collection and use of vital statistics generated from civil registration for population health planning and broader Sustainable Development Goal achievement. However, to provide effective and efficient technical support to countries, CRVS partners will need to comprehensively understand a country's CRVS situation at baseline.

This *CRVS technical outcome series* paper describes the baseline evaluation framework applied by the Bloomberg Philanthropies Data for Health Initiative. The framework is an important tool that allows for a concise and up-to-date scientific evaluation of CRVS improvement efforts in a country. The framework assesses four key domains of CRVS system performance:

1. quality, timeliness and detail of vital statistics (births, deaths, and cause of death) available to governments;
2. functioning of the CRVS system;
3. institutional capacity for CRVS production and use; and
4. demand for CRVS.

Undertaking the baseline evaluation is a key step to enable those working in CRVS-strengthening to:

1. obtain a comprehensive, actionable assessment of a country's CRVS system and data quality at project commencement;
2. assist in the identification of key areas for CRVS technical intervention for maximum value and impact; and
3. to provide a starting point to empirically measure the longer term impact of the CRVS technical intervention(s).

Undertaking the baseline evaluation allows for those working in CRVS system-strengthening to obtain a comprehensive, actionable and evidence-based assessment of a country's CRVS system, including data quality, at project commencement. This is a key step in identifying areas for CRVS technical intervention for maximum value and impact. A baseline evaluation also prwovides a starting point to empirically measure the long-term effect of the CRVS technical interventions. Although specifically designed for the D4H Initiative, principles of the baseline evaluation framework can be adapted to other CRVS improvement and measurement initiatives.

Related resources and products

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Library
crvsgateway.info/library

Action guide on process mapping for CRVS system-strengthening. CRVS action guides.

Enhancing CRVS system performance through effective legislation. CRVS development series.

Guidance for assessing and interpreting the quality of mortality data using ANACONDA. CRVS resources and tools.

Improving registration: best-practice guidelines. CRVS summaries.

Intervention: improving CRVS system design. CRVS summaries.

Intervention: improving registration practices. CRVS summaries.

Sustainable Development Goal achievement will depend on CRVS systems. CRVS summaries.

Understanding CRVS systems: the importance of process mapping. CRVS development series.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Learning Centre
crvsgateway.info/learningcentre

Topic 1: Introduction to CRVS.

Topic 2: CRVS governance and architecture.

Topic 3: CRVS processes.

Topic 6: CRVS tools – CRVS system assessment tools; Legal review tools; Process mapping; ANACONDA mortality data quality assessment tool.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Courses
crvsgateway.info/courses

Enterprise architecture/business process mapping for countries.

Further reading

Cobos Muñoz D, AbouZahr C, de Savigny D. The 'Ten CRVS Milestones' framework for understanding Civil Registration and Vital Statistics systems. *BMJ Global Health* 2018; 3:e000673.

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Civil Registration and Vital Statistics partners:

Vital Strategies

CDC Foundation
Together our impact is greater

THE UNIVERSITY OF MELBOURNE

The University of Melbourne recognises the Swiss Tropical and Public Health Institute for their partnership and contribution

Swiss TPH

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