



Bloomberg
Philanthropies



DATA FOR
HEALTH INITIATIVE

STRENGTHENING CRVS SYSTEMS

The importance of
routinely measuring
registration completeness

CRVS Roadmaps for Action

October 2017



Introduction

A complete civil registration and vital statistics (CRVS) system is the best and most cost-effective source of routine, timely data on births, deaths and causes of death. However, globally, approximately one-third of births and more than one-half of deaths are not registered. In CRVS systems where not all births and deaths are registered, accurate measurement of registration completeness should be a core function of the CRVS system.

However, if the completeness of birth and death registration is known, sub-optimal data from incomplete CRVS systems can still have utility. Fertility and mortality statistics can be derived and in some cases adjusted so that policy-makers can make informed decisions for health policy and planning. Certainly, this will be important in the global quest to achieve the health-related targets under the Sendai Framework for Disaster Risk Reduction 2015–2030.² **Box 1** and **Box 2** summarise the importance of fertility and mortality statistics for countries and their partners.

What is completeness of registration?

The completeness of registration 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.

Completeness of birth registration (%)
= $\frac{\text{Number of registered births}}{\text{Actual number of births}} \times 100$

Completeness of death registration (%)
= $\frac{\text{Number of registered deaths}}{\text{Actual number of deaths}} \times 100$

Registration completeness can be used to monitor the performance of the CRVS system, including how completeness differs between geographic areas or demographic groups. This knowledge enables the targeting of CRVS technical and other interventions to improve registration completeness.

In particular, completeness of registration matters from a health equity perspective. If all births and deaths cannot be registered within a country, then policy-makers are basing their policy and planning decisions on data derived from a biased birth and death profile. Therefore, the health outcomes (and subsequent needs) of whole communities can remain invisible.¹ Indeed, it is often the poorest sectors within a population, and persons in rural and remote locations, who fall through the policy cracks in countries with incomplete CRVS systems. Yet, it is these same sectors that are hit the hardest by disease outbreak and natural catastrophe.

Box 1: What are some of the key summary fertility measures?

- Crude birth rate (the number of births per 1000 population)
- Age-specific fertility rates (the number of births per 1000 women in each age group)
- Teenage fertility rate (the number of births per 1000 women aged 15–19)
- Total fertility rate (total number of children born or likely to be born to a woman in her life time if she were subject to the prevailing rate of age-specific fertility in the population)

Box 2: What are some of the key summary mortality measures?

- Life expectancy (the average number of years a baby born today is expected to live)
- Maternal mortality rate (the annual number of mothers who die per 100 000 live births)
- Under-5 mortality rate (the number of deaths in children under age 5, per 1000 live births)
- Adult mortality rate (the probability of dying between ages 15 and 60, per 1000 population)
- Age-specific death rates

1 Setel PW, Macfarlane SB, Szreter S et al, on behalf of the Monitoring of Vital Events (MoVE) Writing Group (2007). A scandal of invisibility: making everyone count by counting everyone. *The Lancet* 370:1569-1577.

2 UN General Assembly. *Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction, Note by the Secretary-General*. A/71/644. 1 December 2016. Available online: documents-dds-ny.un.org/doc/UNDOC/GEN/N16/410/23/PDF/N1641023.pdf?OpenElement

Common roadblocks

In much of the world, CRVS systems are non-existent or provide incomplete data. This problem has come about due to several factors, including outdated and incomplete birth and death registration laws, lack of coordination among poorly-linked government ministries responsible for CRVS systems, and insufficient incentives for families to register births and deaths.

However, those whose vital events are not registered will be left behind when it comes to health and development efforts, completely counter to the 2030 Sustainable Development Goal Target 16.9, *By 2030, provide legal identity for all, including birth registration*.³ Indeed, measuring and monitoring most of the targets in the global health goal, Sustainable Development Goal 3: *Ensure healthy lives and promote wellbeing for all at all ages*, will depend on timely and reliable mortality data (Box 3).⁴

Box 3: Sustainable Development Goal 3 targets that require mortality data for their achievement



- 3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births
- 3.2 By 2030, end preventable deaths of newborns and children younger than 5 years, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births
- 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, and combat hepatitis, waterborne diseases and other communicable diseases
- 3.4 By 2030, reduce by one-third premature mortality from noncommunicable diseases through prevention and treatment, and promote mental health and wellbeing

Moving forward

To routinely assess registration completeness, it is vital that countries have the capacity to apply methods to estimate the completeness of registration. Human, technological and financial capacity will all be critical to improve performance of CRVS systems and to maximise the utility of the data they collect.

Measuring completeness is complex and will require countries to invest in upskilling personnel

Several techniques can be applied to estimate the completeness of birth and death registration. Existing methods to measure completeness of death registration can be broadly classified into four groups:

- Death distribution methods, also known as indirect methods
- Capture–recapture methods, also known as direct methods
- A new empirical method to estimate completeness using limited data
- Comparing registered deaths to total deaths estimated using a range of data sources and methods.

These scientific methods, however, are not straightforward and are continually being reformulated. This is complicated by the fact that the methods used by countries will depend on the characteristics of each country's population and CRVS system. Many countries will therefore need to invest in the training and upskilling of in-country CRVS technical personnel.

How countries can improve registration completeness

The legal and regulatory environment will play a key role in facilitating registration completeness: legislation helps to ensure the completeness of registration and to improve the accuracy of information held in the civil record. Making registration activities subject to the law, and establishing procedural rules and regulations, is essential for the efficient management, operation and maintenance of a CRVS system.

This should extend to the legal and regulatory environment surrounding public and private hospitals, legislation on death notification and certification for the disposal of bodies, and coronial (or similar) laws for certifying and registering non-natural deaths.

3 Dahan M & Gelb A (2015). The identity target in the post-2015 development agenda. The World Bank. Available online: worldbank.org/en/topic/ict/brief/the-identity-target-in-the-post-2015-development-agenda-connections-note-19

4 Sankoh O & Byass P (2017). New INDEPTH strategy for the SDGs using robust population data. *The Lancet Global Health* 5:e657-e648.

Other important ways countries can improve registration completeness include:

- Removing disincentives (such as registration fees)
- Making registration more accessible (for example, by adding more registration sites or sending registrars out into the community)
- Improving CRVS system functioning through better coordination among government agencies and other stakeholders.

The appointment of a national CRVS committee is another key way to enhance coordination, and centralise and monitor CRVS planning.

Summary

Regular monitoring of the completeness of registration, especially at the sub-national level, can inform strategies to improve the CRVS system and quality of vital statistics. Completeness removes bias in data used by policy-makers, and thus facilitates health equity and country achievement of the health and other Sustainable Development Goals.

Improving the capacity of CRVS staff to measure completeness is critical for its routine measurement. Additionally, a strong legal and regulatory environment is necessary to ensure all vital events are registered.

Importance of reliable fertility statistics	Importance of reliable mortality statistics
<ul style="list-style-type: none"> ■ Fertility statistics are the primary determinant of population size and age structure ■ They are a key component of population growth projections, which are used to <ul style="list-style-type: none"> - plan for infrastructure and services, such as adequate health and educational services - predict changes in the population age structure and the implications for fiscal projections – which are heavily influenced by the size of the working population compared with the retired population ■ Timely fertility statistics help countries monitor important indicators such as teenage fertility rates and the effectiveness of family planning programs 	<ul style="list-style-type: none"> ■ Reliable mortality statistics are vital for government health planning, program delivery and program monitoring ■ Summary mortality measures disaggregated by sex, socioeconomic characteristics and/or geography provide evidence of differentials in population health and thus can inform targeted interventions ■ Age and sex-specific death rates are also key components of population projections ■ Achieving many of the Sustainable Development Goals and global targets under the Sendai Framework for Disaster Risk Reduction 2015–2030 will depend on reliable mortality data

For more information, contact:

E: CRVS-info@unimelb.edu.au

W: mspgh.unimelb.edu.au/dataforhealth

CRICOS Provider Code: 00116K

Version 1117-02