

Civil Registration and Vital Statistics (CRVS), and the Sustainable Development Goals (SDGs)

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Introduction

This paper presents the case that Civil Registration and Vital Statistics (CRVS) is central to the Sustainable Development Goals (SDGs) in two ways. First, vital statistics based on civil registration provide data and information required for SDG monitoring. Second, civil registration itself provides direct and indirect benefits that contribute to achieving the goals themselves by empowering individuals to access rights, entitlements, and social protections through the establishment of legal identity. CRVS is either a direct or indirect contributor for 70% of SDGs and up to 40% of SDG targets. This paper draws mainly on the work of the Bloomberg Philanthropies Data for Health Initiative (Bloomberg Philanthropies Data for Health Initiative, nd),¹ the World Bank (The World Bank Group, 2017), and the World Health Organization (World Health Organization, 2017) in exploring the CRVS/SDG relationship.

The Sustainable Development Goals

Following on from the Millennium Development Goals (MDGs) and their targets for 2015, the SDGs offer a vision of what the global community agrees the world should look like in 2030 in terms of poverty eradication and sustainable development.² The goals are underpinned by the core principle of 'leaving no one behind.' Thus, there is a focus on improving conditions for the poorest and most vulnerable among us. The SDGs are organized into 17 Goals and 169 Targets that are measured by 232 indicators. What follows is a brief consideration of the intersection between CRVS and the SDGs and a few detailed examples of what this intersection looks like in relation to the SDGs.

CRVS in the context of the sustainable development

It is well known that a properly-functioning CRVS system provides continuous, permanent, compulsory, confidential, and universal recording of vital events. This, in turn, yields vital statistics for national and international reporting on progress; and national and sub-national use in priority-setting, and policy development (see <https://unstats.un.org/unsd/demographic/sources/civilreg/>).

Civil registration and issuance of birth certificates (often in conjunction with some form of national identity number) and death certificates provide individuals and survivors access to rights and entitlements attendant on possessing them. Well-functioning CRVS has, for example, been shown to be associated with decreased maternal mortality (Phillips, et al., 2015), suggesting that the pathway exists from civil registration to desirable population level outcomes. A proxy measure for well-functioning CRVS systems (the 'vital statistics performance index,' or 'VSPI') has been associated with increases in health adjusted life expectancy (HALE), reduced child mortality risk, and lower maternal mortality ratios, after controlling for confounders such as population wealth, level of urbanization, health system

¹ The Bloomberg Philanthropies Data for Health Initiative is a four-year, \$100m investment that aims to support governments in 20 low- and middle-income countries around the world in strengthening their health data and data use, including improving CRVS systems. Much of the Data for Health CRVS-related support focuses partnering with governments to improve the registration and certification of deaths and causes of death and the use of innovations to bring CRVS systems in line with international best practice recommendations. In addition to direct country support, the Initiative has produced numerous technical publications on many aspects of CRVS housed at the CRVS Knowledge Gateway (<https://crvsgateway.info>). Data for Health also works to support in-country data use and impact, ensuring that crucial public health data, including from CRVS, is used in the program prioritization and policy decision-making process. The operating principles of the Initiative are: country leadership and ownership; capacity building; and a commitment to sustainability. Data for Health is co-funded by Bloomberg Philanthropies and the Australian Department of Foreign Affairs and Trade.

² See <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

coverage, and contraceptive prevalence (Phillips, et al. 2015). Weaker, but consistent positive associations have been demonstrated with other important development indicators.

The benefits of individual-level records extend to governments in addition to individual citizens. For example, information contained in population registers (ideally based largely on registration records) can be used to develop, continuously update and manage voter registration. It also permits entities such as national pension schemes to know when individuals die and, thus to stop payments on pensions and, where relevant, pay benefits to any surviving spouses or family members.

Vital statistics from well-functioning CRVS systems (particularly in countries that also have population registers) provide an overall picture of the population and population health status, essential for sound policy development in health, education, and other sectors. Data on the population by age, sex, geography, and causes of death at the national and sub-national levels are used for both rationale resource planning and monitoring the overall progress of populations toward national and international development objectives, including many SDGs and SDG targets. Vital statistics provide both numerators and denominators in the calculation of many indicators used to do so.

Measurement versus Estimation

It has been pointed out that alternative sources exist for many of the statistics that come from CVRS (AbouZahr, Boerma, & Hogan, 2017). These include sources such as decennial censuses for population denominators (which need to be adjusted to calculate inter-censal values), fertility and mortality; household surveys for mortality, fertility and service utilization; or mathematical modeling efforts like the Global Burden of Disease project, which releases annual reports on SGD indicators.³ The technical risks and drawbacks of direct measurement versus mathematical models in providing health statistics has been discussed in detail elsewhere (AbouZahr, Boerma, & Hogan, 2017; Murray, 2007) and will not be discussed at length here. The central point is that there are advantages for using properly corrected vital statistics based on the direct measurement that CRVS provides, and CRVS is the best – and sometimes the only – option for obtaining the required data.

In the context of sustainable development, there are additional advantages to using directly measured sources such as CRVS systems. Most notably, they are country-owned and generated, and build national capacity. Importantly, they are usually the only population-based source of sub-national estimates for overall and cause-specific mortality. Experience suggests that there also tends to be more trust and buy-in by national stakeholders when empirically measured country-owned statistics are available and used (see e.g.: AbouZahr, Boerma, & Hogan, 2017; Aguilera, Espinosa-Marty, Castillo-Laborde, & Gonzalez, 2017)(Aguilera, Espinosa-Marty, Castillo-Laborde, & Gonzalez, 2017). In the case of CRVS, there are other tradeoffs to using alternative sources for key measures that should come from national vital statistics. For example, resources that might have otherwise gone into CRVS system improvements and strengthening could be diverted to costly surveys, surveillance activities that are not connected to civil registration, or mathematical modelling. None of these provide the individual-level benefits that are so important to overall national well-being inherent in civil registration, and none provide robust direct measures of causes of death – so which is critical to the SDGs and beyond.

³ <http://www.healthdata.org/gbd>

SDGs and CRVS: What's the connection?

As noted above, civil registration and vital statistics each contributes to the SDGs. Registration provides individuals with rights, entitlements, and protections that accompany the possession of birth and death certificates. Vital statistics, corrected for undercounting and sources of error or bias, are the ideal source for numerator data such as deaths by cause, and for current population denominators for the calculation of many of the SDG's 232 indicators. Additionally, civil registration relates directly to the achievement of SDG targets 16.9 "By 2030, provide legal identity for all, including birth registration" and 17.19 "By 2030, build on existing initiatives to develop measurements of progress on sustainable development ... and support statistical capacity-building in developing countries."⁴

The World Bank (WB) identified 14 goals, 68 targets, and 68 indicators where vital statistics can or should be used for SDG monitoring (The World Bank Group, 2017), while the Data for Health Initiative has (D4H) noted 11 goals, 47 targets, and 66 indicators to which CRVS contributes (Bloomberg Philanthropies Data for Health Initiative, nd). WHO, meanwhile, identified 33 indicators for nine health-related SDGs (World Health Organization, 2017). These summary counts indicate the centrality of CRVS to the SDGs. In effect, CRVS relates in one way or another for to between 65% and 80% of the goals; between 28% and 40% of the targets; and between 28% and 29% of the SDG indicators (Figure 1).⁵

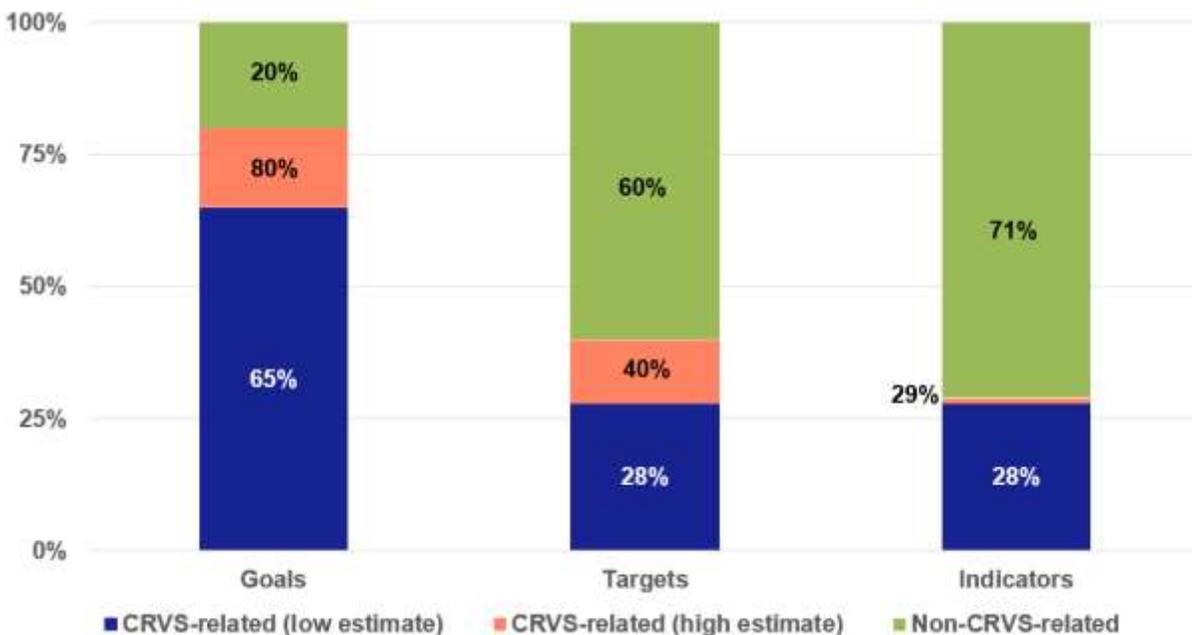


Figure 1. CRVS-related Goals, Targets, and Indicators

⁴ <https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals>

⁵ The criteria and reasoning behind these discrepant estimates will not be considered here, however, the WB and D4H publications refer to slightly different numbering of indicators, indicating that different master indicator lists may have been used by each of these analyses.

Examples of the CRVS contribution to a few selected SDGs (1, 2, 5, 16, and 17) and associated targets and indicators are presented below, followed by a closer consideration of SDG 3: Ensure healthy lives.⁶

How CRVS can contribute to the Goals

According to the WB, CRVS should be the basis of population denominators for 7 of the indicators for SDG 1: “End poverty in all its forms everywhere,” while D4H estimates that 10 of the goal SDG 1 indicators should be derived from vital statistics. These include indicators 1.1.1 and 1.2.1: proportion of the population below the international and national poverty lines (by age, sex, employment status, and geography) among others. Civil registration contributes to the goal itself through the enhanced access to social protection systems and services, legal rights and entitlements that it affords. Death registration and certification permits access to survivor benefits, life insurance benefits, legal rights and entitlements. These benefits contribute to six of the goal’s SDG’s targets (1.1- 1.5 and target 1B) (Bloomberg Philanthropies Data for Health Initiative, nd).

For SDG 2: “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” disaggregated population denominators, including of the population under age five, are pertinent for four indicators according to both the WB and D4H (2.1.1-2, and 2.2.1-2). Deaths due to nutrition-related causes are especially relevant here, stressing the need for including high quality cause of death data drawn from CRVS systems. Additionally, CRVS contributes indirectly to accomplishing this goal through provision of birth certificates, which provide access to social protection services as well, and death certificates that can facilitate family members to protect their rights and entitlements as survivors.

CRVS also contributes to the monitoring and achievement of Goal 5: “Achieve gender equity and empower all women and girls.” For example, tracking the proportion of women by age at marriage derived from CVRS at the aggregate level contributes to indicator measurement, giving impetus for enforcement of laws barring child marriage (where appropriate). Likewise, birth certificates can enable enforcement of such laws at the individual level and the protection of individual girls from being coerced into under-age unions.

CRVS is also important to the achievement of SDGs 16: “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels” and 17: “Strengthen the means of implementation and revitalize the global partnership for sustainable development,” which are both more societal-level than individual-level goals. In the case of SDG16, birth registration for all, including the provision of legal identity, is itself a target (16.9). It can further be used to provide numerators of births and deaths by intentional harm and conflict, and population denominators for three of this goal’s indicators (16.9.1-2, and 16.9.1). For SDG 17, the resources allocated to CVRS systems and system improvements should be included in the measurement of indicator 17.19.1 measuring support for statistical capacity building in low- and middle-

⁶ According to D4H CRVS is also important for the monitoring and achievement of: Goal 4: Inclusive and equitable education and lifelong learning; Goal 8: Inclusive and sustainable economic growth; Goal 9: Industry, innovation and infrastructure; Goal 10: Reduce inequalities within and among countries; Goal 11: Inclusive and sustainable cities; and Goal 13: Climate action. See both World Bank (2017) and Data for Health Initiative (nd) for more details and discussion of the CRVD/SDG relationship.

income countries, and the numbers of births and deaths registered must be provided for the estimation of completeness of birth and death registration for indicator 17.19.2.

Goal 3: Ensure healthy lives and promote well-being for all at all ages

CRVS is perhaps most instrumental in providing for the monitoring and achievement of Goal 3 (Table 1). It should provide numerators of deaths by cause and age and denominators of live births and disaggregated population data for between 21 and 24 indicators as determined by D4H, and the WB respectively. In this case, vital statistics on mortality rates and ratios for child and maternal mortality, along with numerous summary statistics on causes of death play a dual function: They are both the source of SDG indicator data and have tremendous utility in separate country monitoring and decision-making in the setting of health program priorities and policies that contribute to achieving healthy lives, and monitoring these conditions over time. As is the case for many other goals, birth and death certificates can both facilitate and protect access to health services for individuals and surviving family members.

Table 1. SGD 3 indicators for which CRVS data are most crucial*

Indicator	Numerator	Denominator
3.1.1 Maternal mortality ratio	❖	●
3.1.2 Proportion of births attended by skilled health personnel		●
3.2.1 Under-five mortality rate	✕	●
3.2.2 Neonatal mortality rate	✕	●
3.3.1 Number of new HIV infections per 1000 uninfected population, by sex, age and key populations		●
3.3.2 Tuberculosis (TB) incidence per 1000 population		●
3.3.3 Malaria incidence per 1000 population		●
3.3.4 Hepatitis B incidence per 100 000 population		●
3.3.5 Number of people requiring interventions against neglected tropical diseases		●
3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	◇	●
3.4.2 Suicide mortality rate	◇	●
3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders		●
3.5.2 Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in litres of pure alcohol		●
3.6.1 Death rate due to road traffic injuries	◇	●
3.7.1 Proportion of women at reproductive age (aged 15–49 years) who have their need for family planning satisfied with modern methods		●
3.7.2 Adolescent birth rate (aged 10–14 years; aged 15–19) per 1000 women in that age group	†	●
3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, noncommunicable diseases and service capacity and access, among the general and the most disadvantaged population)		●

Table 1. SGD 3 indicators for which CRVS data are most crucial*

Indicator	Numerator	Denominator
3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income		●
3.9.1 Mortality rate attributed to household and ambient air pollution	◆	●
3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)	◆	●
3.9.3 Mortality rate attributed to unintentional poisoning	◆	●

* sources: (Bloomberg Philanthropies Data for Health Initiative, nd; The World Bank Group, 2017; World Health Organization, 2017)

Key:

- ◆ deaths by sex and cause
- total and disaggregated population figures
- ⌘ deaths by age
- ◆ deaths by cause
- † women ages 10 – 19 at time of birth

Conclusions

To conclude, through both its registration and statistical functions there are at least two ways in which CRVS can contribute to the SDGs. CRVS is either a direct or indirect contributor for 70% of SDGs and up to 40% of SDG Targets; it is essential for SDG monitoring, contributing numerators and denominators nearly 30% of all indicators. Additionally, achieving universal birth and 80% death registration is itself either an explicit SDG target (16.9) or pivotal in attaining a target (17.19).

After decades of languishing among the lowest of development priorities, the improvement of CRVS systems in low- and middle-income countries is at last beginning to attract the attention it deserves from national governments and development partners ranging from multi-lateral institutions to private philanthropies. The key insight from an examination of how CRVS relates to the SDGs emphasizes how civil registration systems produce more than the inputs to vital statistics as public goods; they are also capable of contributing to the production of the public good in their own right (Phillips, et al., 2015).

While calls have been made for at least a decade to address the scandal of invisibility surrounding those who had gone uncounted and unseen (Setel, et al., 2007) and to chart the way forward (AbouZahr, et al., 2007), only recently have practical tools, technical resources, and pragmatic guidelines and resources started to become widely available and accessible online.⁷

Over the coming years, rapid investment, scaled and sustainable application of proven approaches; improvements in technology and digitization of systems; and determined demand creation for civil registration will all determine how well CRVS ultimately performs in relation to the SDGs.

⁷ See e.g. the World Bank's online CRVS course at <https://olc.worldbank.org/content/civil-registration-and-vital-statistics-systems-basic-level-self-paced-format>; the Bloomberg Philanthropies Data for Health Initiative's online CVRS Learning Center at <https://crvsgateway.info/learningcentre>; and the World Health Organization's forthcoming technical package of essential interventions and tools to strengthen country monitoring of the SDGs.

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