CRVS technical guide
Action guide on process mapping for CRVS systems

This *CRVS action guide* is edited from 'Understanding CRVS systems: The importance of process mapping available at https://crvsgateway_info.myudo.net/file/9847/46

1 Information gathering

2 Description of current processes

3 Analysis of current processes

4 Review and improvement

What is civil registration and vital statistics, and why are so many systems failing?

Civil registration is a process where major vital events occurring in a population are officially recorded. It is defined as the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events in a population, in accordance with the legal requirements of the country.[1]

The office of the civil registrar maintains the records and registers that contain information about vital events, and issues legal certificates on demand to entitled claimants. This legal documentation can be used by people to support claims of nationality, identity, civil status and family relationships.

In addition to this legal function, the information collected through the civil registration system is aggregated, analysed and disseminated in the form of vital statistics of the population. This data is crucial for population health policy and planning purposes. Reliable and quality data from civil registration and vital statistics (CRVS) systems will also be necessary for countries to measure, monitor and evaluate achievement of the Sustainable Development Goals (SDGs).

Even though all CRVS systems have the same purpose, each country's CRVS system has moved along different paths. CRVS systems are complex, involving many in-country stakeholders and processes. CRVS systems have also evolved differently in each country over time, thus a 'one size fits all' model does not exist. Countries differ in their CRVS organisation, implementation, processes, capacities, scale, and stakeholders. Adding to the complexity of CRVS systems, they form part of a country's larger political, economic, social, health, and information systems.

Almost all CRVS systems in low and middle-income countries (LMICs) are failing to achieve adequate levels of completeness and quality, despite attempts to apply standard methods proven to work in high-income nations.[2] This suggests addressing system failure challenges might be the key to longer-term CRVS strengthening in LMICs, rather than standalone or ad hoc technical improvement efforts.

What is process mapping?

Process mapping and modelling is one of the tools used in enterprise architecture to describe and analyse the business architecture of a system. It is a systematic and standardised approach that CRVS stakeholders can use to understand, analyse and optimise processes within complex systems, in order to achieve intended system goals.

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

2   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; 10:127882.

Process maps make it easier to understand complex interactions and present them graphically to help policy makers, managers and implementers better understand their CRVS system. This is a prerequisite for innovative solutions. Process mapping is a new way of looking at CRVS system processes. It stimulates innovative thinking and pioneering solutions that will consider the technical aspects of a problem and their causal roots and the systemic implications.

A process map is a visual snapshot of the end-to-end activities, stakeholders and requirements of a CRVS system (**Figure 1**). When developing a process map, countries should aim to create maps of the declaration, notification, and registration of:

1. births in the community,
2. births in a health facility,
3. deaths in the community, and
4. deaths in a health facility.

A process mapping exercise will begin with the development of a so called *As-Is* process map for each of the four processes listed above. *As-Is* process maps describe the current end-to-end flow of activities and stakeholders involved in each of the four CRVS systems processes, and their relationship among one another. As-Is process maps will assist countries and their technical partners assess whether current CRVS systems goals and objectives are aligned with current country operations.

The *As-Desired* CRVS process maps, on the other hand, should visually map out what a country's desired CRVS system might look like from end-to-end.
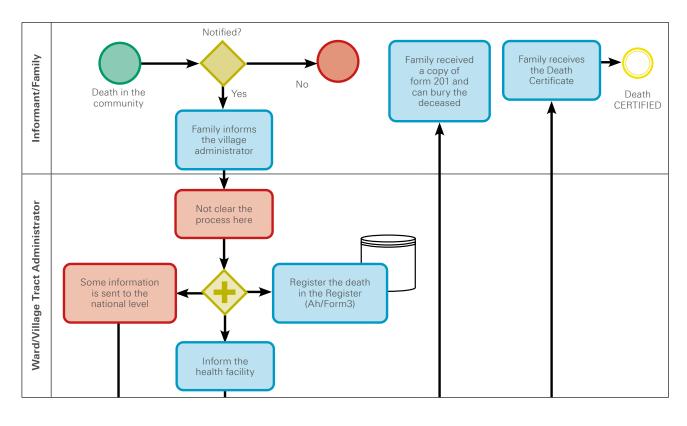
Figure 1 Example of a process map of a death in the community

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Action guide – key tasks and challenges

There are usually four sequential steps (phases) to the process mapping and modelling exercise for CRVS strengthening.

Step 1: Information gathering

A country team with the responsibility of overseeing the entire activity is assembled and all the existing information about the current CRVS systems processes (and goals) is compiled.

Step 2: Description of current processes

The current end-to-end flow of activities and stakeholders involved in a process are described using a process map. This results in the team developing an *As-Is* CRVS process map of the country's CRVS system.

Step 3: Analysis of current processes

The team then brings the *As-Is* CRVS process map to either a regional workshop (with several countries participating) or national workshop. An analysis of the *As-Is* CRVS process map is conducted with relevant country stakeholders and partners to identify flaws in the design and areas that could be streamlined to improve the performance of the whole system. Design flaws, inefficiencies and bottlenecks of CRVS processes are identified and documented, and potential solutions and new interventions discussed.

Step 4: Review and improvement

Together with the technical team, workshop attendees review the stakeholders involved, document the flow of activities and information, and ensure all key processes are addressed. The 'Ten CRVS Milestones' framework describes the order and flow of information through a CRVS system, and is a useful reference tool for countries to use to assess how well their system is functioning (**Figure 2**).[3]

An *As-Desired* CRVS process map is then designed to capture the proposed changes, which identify gaps between the current (*As-Is*) and future (*As-Desired*) CRVS systems situation.

Following Phases 1-4, the next step would relate to formal adoption and sponsorship from the CRVS governance body, such as the national CRVS committee, of the *As-Desired* CRVS process map(s).

3   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.

Figure 2 The 'Ten CRVS Milestones' framework[3]

Birth or death occurred

Civil Registration sub-system
Individual level inforation

1. NOTIFICATION
The capture and onward transmission of minimum essential information on the fact of birth or death by a designated agent or official of the CRVS system using a CRVS authorised notification form (paper or electronic) with that transmission of information being sufficient to support eventual registration and certification of the vital event

2. VALIDATION & VERIFICATION
The act by which a relevant authority validates that all necessary documentation to proof the vital event information so that the registration process can continue

3. REGISTRATION
The act of formally registering a vitual event at a civil registration office. At this point, details of the event are entered into the official civil register by the registrar.

6. STORAGE & ARCHIVING
The process whereby individual registration information is stored either digitally or in paper and incorporated into the permanent archives so that copies of certificates can be retrieved as required.

5. SHARING OF INFORMATION
Activities in which certain information items pertaining to the individual event is shared with other government systems (e.g. population register, electoral register, national ID)

4. CERTIFICATION
The issuance by the civil registrar of a legal document certifying a birth of death

Vital Statistics sub-system
Aggregated information

7. COMPILATION OF VITAL STATISTICS
The process of aggregating and summarising information on vital event by classifying and tabulating the data within categories or groups in order to produce vital statistics according to a predetermined tabulation program

8. QUALITY CONTROL OF VITAL STATISTICS
Standardised systematic set of controls and checks to assess the quality of vital statistics

9. GENERATION OF VITAL STATISTICS
Activities whereby national or regional vital statistics are produced (excluding production of reports for administrative purposes)

10. DISSEMINATION OF VITAL STATISTICS
Timely publication of an annual national vital statistics report on births and deaths disaggregated by age, sex and sub-national region, including numbers, completeness (coverage) rates, fertility and mortality levels and trends, and distribution of leading causes of death, in a public repository accessible to the different users

Summary

Country civil registration and vital statistics systems are complex, having evolved in unique ways in response to different political, legal, historical and administrative contexts. Investing in quality and reliable CRVS systems is important for strengthening national population health and development efforts. Investment in CRVS strengthening will further support country achievement of the SDG agenda and enhance country reporting on other aid effectiveness activities to donors.

Country engagement in process mapping of its CRVS systems is an excellent way to identify system challenges, as well as visually identify solutions for cost-effective and sustainable CRVS system-strengthening. Process mapping can also help stakeholders share a common view of the system, identify problems and work collaboratively to find solutions. The concept of detailed process mapping as applied to CRVS systems has been developed under the Bloomberg Philanthropies Data for Health Initiative (BD4H). It has already been applied in 16 low- to middle-income countries by BD4H.

The program partners on this initiative include: The University of Melbourne, Australia; CDC Foundation, USA; Vital Strategies, USA; Johns Hopkins Bloomberg School of Public Health, USA; World Health Organization, Switzerland.
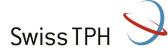
Civil Registration and Vital Statistics partners:

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

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