

Global Civil Registration and Vital Statistics

Scaling up Investment Plan 2015–2024



May 28, 2014

Global Civil Registration and Vital Statistics Scaling up Investment Plan 2015–2024

May 28, 2014

World Bank WHO



Acknowledgements

This Global Scaling Up Investment Plan was prepared by the World Bank Group and the World Health Organization with input from several agencies and countries. The UN Economic Commission for Africa (UNECA), WHO, and the World Bank co-hosted a global consultative meeting on Civil Registration And Vital Statistics (CRVS) in Addis Ababa on April 28–29, 2014 to discuss and obtain input on a draft investment plan. The following agencies, together with experts in the field of CRVS, contributed to the investment plan through participation in the consultation¹ or by providing separate contributions:

The Canadian Department of Foreign Affairs, Trade and Development is gratefully acknowledged for the financial support it provided in developing the Global CRVS Scaling Up Investment Plan 2015–2024.

Overall guidance was provided by Timothy Evans (Senior Director, Health, Nutrition, and Population), Nicole Klingen (Sector Manager, Health, Nutrition, and Population) and Haishan Fu (Director, DECDG). The

¹ A list of participants is provided in Annex 9.

African Development Bank (AfDB)	Partnerships in Statistics for Development in the 21st Century (PARIS21)
African Union Commission (AUC)	Plan International
Asian Development Bank (ADB)	Secretariat of the Pacific Community
Bill and Melinda Gates Foundation (BMGF)	Statistics Norway
Cambridge Economic Policy Associates (CEPA)	United States Agency for International Development (USAID)
Canadian Department of Foreign Affairs, Trade and Development (DFATD)	United Nations Economic Commission for Africa (UNECA)
Centers For Disease Control and Prevention (CDC)	United Nations Economic and Social Commission for Asia and The Pacific (ESCAP)
Center for Global Development (CGD)	United Nations Economic and Social Commission For Western Asia (ESCWA)
Inter-American Development Bank (IDB)	United Nations Every Woman and Every Child
Government Representatives and Experts from:	United Nations High Commissioner for Refugees (UNHCR)
• Bangladesh	United Nations Children's Fund (UNICEF)
• Burkina Faso	United Nations Statistics Division (UNSD)
• Ethiopia	United Nations Population Fund (UNFPA)
• Mozambique	World Health Organization (WHO)
• Philippines	World Bank
Open Data Watch	

World Bank's CRVS Working Group was led by Samuel Mills (Senior Health Specialist, HDNHE) and composed of Amparo Gordillo-Tobar (Senior Economist, LCSHH), Ana Milena Aguilar Rivera (Health Economist, HDNHE), Bob Fryatt (Consultant, HDNHE), David Satola (Lead Counsel, ICOIO), François Marius Lefebvre (Senior Financial Officer, CFPMI), James Neumann (Senior Counsel, LEGPS), Mariana Dahan (Consultant, TWICT), Miyuki Parris (Operations Analyst, HDNHE), Robert Palacios (Team Leader, HDNSP), Samia Melhem (Lead Policy Specialist, Transform Practice, TWICT), and Victoriano Arias (Program Assistant, HDNHE). Several World Bank management and staff provided invaluable inputs. The WHO team comprised Ties Boerma (Director, Department of Health Statistics and Information Systems) and Anneke Schmider (Technical Officer CRVS, Health Statistics and Information Systems).

The findings, interpretations, and conclusions expressed in this Global CRVS Scaling Up Investment Plan do not necessarily reflect the views of the Executive Directors of the World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries. For more information contact, Samuel Mills, email: smills@worldbank.org. The full Global CRVS Scaling Up Plan is available on the following website: <http://www.worldbank.org/en/topic/health/publication/global-civil-registration-vital-statistics-scaling-up-investment>

Table of Contents

Acknowledgements.....	iii
Acronyms.....	ix
Overview.....	xi
Section 1: The Strategic Case.....	1
What is Civil Registration and Vital Statistics (CRVS)?.....	1
Why does CRVS matter?	2
Identification	2
Health information and vital statistics	2
Birth registration	2
Registration of death and cause of death	3
Why CRVS will matter even more in the future.....	3
The “Grand Convergence” in health	3
Gender dimensions of civil registration and identification	4
Civil registration and data in times of crisis	4
Harnessing new technology	4
Section 2: The Poor Performance of National CRVS Systems	7
Current state of CRVS	7
Birth registration	7
Death and cause of death	7
Why are CRVS systems in such poor shape?.....	8
Demand-side: lack of awareness and barriers to registration	8
Supply-side problems and the CRVS “ orphan”	8
Lack of integration and coordination	9
What progress has been made to strengthen CRVS?	10
Success stories.....	10
Public-private collaborations.....	10
Statistical capacity.....	11
Privacy and personal information.....	11

Section 3: The Opportunity to Transform CRVS.....	13
Start with women and children	13
Registration through maternal, newborn, and child health (MNCH) services	13
Harness the data revolution.....	14
Build on regional leadership and global coordination	15
African Program for Accelerated Improvement of CRVS (APAI-CRVS).....	15
Regional initiative to improve CRVS in Asia and the Pacific.....	15
Eastern Mediterranean Regional Strategy for the improvement of civil registration and vital statistics systems	15
Pan-American Health Organization Regional Plan of Action for Strengthening Vital and Health Statistics	15
Global coordination.....	16
Key enabling factors for effective CRVS systems.....	16
CRVS as a public good	16
Unique identifiers	16
Information Communication Technology	17
Enterprise architecture design	17
ICT governance.....	18
Mobile technologies.....	18
Incentives mechanisms.....	18
Synergies with identification and e-Governance initiatives	18
Section 4: The Scaling Up Plan	19
What will it take to deliver?	19
National CRVS strengthening	19
International support for CRVS.....	20
Sharing knowledge and building the evidence base	21
Financing needs	22
Costing.....	22
Resource mobilization for CRVS	23
Financing mechanisms	24
Option 1: Expand scope of existing funding mechanisms	24
Option 2: Multi-donor trust fund to leverage IDA/IBRD funding for lending operations	24
Option 3: Global Civil Registration and Vital Statistics Program.....	25
What will be delivered and when.....	25
Goal and targets.....	25
Indicators	25
Implementation.....	26
Monitoring and evaluation	27
Risk and risk mitigation.....	27

Annexes

Annex 1. United Nations Definition of Vital Events.....	31
Annex 2. Status of CRVS Maternal Death Estimates, Birth, Deaths, Quality of Cause-of-Death Reporting	33
Annex 3. Country Case Studies.....	37
Annex 4. National Statistical Capacity using World Bank Composite Indicator	49
Annex 5. Legal and Regulatory Issues for CRVS.....	51
Annex 6. Status of CRVS in 75 Countries Prioritized by the Commission on Information and Accountability	55
Annex 7. Global CRVS Group Terms of Reference.....	59
Annex 8. Costing of CRVS Scaling Up Plan.....	61
Annex 9. Participants at Global CRVS Consultation in Addis Ababa April 28–29, 2014.....	67
References	71

List of Figures

Figure 1. The CRVS systems.....	1
Figure 2. Estimated and reported deaths by income group, 2009	8
Figure 3. Brazil – Trends in birth registration	10
Figure 4. South Africa – Trends in birth registration.....	10
Figure 5. Birth registration – Compared to antenatal care and DPT1 immunization	13
Figure 6. CRVS enterprise architecture design.....	17
Figure 7. Total CRVS development cost per five-year country plan.....	22
Figure 8. Per capita and per vital event CRVS development costs	22
Figure 9. Country readiness for implementation.....	27

List of Tables

Table 1. Estimated financing gap for 2015–2024 scaling up investment plan	23
Table 2. Estimation of global CRVS development and recurrent costs for 73 COIA priority countries 2015–2024a	64
Table 3. Main assumptions made to derive per-capita cost per activity in estimating global CRVS development and recurrent costs for 73 COIA priority countries 2015–2024.....	65
Table 4. Costs of developing CRVS and estimated investment gap CRVS (73 countries) 2015–2024	66

List of Boxes

Box 1 Country investment plans: Quotes from country stakeholders	37
Box 2 Lessons learned from establishing CRVS in Central and South America	38
Box 3 E-Governance and birth registration in Cape Verde.....	39

Box 4 Traditional leaders and birth registration in Senegal.....	40
Box 5 Online and offline mobile birth registration in Uganda.....	41
Box 6 Modernizing the civil register in Albania	42
Box 7 Community health workers and birth registration in Bangladesh	43
Box 8 Automated Verbal Autopsies in the community in South Africa, Malawi, India, and Nepal	44
Box 9 Improving hospital mortality data in Mozambique.....	45
Box 10 Civil register links with maternal and child events in Philippines	46
Box 11 Strengthening vital statistics through inter-institutional efforts in Nicaragua	47

Acronyms

ADB	Asian Development Bank	IEC	Information Education Communication
AfDB	African Development Bank	iERG	Independent Expert Review Group
APAI-CRVS	Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics	LGU	Local Government Units
BCRS	Barangay Civil Registration System	MDG	Millennium Development Goal
COIA	Commission on Information and Accountability for Maternal and Child Health	MNCH	Maternal Newborn Child Health
		MMEIG	Maternal Mortality Estimation Inter-agency Group
CPR	Civil Population Registry	MDSR	Maternal Death Surveillance and Response
CRVS	Civil Registration and Vital Statistics	NIS	National Identity Systems
EMRO	Eastern Mediterranean Regional Office of the World Health Organization	NSO	National Statistical Office
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific	OAS	Organization of American States
		PARIS21	Partnerships in Statistics for Development in the 21st Century
GCRVSP	Global Civil Registration and Vital Statistics Program	PIN	Personal Identification Number
HMIS	Health Management Information Systems	TFSCB	Trust Fund for Statistical Capacity Building
HMN	Health Metrics Network	UNECA	United Nations Economic Commission for Africa
ICD	International Classification of Diseases	UNFPA	United Nations Population Fund
ICT	Information and Communication Technology	UNICEF	United Nations Children's Fund
		VA	Verbal Autopsy
		WHO	World Health Organization
		WOMB	Watching Over Mothers and Babies



Overview

What is Civil Registration and Vital Statistics?

Civil registration is defined by the United Nations as the *“Universal, continuous, permanent and compulsory recording of vital events provided through decree or regulation in accordance with the legal requirements of each country.”* (UNSD). It is the act of recording and documenting of vital events in a person’s life (including birth, marriage, divorce, adoption, and death) and is a fundamental function of governments.

Why does CRVS matter?

The civil registry provides individuals with the documentary evidence required to secure recognition of their legal identity, their family relationships, their nationality and their ensuing rights, such as to social protection and inheritance. It can help facilitate access to essential services, such as health, education, and social welfare and can contribute to activities such as gaining formal employment, exercising electoral rights, transferring property, and opening bank accounts. The lack of civil registration during crisis or natural disasters can lead to statelessness. The arrival of new technology in resource-constrained environments has created opportunities for developing more efficient information systems.

Unlike other sources of vital statistics, such as censuses and household surveys, the data from Civil Registration and Vital Statistics (CRVS) systems permit the production of statistics on population dynamics, health, and inequities in service delivery on a continuous basis for

the country as a whole and for local administrative subdivisions. This provides more accurate information and the ‘denominator’ for assessing progress with plans across sectors for improving economic growth and reducing poverty. Accurate vital statistics and the ability to monitor and respond to causes of death and disability underpin many global targets, including new commitments to universal health coverage and tackling the global epidemic of non-communicable diseases.

Birth registration helps with the identification of population health needs. Birth registration should take place “immediately” following birth, the standard measure being within 30 days of birth. The move to high coverage health services for mothers and children makes universal birth registration at or shortly after birth a realistic goal. It is also central to global efforts aimed at improving early childhood development.

Death registration provides legal rights to the family, for example, in conferring property or other individual or personal transfer rights to remaining family members. Cause of death registration provides critical information for health and development planning to improve the survival of children and adults. A current example of weak CRVS systems is the lack of credible and coherent maternal mortality statistics in areas where mortality is highest.

Marriage and divorce registration is a largely unrecognized part of well-developed CRVS systems. Having good marriage and divorce registration are frequently required to obtain documents that can contribute to women’s ability to inherit property and register their children in some countries, among other benefits. Registering girls at birth

and recording their marriages provides a legal backing against early and forced marriage.

Current state of CRVS

In the past 10 years, there has been an overall increase in global birth registration rates of children under five from 58 percent to 65 percent. However, more than 100 developing countries still do not have functioning systems that can support efficient registration of births and other life events like marriages and death. Around the world, almost 230 million children under the age of five are not registered. Sub-Saharan Africa is home to 85 million of these children, while 135 million live in Asia and the Pacific. Monitoring of data on birth registration rates for children under five is no longer considered useful and indicators are now required that help protect the rights of newborn children. This is an urgent area for consensus building, starting with routine monitoring of birth registration rates within a year of birth. Progress with death registration has been much slower globally. In countries in most need of CRVS, up to 80 percent of deaths that occur outside of health facilities and two-thirds of all deaths globally are not counted.

Why are CRVS systems in such poor state?

Many people are not aware of the importance of birth and death registration for them and their families and the implications that this has for access to core government services. In some countries, there are discriminatory laws, practices, and attitudes that prevent birth registration. Simplifying the process and providing a vital event registration service within the existing structures with which citizens interact can help to dramatically increase registration coverage. Lack of a political priority has resulted in poorly managed, underfunded CRVS systems, deficient in full-time professional staff. Getting the civil registry, health and vital statistics systems to interact efficiently is a technical challenge requiring standards, protocols, data exchange, and institutional agreements across many government departments. Modern technology has only progressed piecemeal in many countries and there has been a proliferation of independent databases capturing different information about citizen records.

What progress has been made to strengthen CRVS systems?

Some countries have seen remarkable improvements in CRVS systems in recent years, for example Brazil and South Africa. Good progress has been made in Latin America and regional leadership is now showing progress in Asia and Africa. The private sector has had a major role to play in providing new solutions to improving access to and use of the CRVS system and for providing services. There has been significant progress in the number of countries that now have National Strategies for the Development of Statistics. There has also been considerable learning on the need for secure and confidential sharing of personal information across government agencies.

The opportunity to transform CRVS

Start with women and children

There is now an opportunity to overcome the many deficiencies in the CRVS system through global attention to improving the health of women and children. Scaled-up coverage of maternal, newborn, and child health (MNCH) services, combined with the introduction of new technology, is providing many opportunities for strengthening CRVS, as illustrated by many pilot programs globally. Maternal and child health services can be used as entry points to boost birth registration, such as by creating awareness among pregnant women during antenatal care, immediate birth registration of all institutional births, and ensuring all children who are vaccinated at six weeks for DTP1 are registered. National commitments to developing Early Childhood Development services and registration at centers in or near schools will be used for “mopping up” those not registered at birth.

Harness the data revolution

The full value of data from civil registries comes when they are properly integrated within government systems – for example with the statistical institutions, population registers, national ID systems, and voter registration systems.

There are now opportunities to do this through 21st century CRVS systems that draw on the wide availability of information and communication technology (ICT) and innovations linking health records with civil registries. New internationally applicable CRVS standards are required for the use of unique identifiers, interoperability of information systems, and the various tools and devices used to collect and transmit data.

Build on regional leadership and global coordination

Recent years have seen the start of important regional initiatives aimed at strengthening CRVS systems in countries. These provide essential advocacy and accountability for change and create mechanisms to exchange and share technical knowledge and expertise. A global coordination group has recently been established.

Key enabling factors for effective CRVS systems

CRVS is more than the sum of its parts, and its development requires a holistic approach, taking into consideration all events (including births, marriages, deaths, cause of death, and issuing IDs), their supporting information systems, and associated legislation. The goal should be to have one master CRVS system from which data can be accessed for different purposes while ensuring confidentiality and security.

Information Communication Technology

Well-functioning ICT infrastructure, including a reliable power source, internet, and cell phone coverage, provides the enabling environment for developing modern CRVS systems, which in turn provides the platform for interoperable CRVS information systems and databases. While ICT is not a silver bullet, it can provide a means to collect, store and retrieve data in a fast, cost-efficient and user friendly way. Recent advances have been made in areas such as enterprise architecture design and mobile technologies and many synergies can be found with ongoing efforts such as for strengthening national identification systems (NIS) and voter registration.

The Scaling Up Plan

What it will take to deliver

The global plan has three key components:

- *National CRVS strengthening*: removing the barriers to birth registration, improving reporting of deaths and determining cause of death, strengthening CRVS institutions and ICT systems, strengthening national ID mechanisms, and improving the response to deaths and vital statistics.
- *International support for CRVS*: This will focus on strengthening international standards for CRVS, and preparing and sharing guidance based on country experience.
- *Sharing knowledge and building the evidence base*: Analysis of barriers and programs of implementation research, together with rigorous impact evaluation, will share lessons on what works in different situations.

Financing needs

The costs in a number of recent country CRVS investment plans have been employed to estimate the additional financial resources needed to strengthen CRVS in the priority countries involved in the United Nations Commission on Information and Accountability on Women's and Children's Health.

The total cost of scaling up and sustaining CRVS systems in the 73 countries is in the order of US\$3.82 billion. This excludes India and China, as their size requires separate analysis. After excluding estimated domestic sources of funds, there is an estimated US\$1.99 billion financing gap for the global scale-up plan over a ten-year period, or an average of **US\$199 million financing gap per year** for 73 countries.

Financing mechanisms

The key to success for establishing CRVS systems is strong national leadership overseeing a country-led plan. The criteria for assessing the readiness of countries for international support will include completed comprehensive assessments; multisectoral costed CRVS plans including an indication of how much resources will be committed

by government (budgetary allocation), existing support from development partners, and private sector, and financing gap. Financial sustainability will also have to be clearly articulated in national plans. A number of different international financing and governance models are under consideration.

What will be delivered and when

Assuming the required domestic and international resources can be mobilized the following goals and targets will guide the implementation of the global CRVS scaling-up plan.

Goal: Universal civil registration of births, deaths and other vital events, including reporting cause of death, and access to legal proof of registration for all individuals by 2030

Implementation

As of May 2014, of the 75 priority COIA countries, 25 have national CRVS plans based on comprehensive assessments of their CRVS (including three as part of the regional PAHO CRVS framework). Over a ten year period these efforts will grow so that all CRVS systems have sufficient investments to ensure universal coverage is reached by 2030.

Targets	2020	2025	2030
Births in given year are registered	80%	90%	100%
Children whose births are registered have been issued certificates	70%	85%	90%
Deaths in given year reported, registered, and certified with key characteristics	60%	70%	80%
Maternal and newborn deaths reported, registered, and investigated	80%	90%	100%
Deaths in children under 5 reported, disaggregated by age and sex	60%	70%	80%
Cause of deaths in hospitals reliably determined and officially certified	80%	90%	100%
Countries have community assessments of probable cause of death determined by verbal autopsies using international standards	50%	65%	80%



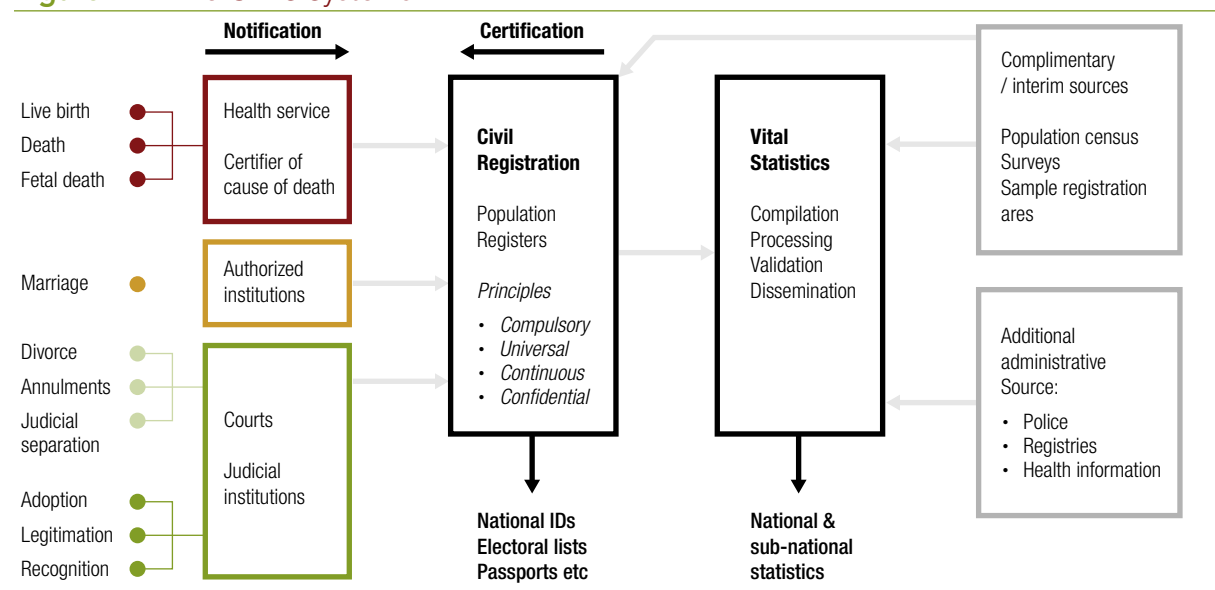
The Strategic Case

What is Civil Registration and Vital Statistics (CRVS)?

Civil registration is defined by the United Nations as the “*Universal, continuous, permanent and compulsory recording of vital events provided through decree or regulation in accordance with the legal requirements of each country*” (UNSD). It is the act of recording and documenting of vital events in a person’s life (including birth, marriage, divorce, adoption, and death) and is a fundamental function of governments. The civil registry stores records of all vital events. The precise definition of vital events can vary across countries although the UN pro-

vides a standardized format (**Annex 1**) and has recently reviewed its guidance on this subject (UN 2013). Various institutions are responsible for ensuring these vital events are registered with the civil registry, and ensuring that individuals receive the certificates confirming that the vital event has occurred (**Figure 1**). The civil registry has two key objectives. The first is to be the preferred source of data for the production of national and subnational analysis and reports on vital statistics. The second is to provide legal certification for individuals of a vital event, which in turn supports the process of establishing legal identity, the production of national identification documents, and the integrity of population databases and electoral rolls.

Figure 1 • The CRVS Systems



Civil registration and vital statistics (CRVS) systems are composed of different parts: a system for the *registration of vital events*; a system for the *production of certified copies* of these documents; a system of *providing information that allows issuing of passports and national identification documents*, and a system for the *production and dissemination of vital statistics* (WHO 2012). The various systems can be governed by different legal frameworks but should have core strategies aligned and inter-linked.

Why does CRVS matter?

CRVS systems provides a critical platform to a significant range of country planning and development needs.

Identification

Tracing the imprint of a person's existence represents the first step in securing their right to life, freedom, and protection (Horton 2007, 1526). The civil registry provides individuals with the documentary evidence required to secure recognition of their legal identity, their family relationships, their nationality and their ensuing rights, such as social protection and inheritance. This starts with the legal identity that a birth certificate provides, and is followed, with the addition of biographic data, by issuance of identity documentation as and when necessary. Lack of identity documents or legal identity can be connected to poverty and vulnerability, as well as to the absence of transparent and efficient processes in public administration (Boekle and Harbitz 2009). Legal identity is proof that a state recognizes and respects the lives of those it has a responsibility to defend and develop. It enables access to essential services, such as health, education, and social welfare and can contribute to activities such as seeking employment, exercising electoral rights, transferring property, and opening bank accounts. It is used in the private sector, for example to access credit, and in the public sector to provide identification cards, passports, and driver's licenses. Many millions of people in low- and middle-income countries are being denied basic services and protection of their rights due to deficient CRVS and national identification systems (NIS). This includes universal health coverage, education and social protection schemes, humanitarian responses to emergencies and conflicts, trade, and security.

Health information and vital statistics

Unlike other sources of vital statistics, such as censuses and household surveys, the administrative data provided from CRVS systems permit the production of statistics on population dynamics, health, and inequities in service delivery on a continuous basis for the country as a whole and for local administrative subdivisions. This is a key driver for developing CRVS systems. Birth registration helps with the identification of population health needs, and mortality registration contributes to a better understanding of mortality patterns and the burden of disease in each population. Used together, birth and death data can enable regular updates of population estimations and support planning efforts across sectors. This has many benefits including overall governance by having basic data on people being served by government, which is important, for example, for estimating population sizes for elections. Accurate 'denominators' allow accurate estimations of key measures such as income per capita, education needs, and assessments for disaster risk management.

Improving vital statistics involves not collecting data on a one-off basis, but establishing a sustainable and reliable system of data collection for producing nationally representative vital statistics. A good example is the lack of credible and coherent maternal mortality statistics in areas where mortality is highest (**Annex 2a**); available data can be difficult to reconcile in the absence of a credible CRVS systems. There are frequently differences of opinion in countries on whether to use maternal mortality estimates from the census, household, or other sources used for estimations. In addition, these national estimates often differ from those modeled by WHO, UNICEF, UNFPA, the World Bank, and academia. Another difficulty is the wide confidence intervals of maternal mortality estimates derived from household survey data, which do not allow for trend analysis. Given the factors above, a universal registration of deaths with the cause of death would make it easier to track the level and causes of maternal and other deaths and to take the necessary actions to identify and address causes of mortality.

Birth registration

Universal birth registration is now enshrined in international human rights through the Convention on the

Rights of the Child (Article 7). It is the continuous, permanent, compulsory, and universal recording within the civil registry of the occurrence and characteristics of births in accordance with the legal requirements of a country. UNICEF has established a set of principles that should be followed, emphasizing that birth registration should only be compulsory if certain characteristics are established (UNICEF 2013). Birth registration should take place “immediately” following birth, the standard measure being within 30 days of birth (UNHCR 1990). Data derived from CRVS systems normally refer to the proportion of live births that were registered within a year or the legal time frame for registration applicable in the country. In the absence of functional CRVS systems, birth registration coverage is currently measured as the percentage of children under age five (0 to 59 months) with a birth certificate or whose birth was reported as registered with civil authorities at the time of the survey. Birth registration at or shortly after birth is central to global efforts aimed at reducing infant mortality and improving early childhood development (Giugale 2011). Even when births are registered, the newborn may not obtain a birth certificate if the family have to return to the registration office to receive the birth certificate and do not see the value when there is significant distance, time and financial cost. Efforts to achieve universal birth registration should recognize the potential unintended consequences if this is applied rigidly. For example, birth registration can be checked at school entry, but this should not be a requirement for entry to school or taking exams as this impinges on other rights.

Registration of death and cause of death

Death registration is also identified in the UN Principles and Recommendations for a Vital Statistics System (UN 2013). It provides legal rights to the family, for example, in conferring property or other individual or personal transfer rights to remaining family members. It is also central to keeping the civil registry up to date. Some countries might have good death registration coverage but little or no information on causes of death because there are no processes or resources in place to determine these, such as verbal autopsy or in health facilities adequately trained medical staff. Cause of death registration provides critical information about infant, child, and adult mortality and the burden of disease in communities, and contributes

to the calculation of population statistics and dynamics. The WHO International Classification of Diseases and Injuries (ICD) is used as the global standard for classifying causes of death in a comparable manner over time and between populations. The latest version, ICD-10, was released in 1994, and an eleventh revision is under way (WHO 2010). Cause-specific mortality statistics, by age and sex, for national and subnational populations are the backbone of public health decision making, planning, and monitoring. Mortality data is collected using a standard Medical Certificate of Cause of Death with standardized coding of the underlying cause of death.

Why CRVS will matter even more in the future

The importance of CRVS will continue to grow in the future as both a critical enabler of improved country governance and planning and a means for improving development outcomes.

The “Grand Convergence” in health

Accurate vital statistics and the ability to monitor and respond to causes of death and disability underpin many global health targets, including new commitments to universal health coverage and tackling the global epidemic of non-communicable diseases. Current financing and ever-improving technical capacity in the world today could reduce child and maternal mortality rates to universally low levels by 2035 (Jamison and others 2013, 1898–1955). This would prevent an estimated 10 million deaths and lead to an estimated 11 percent increase in economic growth, as measured in national income accounts covering economic productivity. The importance of CRVS will increase as countries expand their provision of services and as regional economic integration deepens (ADB 2007). Additional gains would come from the intrinsic value of better health in and of itself.

These future investments, and the gains that come from them, require reliable, complete, and timely information to understand and measure three key domains of health—the determinants of health, health status, and the health system (WHO 2008). Good health information also makes health policy and planning more effective

and efficient (Fryatt 2014, 950). However, such information is often not available in many middle-income and most low-income countries. Many problems arise from using estimates to assess progress in achieving global and national targets, and more reliable sources are increasingly being called for (Melamed 2014). For instance, as maternal and child mortality rates decrease over time and become rare events, the only way to accurately track progress will be through complete CRVS systems which will provide data on the full registration of births and deaths among pregnant women and children.

Gender dimensions of civil registration and identification

As already noted, birth registration is often required to access work and financial services later in life and is particularly important in societies where women have been denied access to such services, or where the male head of household has traditionally taken on this role for the family. In some parts of the world discrimination against women is a key factor behind non-registration of births (Plan International, 2012). Reporting of death may be key to inheritance and land rights as well as protecting women and girls from abuse, exploitation, and violence.

Similarly, proof of marriage and divorce registration is a largely unrecognized part of well-developed CRVS systems. Having good marriage and divorce registration are frequently required to obtain documents that can contribute to women's ability to inherit property and register their children in some countries, among other benefits. Registering girls at birth and recording their marriages provides a legal backing against early and forced marriage.

Identity documentation is critical for individuals to exercise citizen rights and responsibilities and access entitlements—precisely some of the most significant domains with major gender gaps and gender data gaps. Individual identity documentation expands women's economic opportunities by allowing women to acquire, claim, transfer, and dispose of physical and financial assets independently. It also increases women's independent access to services and entitlements and expands women's voting and political rights and opportunities. Civil registry data yields the

basic numbers to help close data gaps in all these domains. More importantly, it is a basic vehicle to increase women's voice and agency and their ability to both contribute to and benefit from development (UN Foundation 2014).

Civil registration and data in times of crisis

A functioning CRVS system can support a stronger recovery effort in the event of a crisis or natural disaster. During emergencies, conflict, and disasters, routine CRVS systems, if present, often become non-functional with the destruction of records, hampering humanitarian responses. The lack of civil registration during a crisis can lead to statelessness and in itself can be a strong reason to establish proper CRVS systems, as was recently acknowledged by the UN (UN General Assembly 2013). One of the main pillars of an effective humanitarian response is the establishment of CRVS type systems in times of emergencies (IDMC and UN OCHA 2008). New technology can be more resilient than paper-based systems as it can be more easily recovered following a disaster. It can also assist the response; for example, when floods devastated Pakistan in 2010, the national office responsible for identification used existing systems to roll out pre-paid relief cards to the 20 million flood victims within three days (Uphadhy 2013). Likewise, archived and maintained CRVS systems were a critical component in the recovery effort after the recent typhoon in the Philippines.

Harnessing new technology

The civil service workforce in many low- and middle-income countries in charge of recording vital events and preparing vital statistics are usually neither equipped nor trained for such tasks. Most CRVS systems have remained largely paper-based and manual. However, the arrival of new technology in resource-constrained environments creates an enabling environment for developing more efficient and effective information systems. This technology was not present when CRVS systems were developed in OECD countries, so many low and middle income countries can “leap-frog” to more efficient systems. Good practice is now being established on who should own them, how these should be deployed to ensure accurate, comprehensive records, and how these records should be used and updated to the benefit of citizens.

This requires careful design and not ad hoc projects. Building a well-functioning technology platform for CRVS remains a challenge, given its multisectoral nature. There are currently too many lost opportunities, where, for example data on births and deaths are being captured in the routine health management information systems (HMIS) of a country, but are not captured in the CRVS records. Mobile phones and increased access to the internet are involving new groups in no-

tifying civil registration authorities. This includes community-based vaccination program workers, community health workers, and village elders, some of which are highlighted in the case studies in **Annex 3**. Where country context is similar, some models can be transferred across countries; however barriers and solutions usually vary considerably across countries, and local assessments are always the starting point to sustainable solutions.



The Poor Performance of National CRVS Systems

Current state of CRVS

Birth registration

In 2012, the Human Rights Council adopted a resolution on birth registration as a human right. This follows the mounting evidence on the need for individuals to have a legal identity if they are to be able to realize their rights or obtain benefits and opportunities provided by the State. According to UNICEF estimates, in the past 10 years there has been an overall increase in global birth registration rates of children under five, from 58 percent to 65 percent, with increases being most significant in East and Southern Africa (UNICEF 2013). However, Sub-Saharan Africa has the lowest levels of birth registration (see **Annex 2b**) and monitoring of data on birth registration rates for children under five is no longer considered useful. Indicators are required that help protect the rights of newborn children and ensure that they have access to the adequate nutrition and environmental stimuli that are essential for early childhood development and future physical and cognitive health. According to the latest UN guidance, birth registration should be “immediate” (where defined, this is usually 7–30 days); up to 12 months is viewed as “late registration” and beyond 12 months is “delayed registration.” Children whose births are not registered will fail to be included in the CRVS systems if they die, leading to serious under-estimations of infant and child mortality.

The rules and definitions of birth registration need to be updated to match our current knowledge of the requirements for a healthier population and the degree to which technology can play a role. As with all registra-

tions, CRVS systems should be updated as close to the event (birth or death) as possible. This is an urgent area for consensus building, starting with routine monitoring of birth registration rates within a year of birth. Checking for birth registration can provide useful incentives for reducing delayed registration, but the lack of registration should not be used as a means of preventing access to essential services, such as enrolling in school. The Philippines offers good practice in this regard, where a birth certificate is checked for at enrollment, and if a child does not have it then the school offers guidance on how to conduct a late registration. The child then has until graduation to provide a birth certificate

Death and cause of death

Despite the importance of this data in informing health policies and programs, progress with death registration has been much slower globally than birth registration, as shown in **Annex 2c**. Up to 80 percent of deaths occur outside of health facilities in low- and middle-income countries and there is a lack of incentives for families, doctors, registries, and health services to register events accurately. In 2012, WHO estimated that two-thirds of all deaths globally are not counted, with low-income countries being the most affected (**Figure 2**).

An extension of the death registration data includes the collection of information on causes of death, which, combined with birth and death information provides a comprehensive set of vital statistics information for health and broader development purposes. In a functioning CRVS system, each death would ideally have both death registration information as well as cause of death information.

Cause of death information is compiled in two primary ways: through the collection and coding of routine medical certification records from health facilities; and through collecting information about community deaths through sampled collections methods using verbal autopsy.

Only 81 of 194 countries can report high-quality or medium-quality data on deaths and causes of death (**Annex 2d**) (WHO 2012). Alarming, 42 of the 46 African member states cannot report credible death registration data, and of the 75 low- and middle-income countries prioritized by the Commission on Information and Accountability for Maternal and Child Health (COIA), only 14 report figures on death registrations to WHO. This means critical mortality information, such as deaths of newborns, children, and mothers, or mortality from HIV/AIDS, tuberculosis, and other diseases, are estimated from very limited information.

Why are CRVS systems in such poor shape?

Demand-side: lack of Awareness and barriers to registration

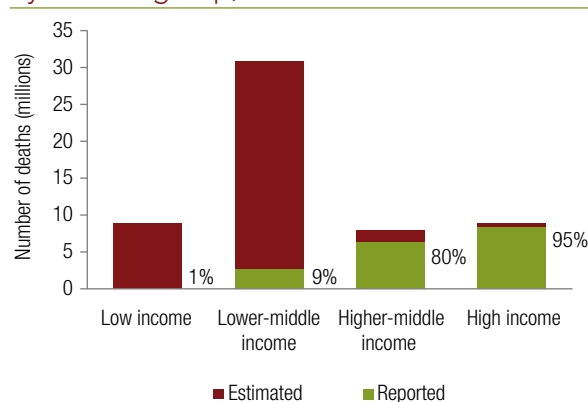
Many people are not aware of the importance of birth and death registration for them and their families and the implications that this has for access to core government services. This lack of awareness extends to groups in the community such as burial authorities, who can play an important role in reporting deaths. Current registration sys-

tems are frequently difficult to access and to understand, so demand for better registration service is often low. Registration forms (birth, death, etc.) are often difficult to fill and need to be simplified and better designed as has happened in successful CRVS initiatives, such as in Brazil. There are often financial barriers to registration: obtaining identity documents, for example, often entails official fees, fines for late registration, opportunity costs, transportation expenses, and bribes. For many poor families, it is simply too costly both in terms of time and money.

In some countries, there are discriminatory laws, practices, and attitudes that prevent registration. For example, the head of the household may be legally responsible for registering a child, and some countries specify that this person must be male (Plan International 2012). Women who are unmarried face particular obstacles, as do parents from minority groups. In addition to these barriers, individuals may not bother to register vital events because they do not perceive any personal interest in so doing. Birth registration in a country can, for instance, stand at 50 percent while immunization coverage is 90 percent—mothers see an incentive for immunizing their children and are willing to bring them to immunization centers, but fail to report births to the local registration office because they do not see an immediate incentive for registration.

Simplifying the process and providing a vital event registration service within the existing structures with which citizens interact can help to dramatically increase registration coverage. Meanwhile, the backlog of unregistered children can be reduced through registration at schools.

Figure 2 • Estimated and reported deaths by income group, 2009



Source: World Health Statistics, WHO.

Supply-side problems and the CRVS “orphan”

There are different, often conflicting, legal frameworks governing each of the agencies in charge of CRVS services, such as the health system, civil registry, and national statistics agency. Many countries have burdensome procedures and non-standardized systems across a country, leading to confusion regarding what individuals need to do or present. Supportive documentation may be requested even if it is not legally mandated, such as birth registration requiring proof of parents’ citizenship.

Those involved in operating the CRVS systems may lack the necessary skills. Some challenges, such as improving

data collection and accuracy of data entry, can be overcome by training existing staff. Others require special initiatives, such as expanding the size of the statistical profession (Thabane and others 2008, 125–148) and setting up national and regional networks of civil registrars. Physicians, who are required by law to complete medical certificates on cause of death, are often not aware of the importance of this responsibility and have inadequate training. Capacity strengthening and awareness raising are also required in ministries of health and national institutions involved in surveillance, disease registries, large health facilities, national road safety commissions, police, and health insurance authorities.

There are often online and real-time access limitations in health facilities to the civil registry data repositories. Electronic data inter-exchange limitations affect the ability of health facilities to generate birth and death certificates that include the underlying cause of death properly coded according to ICD-10. Civil registration is too often just a passive collection of events and not an active seeking of new or more accurate collection data, a situation that is now changing with the use of other networks such as health workers, village chiefs, and faith leaders. Use of mobile phones for registration is stimulating a lot of interest, but this remains experimental with as yet no nation-wide experience. Paper documents will remain important for legal purposes, and most of these countries will not have Information and Communication Technology (ICT) laws that allow electronic records to be used as evidence.

Lack of a political priority has resulted in inadequate policies and poorly managed, underfunded CRVS systems, deficient in full-time professional staff. Some CRVS systems, such as for birth registration and statistical capacity, have been the target of some international support, but there has been little support for strengthening the civil registration system as a whole—it is seen as the donor “orphan.” Collection of essential data, for example monitoring progress against the Millennium Development Goals (MDGs), has focused more on interim measures and surveys, with inadequate investment in sustainable CRVS systems. Mobilization of resources and budgeting for maintenance and operation of the civil registration system, in addition to recruitment and retention of qualified professionals, are key to ensuring that accurate information is maintained.

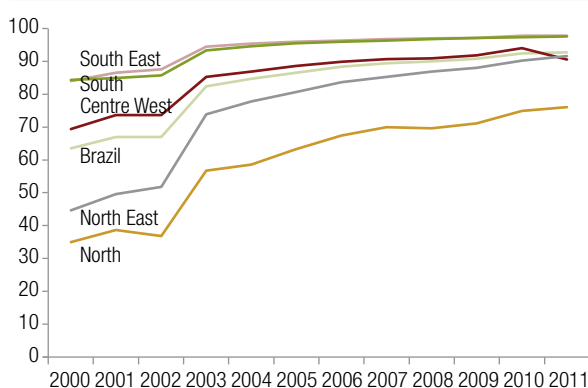
Lack of integration and coordination

The civil registry deals with individual, personalized, transaction-level data, while vital statistics systems usually focus on aggregated, anonymized data in relational databases, data warehouses, or repositories using multiple data sources (civil registry, census, surveys, etc.). Getting the civil registry and vital statistics systems to interact efficiently is difficult, and administrators derive no benefit from linking to other parts of the government; it is just one of many functions that they have to perform, which makes such linkages tenuous at best.

Integrating the different components is also a technical challenge related to standards, protocols, and data exchange, often requiring institutional agreements across many government departments. The first challenge of coordination is assigning clear responsibilities within the CRVS systems and ensuring that there is no duplication or gaps during the registration lifecycle. Some basic activities, such as involving the national statistics agency during the process of designing a new birth certificate form, can greatly enhance the effectiveness of the CRVS system. Modern technology has only progressed piecemeal in many countries. Meanwhile there has been a proliferation of databases capturing different information about citizen records, which are incompatible with one another, and often contain inaccuracies and inconsistencies in identifying citizens and their attributes. In such situations, laws covering privacy and the need for confidentiality are difficult to enforce.

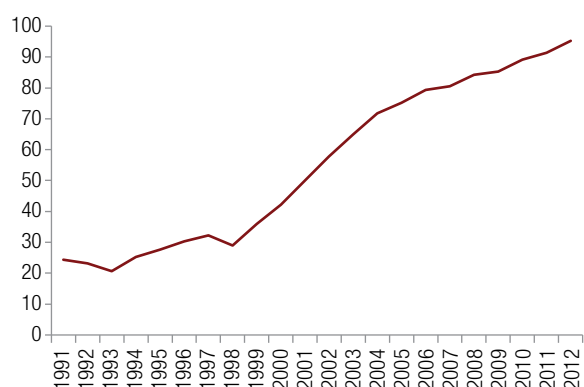
The CRVS databases are often neither connected nor interoperable with any of the other management information systems in other agencies with which they need to interact (e.g. health, education, and social protection). There is usually a lack of integration and interoperability between NIS and electronic medical records and HMIS. Given that within governments, civil registration systems are the responsibility of a number of ministries or departments—health, interior, justice and statistical offices—coordination and communication among multiple agencies is key to performance, but difficult to achieve. This problem is also mirrored in the international statistical systems, where efforts have been made to better support the needs of developing countries (World Bank 2004).

Figure 3 • Brazil – Trends in birth registration



Source: UNICEF Every Child's birth right: Inequities and trends in birth registration. December 2013.

Figure 4 • South Africa – Trends in birth registration



Source: UNICEF Every Child's birth right: Inequities and trends in birth registration. December 2013.

What progress has been made to strengthen CRVS?

Success stories

Some countries have seen remarkable improvements in CRVS systems in recent years. For example, Brazil has made significant progress with birth registration, overcoming many of the discrepancies across its states (**Figure 3**). Brazil established civil registry units in maternity hospitals and provided hospitals with a small payment incentive to register births. This was later expanded to electronic registration, and the country overcame challenges with institutional coordination between the states and at the national level. The Ministry of Health and the

Brazilian Statistical Institute also made birth and death statistics available on the internet within just one year (Danel and Bortman 2008).

Another example of success is South Africa, which has also seen major improvements in birth registration in recent years (**Figure 4**). Death registration has also improved after the process was made a compulsory step before burial, and certification on the cause of death has improved following the training of certifying officials in hospitals as well as the introduction of an automated coding system (Lehohla and Mathenge 2013).

Legally, institutionally, and administratively, civil registration and vital statistics exist as two separate bodies—the first is a legal registry and the latter an administrative registry. While the former is important for the latter, the legal registry can function well on its own, whereas the administrative registry can be improved by timely input from the civil registry. It is not a given that every country can develop a fully integrated CRVS system, but this has been successfully done, for example in Uruguay and Peru (IDB and World Bank 2014). Regional experience has also been used to develop a glossary for civil registration and for identification (Harbitz and Benítez Molina 2010).

Public-private collaborations

The end products of functional CRVS systems are useful to the private and public sectors. The private sector has a major role to play in providing new solutions to the information need of CRVS systems. One obvious example is the expansion of mobile phone services to most parts of Sub-Saharan Africa, with special initiatives aimed specifically at sharing good practice and building interoperability. Groups such as GSM Association (GSMA), for example, have developed special initiatives for Africa to ensure that the benefits help both the industry and local health services (Mobile World Live 2014). Another example of this is found in South Africa, where smart card technology from the private sector is being used for identification systems (South Africa.info 2012), and in India, where biometric technology for iris, fingerprint, and photos are used in the country's massive identification program (Gelb 2014). A common area of weakness, however, is among private health and funeral service providers, who often need more encouragement to routinely report deaths.

Statistical capacity

There has been longstanding recognition of the importance of statistics as a foundation for development. The Partnership in Statistics for Development in the 21st Century (PARIS21) was set up in 1999 to reduce poverty and improve governance in developing countries by promoting the integration of statistics and reliable data in the decision-making process. There has been significant progress in the number of countries that now have National Strategies for the Development of Statistics with new, more user-friendly guidance recently launched. The World Bank's composite indicator on statistical capacity shows that since 1999, most low- and middle-income countries have improved their capacity. However, in Sub-Saharan Africa, the improvement is with respect to the periodicity of reporting statistics, with no significant change in the other two capacity measures—methodological and sources of data (PARIS21). This demonstrates that there is still considerable work to be done (**Annex 4**).

Privacy and personal information

Sound public administration, the delivery of core government services, and the smooth functioning of commerce all depend on robust means of personal identification. The digitalization of registration systems are leading to new lessons on handling the risks (Plan International, 2014). Secure and confidential sharing of personal information between government agencies is desirable for a range of reasons, but there is a tension between freedom of information, transparency, and government account-

ability, on one hand, and the need to protect personal information on the other (UN Joint Programme on HIV/AIDS 2006). The foundation rules for robust and sustainable CRVS systems should be established in primary legislation. Key principles should be taken into account in designing the legal framework for civil registries including the need for the following:

- *Good governance arrangements*: to support a holistic approach across the government agencies and institutions responsible for civil registries, ensuring collection and use of quality data in an efficient and effective manner;
- *Free flow of information*: to ensure that accurate information is captured and disseminated in a timely manner, supporting effective policymaking, efficient resource allocation, and accurate evaluation and monitoring;
- *Transparency*: to ensure that registries are implemented and managed pursuant to clear rules that promote accountability for the fair handling and use of information;
- *Individual privacy rights*: to protect individual privacy rights and permit individuals to access their personal information and, where necessary, to challenge and correct any inaccuracies; and
- *Public safety and security*: to support citizens' identity and civil status, without threatening the safety of individuals who might be put at risk by the intentional or inadvertent disclosure of personal information.

A more detailed discussion and summary of emerging lessons relevant to CRVS are provided in **Annex 5**.



The Opportunity to Transform CRVS

Start with women and children

There is now an opportunity to overcome the many deficiencies in CRVS systems through global attention to improving the health of women and children (Government of Canada 2014). The move to universal access of supervised birth provides an opportunity, together with new technology, for registering all births soon after the event and ensuring that women lacking adequate registration in the health system can now have their rights to government services acknowledged and guaranteed. The COIA recognized this opportunity and its first recommendation stated that “By 2015, all countries have taken significant steps to establish a system for registration of births, deaths, and causes of deaths and have well-functioning health information systems that combine data from facilities, administrative sources, and surveys.”

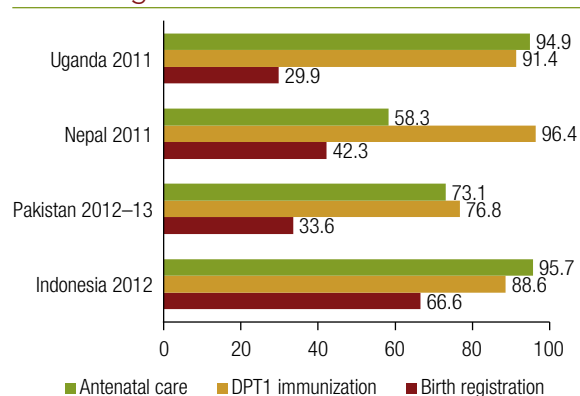
The first report of the independent Expert Review Group (iERG) released in 2012 on the COIA’s recommendations noted 75 priority countries, which account for 98 percent of global maternal and child mortality (WHO 2012). Of these 75, only 12 have over 90 percent coverage of birth registration and report to the UN with a figure for death registrations.

The global COIA oversight mechanism now reviews progress and has spurred significant interest and action in many of the 75 countries targeted by the Commission’s report. CRVS strengthening has become a central part of discussions on the health of women and children. As a result, dozens of countries have conducted CRVS assessments and several are developing national plans and establishing multi-sectoral CRVS coordination mechanisms (Annex 6).

Registration through maternal, newborn, and child health (MNCH) services

Scaled-up coverage of maternal, newborn, and child health (MNCH) services, combined with the introduction of new technology, is providing many opportunities for strengthening CRVS, as illustrated by the country case studies in Annex 3. Birth registration coverage tends to lag behind coverage of antenatal care and DPT1 immunization, (Figure 5). Thus, birth registration can be boosted by creating awareness among pregnant women during antenatal care and having immediate notification of births to ensure full coverage of essential services. This can be followed by immediate registration of all institutional births, and follow-up of all children at the DPT1 vaccinations at six weeks to ensure they are all registered.

Figure 5 • Birth registration – Compared to antenatal care and DPT1 immunization, % coverage



Source: Demographic Health Surveys.

One area of particular interest for birth registration is the opportunity provided by the immunization of infants (PAHO 2012, vol. XXXIV). Given that the vast majority of newborns receive the BCG vaccine, and in some countries vaccinations are done at birth, health workers have the opportunity to issue the child a vaccination card and remind the parents about registering their child. In most countries, children also have at least five vaccination contacts by their first birthday. Inclusion of a space to mark whether the child has been registered, either in the vaccination registers or in cards kept at health facilities, allows trained and sensitized vaccinators to remind parents about birth registration and educate them on where to go to have their child registered.

Parental involvement is key. In Kenya, for example, declaration forms are kept in health centers and parents are asked about the registration status of the child; if parents report that they have not registered the child, the health workers can have the declaration forms filled immediately, send them to the registrar, and the certificate can be obtained and delivered to the mother when she comes for her next visit. Additionally, birth registration can be included in the list of incentivized indicators in results-based financing programs.

With the advent of computerized immunization registries and unique identifiers, as in Latin America, health workers also have an opportunity to register the child in an immunization registry while also updating the country's civil registry. This is made possible, in part, because the same variables needed for birth registration—name, date of birth, parents, etc.—are also included in birth and civil registry databases. Although the vital registration system requires that a newborn be registered within the shortest possible time, children under age 2 are less likely to be registered than children age 2–4. This is because of the widespread practice of asking parents to produce a child's birth certificate for school admission. A change of approach, linking birth registration to immunization as in Latin America, could result in a huge surge in registrations, with the related benefits, over a relatively short space of time. Similar opportunities exist for linking antenatal registration and maternal and neonatal death with updates to the civil registry.

The health sector plays a unique role in reporting deaths and certifying deaths in health facilities by a trained

physician using the international form of the death certificate, and in the community using verbal autopsies (WHO 2013). As well as providing data, the health sector also gains from this closer link to CRVS, as better monitoring of births, deaths, and causes of death leads to performance improvements. The early registration of all pregnancies in antenatal services, for example, improves maternal outcomes. More complete registration and investigation of stillbirths, neonatal deaths, and maternal deaths, for instance by establishing maternal death surveillance and response (MDSR) systems, will provide the required data on cause of death and lead to local corrective actions and improved public health policy and resource allocation (WHO 2013). Messages on birth registration can be integrated into personal communications that the health workers undertake to educate mothers on maternal and child issues, particularly during antenatal care and child immunization services.

Harness the data revolution

Developing functional CRVS systems in all countries will bring benefits to multiple settings and across many sectors, including to individuals, and in areas such as health, social protection, education, trade, and commerce. In fact, CRVS must be a critical part of the “data revolution” that has been called for by global leaders to improve the quality of statistics and information available to citizens and governments (UN 2013). There are now opportunities to establish 21st century CRVS systems that draw on the wide availability of information and communication technology (ICT) and innovations around assigning unique identifiers and linking health records with civil registries.

The benefits will be broad and cover the two key outputs of functioning CRVS systems—accurate statistics for planning and development and establishment of the identity of individuals. Statistics facilitate the fight against poverty through quantifying outcomes and measuring progress toward the national and international development goals, as well as helping to build a more solid evidence base of successful interventions (Okonjo-Iweala and Osafo-Kwaak 2007). By focusing on birth registration and reporting of deaths in women of reproductive age, neonates and infants, including cause of death data, all countries can strengthen coverage of essential health interventions and

remove the current “scandal of invisibility” in many low- and middle-income countries (Setel 2007).

Legal identity proves citizenship and helps provide access to State services or entitlements. It can also be a defense against exploitation or protracted hardship in times of emergency. As more children are routinely registered at birth, and as the backlog of women receiving the identification documents they are entitled to is cleared, the many development benefits of proper identification will be realized. Civil registries and identification databases are often developed separately, although attempts are being made to have them better linked.

Experience from the many new approaches being tried in low- and middle-income countries shows that the benefits of fully functioning CRVS systems will not be realized in the short term if each country has to do this on its own. New internationally applicable CRVS standards are required in areas such as the use of unique identifiers, interoperability of information systems, and the various tools and devices used to collect and transmit data. This will speed up the move from paper-based to future ICT systems, and in the long term, improve the efficiency of many government administrations (Plan International, 2013).

Build on regional leadership and global coordination

Recent years have seen the start of important regional momentum of CRVS through initiatives aimed at strengthening CRVS systems in countries. These provide essential advocacy and accountability for change and create mechanisms to exchange and share technical knowledge and expertise.

African Program for Accelerated Improvement of CRVS (APAI-CRVS)

A permanent conference of Ministers, under the auspices of the African Union, oversees this regional effort, for which the United Nations Economic Commission for Africa (UNECA) provides a secretariat and coordinates the implementation of APAI-CRVS in collaboration with regional partners. Experts have been trained to support CRVS strengthening, and most countries in the region

now have an inter-ministerial coordination body on CRVS. The Africa Symposium on Statistical Development had its ninth session in Botswana in January 2014, focusing on CRVS for good governance.

Regional initiative to improve CRVS in Asia and the Pacific

Initiated in December 2012, the regional initiative in Asia and the Pacific will be formalized at a Ministerial Conference in November 2014 when countries will have the opportunity to endorse a regional action framework with national targets and a reporting structure for monitoring and accountability (UN ESCAP 2014). It is expected that the Ministerial Conference will induct a “CRVS decade” for the region. The regional initiative is guided by an intergovernmental Regional Steering Group (comprising representatives from 19 Asia-Pacific countries and 5 organizations) that was established in December 2013; the initiative is supported by development partners such as ESCAP, UNICEF, WHO, UNDP, UNFPA, UNHCR, ADB, SPC and Plan International.

Eastern Mediterranean Regional Strategy for the improvement of civil registration and vital statistics systems

Following a review across member states, in September 2013, a regional committee from the Eastern Mediterranean Regional Office of the World Health Organization (EMRO) together with more than seven partners in the region agreed on the need for a regional strategy to guide and support countries with improving their civil registration and vital statistics. To date, building on the Accountability Framework momentum, every country in the Eastern Mediterranean region, with one exception, has completed comprehensive assessments and national plans. A report on country rapid assessments has recently been completed (WHO 2013).

Pan-American Health Organization Regional Plan of Action for Strengthening Vital and Health Statistics

This was adopted in 2008 and has been implemented with support from a regional partnership with the Or-

ganization of American States (OAS), the Inter-American Development Bank (IDB), UNICEF, and the World Bank (PAHO 2008). The World Bank also provided a detailed assessment of CRVS in most countries in the region in 2008 (Danel and Bortman 2008). In March 2010, the Latin American Network for the Strengthening of Health Information Systems (RELACSIS) was created as an instrument to facilitate South-South cooperation toward improving the Health Information Systems in the countries. A report on progress since 2008 was prepared in 2013 and the considerable lessons learned across the region are presented in **Box 2 (Annex 3)**.

Global Coordination

The cross-sectoral nature of CRVS has attracted a large number of interested stakeholders to this growing global alliance. A Call for Partner Action on CRVS in April 2013 called for global partners to align their efforts, and “...deliver coordinated and sustained support to countries to achieve well-functioning CRVS systems” (WHO/HMN 2013). In addition to the numerous partnerships within countries and across regions, an increasing number of global players are taking on key roles. In March 2014, a *Global CRVS Group* was set up to forge stronger alliances between key stakeholders in the area of CRVS. The secretariat will be provided by the UN Statistics Division. The group aims to review status, progress, and challenges to support for national CRVS and to assist with coordination (**Annex 7**).

The main objectives of the group are to (a) converge strategic priorities and mandates towards a holistic approach to CRVS, creating an enabling environment for greater collaboration at the national, regional, and global levels, and delivering as one; (b) exchange information and coordinate global activities among members to complement CRVS momentum at the regional and national levels; (c) explore and leverage additional opportunities to accelerate the improvement of CRVS systems; and (d) advocate for the importance of CRVS as a development imperative.

But more must be done. With the post-2015 development agenda also likely to rely heavily on monitoring from CRVS data sources, coordination and investment by global partners are now critical.

Key enabling factors for effective CRVS systems

CRVS as a public good

A significant amount of learning has been taking place on what makes CRVS systems viable, notably, that they must be seen as a public good in order for all members of society to benefit, regardless of whether they contribute to creating or sustaining them (WHO/HMN 2013). CRVS is more than the sum of its parts, and its development requires a holistic approach, taking into consideration all events (including births, marriages, deaths, cause of death, and issuing IDs), their supporting information systems, and associated legislation.

Good CRVS systems are user friendly and modular allowing different sectors and government departments to engage over time. The business relationships of these sectors with the civil registry need to be sufficiently understood so that any changes can be carefully designed to strengthen flows of information and ensure that high-quality data is generated in a sustainable way.

When transitions to new systems are required, they must be carefully designed. All stakeholders must be involved, using good communications with users and business owners. Strategies are required for dealing with legacy systems to avoid duplicative processes. Incentives are required to keep the CRVS updated and of good quality, focused on individual citizens and the private and public sectors. CRVS systems must also be active in finding, collecting, and using data, and not acting as a passive recipient—in this way, mobile devices and new technology can help enormously.

Advocacy on CRVS as a public good is required to make this a mainstream issue in the media and in the academic world. As of now, many journalists or researchers write about birth registration or mortality data as different things, not as part of the same system or institutions requiring strengthening.

Unique identifiers

The key to successfully integrating CRVS systems are unique identifiers, or Personal Identification Numbers (PIN) and ‘Primary Keys’, that allow for an exchange of information while ensuring confidentiality and security.

Linking health information with broader data improvement efforts in government provides opportunities for the health sector to benefit from the “unified identification coding systems” (e.g., national identification card numbers) that many countries are developing. New rules and guidance are required on how to do this in a way that respects the obligations of different institutions and policies. Much can be learned from the history of using unique identifiers in different settings.

South Africa for example, mentioned earlier, is piloting the use of national IDs as the unique identifier in the health system. The lessons from New Zealand may also be of wider interest (Delany 2006). Their policy of universal health coverage requires that every person residing in the country have access to health services, regardless of citizenship; the unique identifier therefore has to be different from that used by the national identification system. The two systems are linked however through confidential, inter-operational coding. If free universal health service coverage does not cover foreign visitors or migrants from other countries, additional policies and systems are required that respect international good practice (IOM and WHO).

Information Communication Technology

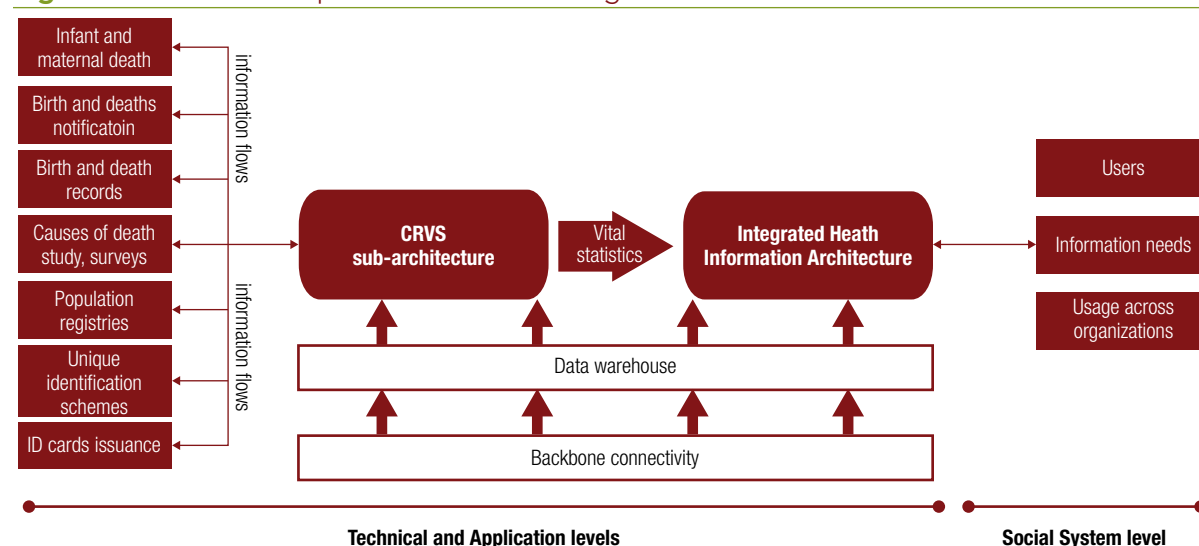
Well-functioning ICT infrastructure, including a reliable power source, internet, and cell phone coverage, provides

the enabling environment for developing modern CRVS systems, which in turn provides the platform for interoperable CRVS information systems and databases. While ICT is not a silver bullet, it can provide a means to collect, store and retrieve data in a fast, cost-efficient and user friendly way. Appropriate technology is required that respond to the country context and needs. Experience is growing with innovative solutions such as electronic registries, mobile applications, open source and integrated ICT solutions, electronic coding, and verbal autopsy tools. National projects are, however, complex and subject to failure; it is not unusual for them to require an act signed by the Head of State. Some key lessons are summarized below.

Enterprise architecture design

Enterprise architecture (EA) is a methodology for systematically analyzing user needs (e.g. citizens, civil registrars, health planners, policy makers), mapping business processes (information/work flows), gathering and documenting technical requirements to meet the needs, specifications, and planning of ICT-enhanced solutions. Designing and deploying these solutions requires data and ICT standards, and ultimately operating and maintaining these (interoperable) solutions, as shown in **Figure 6**. At its center are “backbone” connectivity and a central data warehouse and repository. A data warehousing approach involves integrative thinking—for example, if a database

Figure 6 • CRVS enterprise architecture design



for issuing birth certificates is also used by Ministries of Home Affairs for issuing passport, there are additional incentives for keeping the databases up to date.

ICT Governance

Effective governance mechanisms need to be designed, including a holistic approach that involves all CRVS stakeholders and taking into account a country's historical and institutional context. The governance arrangement should also allow for a modular approach so that components can be added or removed according to the needs of the sectors involved.

Mobile technologies

The use of mobile technologies is expanding rapidly, linked to the increasing penetration of mobile phone technologies in previously remote and unconnected parts of low- and middle-income countries. They have the advantage of potentially always being connected, always with the user, and secure. The reality on the ground is that many countries have many pilot mobile phone initiatives, in particular in the area of birth registration and maternal, neonatal, and child health. Thus, many countries are plagued by multiple pilot initiatives, each developing systems that are not interoperable. In order to capitalize on the potential, it is critical to develop standards and agree on mechanisms that are technically feasible and legally viable.

Incentives mechanisms

Incentives need careful consideration in the successful application of the ICT and mobile solutions, mentioned above. Close cooperation between all parties—private sector, government officials, civil servants, village chiefs—was a key element of the success of the pilots using mobile phones, as demonstrated in the case studies in **Annex 3**. Conditional cash transfers (CCT) have also been successful, but raise questions regarding sustainability (Robertson and others 2013, 1283–92). On the private operator side, contributions through corporate and social

responsibility are important, but also provide commercial opportunities—a birth registration event also represents a sales opportunity: an incentive for the agents to visit more villages and meet more families more regularly.

Synergies with identification and e-Governance initiatives

Projects already strengthening different aspects of CRVS and national identification systems (NIS) could be leveraged as part of CRVS scaling up. These may have started in a different sector, for example strengthening statistical capacity, social protection, and national identification systems (World Bank 2013). The recent introduction of electronic patient records (EPRs) in many countries may facilitate the transfer of information to the CRVS system; such links bring efficiency and need to be encouraged by donors and higher levels of government. Extracting data from EPRs will help eliminate the need to fill out additional reporting forms for the CRVS systems and will help to ensure data quality. Recent advances in digital biometric identification technology, and their decreasing costs, also provide more opportunities to expand and strengthen CRVS and NIS (Gelb and Clark 2013).

There are now a number of examples of countries planning to link national identification systems with birth registration, for example in Botswana and Kenya. In Botswana, the Omang (“who are you?”) system has databases that interface with each other, under the purview of the Department of Civil and National Registration with offices at the district level. One of the essential prerequisites for a person in Botswana to obtain an Omang card is the production of a birth certificate. Every birth that is registered is provided with a unique Omang identification number, and the same number is printed on the birth certificate. Similarly, the Omang database is updated as soon as a death is registered. This linkage has resulted in increased demand for birth certificates in the country. The other important link that has been established as part of the system is the requirement of the mother's and father's Omang identification number on the birth report form. This helps settle any issues relating to citizenship rights at the time of birth.

The Scaling Up Plan

Goal: Universal civil registration of births, deaths, and other vital events, including reporting cause of death, and access to legal proof of registration for all individuals by 2030

What will it take to deliver?

National CRVS strengthening

Rapid and comprehensive **assessments** of CRVS will be used to develop national **costed plans** for strengthening CRVS systems. These assessments will be accompanied by inclusive, national multisectoral **governance** arrangements to oversee and coordinate a sustained effort to develop and maintain CRVS systems (**Box 1**). Special initiatives will be required to improve access by persons from **marginalized groups**, and provide registration support for illiterate citizens. National **information, education, and communication (IEC) campaigns** are important in creating awareness but need to be complimented by national communication programs aimed at **changing behaviors** so that individuals actually declare and register vital events, with the impact assessed through repeated knowledge, attitudes, and practices (KAP) studies. While births and deaths might be a priority, it is important that registration of other vital events (such as **marriages and divorces**) benefits from the strengthened, interoperable CRVS systems. Countries will develop their own priorities, but some common areas might include the following:

- **Remove barriers to birth registration**
Registration of all births and **birth outcomes** of mothers at the time of birth, or shortly afterward,

during routine post-natal care and immunization services, will become a national norm. For this to happen, civil registration capacity needs to be **embedded within institutions** such as hospitals, health centers, traditional ceremonies and religious institutions where, for example, baptism or naming ceremonies take place. This starts with creating awareness during antenatal care, so that there is immediate registration of all institutional births, preferably with the provision of an identification number. At the six-week DTP1 vaccination, health personnel or community health workers check and register the infant if necessary. Care should be taken, however, not to recreate the past problem of having too many registration centers, each with very low workload, leading to reduced quality and lack of uniformity. Registration at centers in or near schools will be used for “**mopping up**” those not registered at birth. Community approaches could also be used, such as providing notification of births using ICT and Short Message Service (**SMS**) through community health workers or other village cadres.

- **Improve reporting of deaths and determining cause of death**

Reporting of deaths and cause of death in **hospitals**, should be the norm, as the HMIS is increasingly linked to the civil registry, with the automated production of death certificates and reporting of cause of death. Pre-service and in-service **training of physicians** on cause of death reporting and the use of using standardized death reporting form will need to become mainstream, with refresher trainings linked to continuing professional development and the many online resources. Continuous training of physicians, coders, and analysts will encourage routine

notification and registration of deaths along with the cause of death, accompanied by **automated mechanisms for ICD coding** linked to financial or other incentives.

In the **community**, many groups may be able to play an increasing role in reporting deaths and should be encouraged to do so by removing any disincentives such as extra registration fees charged by morticians and burial service providers. Routine use of verbal autopsies will not be possible in most countries. All countries, however, should be performing **verbal autopsies in samples of the population** to determine the burden of disease and the effectiveness of public health interventions. Linking such systems to the CRVS will remain a key topic for operational research. This will require extra work, and may require **dedicated non-medical staff** so as to not burden already over-committed local health workers.

- **Strengthen national CRVS Institutions**

Relevant **legislation, policies, and regulations** on CRVS, in line with international standards, will be required. CRVS institutions will need to be strengthened through improvements to **infrastructure**, human resources, and specialist **skills**. The realization of the need for centralized, integrated CRVS systems will lead to new **organizational models** in government that need to be documented and shared. Business processes will be strengthened through modernized ICT solutions for **integrating, digitizing, and automating CRVS systems**, with validation mechanisms to reduce duplication. Safeguards will be required to protect confidentiality, to **secure registration information**, and to avoid fraud or corrupt use. Certificates are the “products of the CRVS system” in the eyes of the public, and the **certificate service** may need to be strengthened to enhance public and political support for CRVS systems as a whole.

- **Strengthen national identification mechanisms**

Identity management has become a fundamental component of modern-day government operations, in both the developed and developing world. The linkages between CRVS and ID services are strong and should be reinforced. Strengthening ID systems will not benefit CRVS systems unless they are conceived together, or national ID requirements are considered when designing CRVS systems. Secure identity applications using new technology will en-

sure that government services and benefits are made accessible in a secure and cost-effective manner. Mobile phones can become the preferred delivery platform for social services, such as conditional cash transfers. The names of deceased persons have to be removed from ID databases through linkage with death reporting systems.

- **Improve response to deaths and vital statistics**

Ensuring the routine collection and response to vital event information on maternal and neonatal death is now a global priority and should help embed quality improvement techniques into health services. This should lead to progressive expansion and reviews of responses to other causes of death where this is not already taking place. Priority needs to be given to training, online courses, and qualification systems for staff involved in registration, and for statistical clerks, medical schools, and physicians on ICD coding, including the use of automated techniques. Strengthening national statistical agencies should continue through the NSDS process, including quality assurance mechanisms, and promoting the use of vital statistics to make decisions in areas of social, economic, and health policy, through regular summaries, policy briefs and public, web-based access.

International support for CRVS

A global, collaborative effort is required with the specific mandate of improving CRVS systems by bringing all the relevant parties together more effectively. Currently, there is no single body within the international architecture that has a specific responsibility in the area of civil registration and vital statistics, so a collaborative effort is required, which would focus on the following:

- **Improve International CRVS standards**

International **standards for tools and devices** could help simplify and standardize birth registration, death registration, determining cause of death, and data collection, analysis, and dissemination. This would include standards for the use of mobile technology, data management and analysis, and new technologies.

Model legislation and regulations for the collection, management, and use of information would

promote effectiveness and help protect individuals. Updated rules and definitions of birth registration (for example, within days rather than weeks of the event) need to be explored.

An open sourced **births and death certificate module** could allow all health facilities to process births and death registrations in electronic/modular format, linked to appropriate quality validation and verification. This would help provide incentives for quick on-site registration. New developments in ‘cause of death’ reporting, including ICD, provide an opportunity to **simplify the cause of death coding** system.

Standards and good practice examples are required to link CRVS with other national systems (e.g. national identification systems, population registers, electoral rolls, national pension systems, electronic medical records systems). This would include standards for interoperability of CRVS databases and other management information systems (such as health, education, social protection).

Existing global and regional structures for overseeing and supporting work on CRVS will be used to establish accountability frameworks and timelines for establishing national CRVS systems. This would be linked to strengthening financing and providing advocacy and technical support to strengthen national efforts to establish CRVS systems and a **standard set of indicators** for monitoring and evaluation of CRVS systems.

- **Guidance for strengthening CRVS**

There are a number of guides and tools for developing different aspects of the CRVS system. These include guides on rapid and comprehensive CRVS assessments (WHO 2010) to help the authorities obtain a clear and comprehensive understanding of the strengths and weaknesses of their CRVS systems and generate the evidence base for corrective action. Several resources are available to support strengthening of the overall CRVS system (WHO 2013; UNECA 2012) and for specific components such as birth registration (UNICEF 2013; Plan International).

Guidance exists for strengthening the response to complex areas such as maternal deaths and HIV related deaths. There are a considerable number of tools for strengthening coding of disease (WHO 2010), verbal autopsy (WHO 2012; IHME soon to

be harmonized), and analyzing causes of death, including from external injury (WHO 2013).

Iris software, from the German Institute for Medical Documentation and Information's Iris Institute, is being used for the automated coding of multiple causes of death and for the selection of the underlying cause of death, with routine checks required to minimize errors (through the WHO CoDEdit Tool).

Sharing knowledge and building the evidence base

The role of implementation research

The rapid expansion of new approaches and new commitments to strengthening national CRVS systems is leading to many research questions that would be best approached through multi-country collaborations (Abouzahr and others 2014). Some examples are (i) increasing **mobile notification** of vital events through services such as child health days, immunization campaigns, and post-natal and neonatal care and how to link this to the registration and issuing of certificates; (ii) improving **cause of death registration** and quality of cause of death data (for instance, synthesis of key lessons learned from OECD countries); (iii) using birth certificate **unique identifiers** for CRVS databases and other national systems (health, child protection, national identity, education, elections, humanitarian, judiciary and statistics); (iv) engaging community workers, Traditional Birth Attendants, and pharmacists through **mobile SMS** technologies; (v) establishing programs of **South-South cooperation** and establishing **public-private partnerships**; (vi) use of **biometrics**; and (vii) birth registration as one of the incentivized indicators in **results-based financing** programs.

Evaluation and sharing of lessons learned

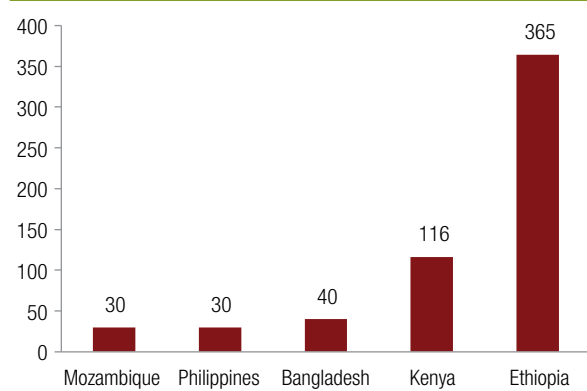
Monitoring of progress and sharing of knowledge will take place in national and international forums and web-based knowledge hubs. Evaluation of the development of CRVS systems and its various components will take place following careful design with evaluation experts, using rigorous impact evaluation methods where possible. The development of new knowledge will also include the impact and unintended effects of new technology and incentives for increasing birth and death registration and of penalties for late registration or non-compliance.

Financing needs

Costing

This exercise aims to estimate the additional financial resources needed to reach the implementation plan targets with the overall goal of *universal civil registration of births, deaths, and other vital events, and access to legal proof of registration by 2030*. It also provides order-of-magnitude estimates of the incremental costs from 2015 to 2024 to stimulate discussion and planning of support for national implementation plans. This work builds on the country-specific costing exercises and the cost structure developed by the Health Metrics Network. A summary of the work is provided in **Annex 8**.

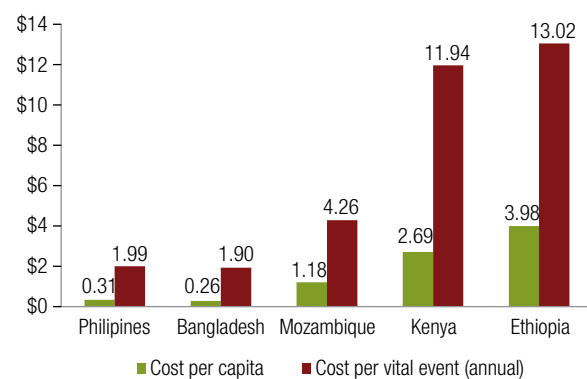
Figure 7 • Total CRVS development cost per five-year country plan (US\$ million)^a



Source: National CRVS Investment Plans, WHO 2014.

* The total for Bangladesh excludes biometric costs.

Figure 8 • Per capita and per vital event CRVS development costs



Source: National CRVS Investment Plans, WHO 2014.

The costing exercise developed provides estimates for four cost categories: (a) development costs (incremental costs or additional funds for establishing and strengthening CRVS systems); (b) incremental recurrent costs for maintaining CRVS systems; (c) international support to CRVS, including sharing knowledge and strengthening the evidence base; and (d) monitoring and evaluation.

Country strategic investment plans

Detailed cost estimates have been drawn from the five countries that have undertaken in depth costing exercises as part of the development of CRVS investment plans (**Figure 7**). The costs in each plan were disaggregated into fixed/start-up/capital costs and variable/operating costs². The total costs (without inflation adjustment) vary from under US\$30 million in countries with existing capacity, rising to over US\$365 million in Ethiopia, which only established a National Vital Events Registration Agency in October 2013.

Placing the investment in a population context, the country costs translate into a range of under US\$1 per capita in countries such as the Philippines and Bangladesh, to between US\$1 and US\$4 in Mozambique and Ethiopia (**Figure 8**). The cost per vital event (births and deaths) ranges from under US\$2 to over US\$13.

Cost of CRVS scaling up and financing gap

The estimated development costs (incremental costs or additional funds for establishing and strengthening CRVS systems) in the 73 COIA countries during the period 2015–2024 is US\$2,281 million or US\$0.90 per capita (**Table 1**).

The estimated recurrent costs of running CRVS systems (with the assumption that this increases as more CRVS systems become established) during the period 2015–2024 is US\$1.201 billion. Furthermore, the cost of the international support required, including to develop international standards and tools, generate knowledge, and develop an evidence base, was estimated at US\$0.228

² Fixed/start-up/capital costs refers to both fixed costs for capital investments and one-time development costs needed for the CRVS system. Variable/operating costs refers to ongoing costs of operating and maintaining the system

billion (10 percent of the total development cost), with an additional US\$0.114 billion (5 percent of the total development cost) for monitoring and evaluation.

The country costing exercises also allow for a provisional estimate of the expected commitment of resources from domestic sources, including the government and other in-country sources, estimated at US\$1.829 billion in the 73 countries. After excluding estimated domestic sources of funds, there is an estimated US\$1.99 billion financing gap for the global scaling up plan over a ten-year period, or an average of **US\$199 million financing gap per year** for 73 countries.

Resource mobilization for CRVS

Underling the development of effective CRVS systems is the growing recognition of their fundamental importance to the development of any country. High-income countries that have an effective civil registration system providing client-orientated services and vital statistics that are accurate, comprehensive, and accessible have developed their capacities over many decades, moving from paper-based to automated systems, often at great cost. Low- and middle-income countries now have the opportunity to benefit from this experience and move more quickly from paper-based systems to new ICT systems that are much less costly to maintain. In short, this means there is the potential to move over a relatively short time from old, high-cost, inefficient systems to future low-cost, highly efficient systems. Such a change will require capital investment and the development of adequate new administrative capacity. However, the economic arguments should be sufficiently strong to ensure

that governments make the required investment and that international partners mobilize sufficient expertise and short-term investments to get CRVS systems on track to a sustainable future.

Domestic budget

The global estimate of costs has included an analysis of budgets for developing and sustaining a CRVS system. This analysis provides an indication of the expected budget that will be required to maintain CRVS systems in the medium and long term in countries that are part of the CRVS scaling up. In addition to the capital outlay and initial development costs, the analysis includes estimates of the staffing that the country should be prepared to commit as part of its engagement on the development and long-term operation of CRVS systems. Long term sustainable financing of CRVS systems will be required from domestic sources, and ensuring governments build up their own resources and budgets to sustain CRVS systems is a critical success factor in this global plan.

Country assistance

In supporting the development of national CRVS systems, the principles of aid effectiveness will be applied to ensure national ownership and transparency in the arrangements. Given that long-term sustainability is an essential element in the development of the CRVS, co-financing and joint investment will be the basic principle for joint action, leveraging investments already under way in different sectors—health, social protection, and governance. Networks of regional technical support and cross-country exchange of experience will need to continue to expand according to demands in country. There are

Table 1. Estimated financing gap for 2015–2024 scaling up investment plan (US\$ million)

	2015–2019	2020–2024	10 year total	Financing Gap
Development costs	1,140	1,140	2,281	1,604
Recurrent costs ^a	408	793	1,201	49
International support to CRVS including knowledge sharing, and strengthening the evidence base ^b	114	114	228	228
Monitoring and evaluation ^c	57	57	114	114
TOTALS	1,720	2,104	3,824	1,995

Notes:

^a Recurrent costs increase as more CRVS systems are established (34 percent of total in first five years, and 66 percent of total in next five years)

^b 10 percent of total development cost distributed evenly

^c 5 percent of total development cost distributed evenly

also useful lessons to be learnt from OECD countries that have developed their CRVS systems over many decades.

Financing mechanisms

Various options are being considered to assist Governments in priority countries to fill the financing gap for strengthening CRVS systems. No matter what model is chosen for the international financing and governance arrangements, the key to success will be country-level political commitment and leadership. In countries, an assessment of the readiness for investment will guide international investments that must be aligned with one integrated, costed CRVS plan based on a clear institutional framework, on lessons from past experience, and the existence of a functioning coordination mechanism. Cross-sectoral coordination will include financing modalities agreed with relevant government line ministries, development partners, and the private sector. The different international financing and governance models are as follows.

Option 1: Expand scope of existing funding mechanisms

- **Description:** A number of funding mechanisms in different institutions could expand their scope of operations to include strengthening national CRVS systems. UNICEF has extensive experience with strengthening birth registration as part of its work on maternal child health services and the rights of the child. It has published extensively on this and shown the impact through its own experience. The World Bank has an existing Trust Fund for Statistical Capacity Building (TFSCB), which has been in action for over ten years following the PARIS21 event in 1999 with the explicit aim of building and strengthening the capacity of national statistical systems in developing countries. Again, this has shown to be effective in supporting many successful projects in different settings and has established links with regional and national institutions that deal with civil registration and national statistical agencies (Snorrason and others 2010); World Bank 2013).
- **Appraisal:** Both of these institutions provide important support to countries, which has proven to

be effective. Expanding their scope could be less expensive in terms of administration, compared to setting up a new financing mechanism. In addition, additional resources channeled through these instruments would have a good chance of leveraging other programs, for example IDA/IBRD support, in each institution. The main disadvantages are that the scope of support is currently not working across all of the sectors involved the CRVS system and changing the mandate may not be possible owing to existing institutional rules. These institutions, however, will be key partners in taking forward the global scaling up of CRVS and will remain major stakeholders and contributors.

- **Governance:** The governance of existing instruments could be reviewed to accommodate new stakeholders interested in strengthening CRVS systems. A Global CRVS Program steering committee, which would be the decision-making body of the CRVS scaling up effort, could be established to provide oversight of global investments in national CRVS strengthening efforts. A Global CRVS Technical Coordination Group would include a small team at the World Bank for day-to-day coordination of CRVS work and would build on the community of practice that has already been established. As there are stakeholders in the existing instruments, the change in governance could be lengthy.

Option 2: Multi-donor trust fund to leverage IDA/IBRD funding for lending operations

- **Description:** The World Bank Group (WBG) trust fund portfolio responds to the need for flexible and customized development solutions for both recipients and donors through its Global Partnership and Trust Fund Operations. Trust funds administered by IBRD and IDA complement and leverage the WBG's operations. They allow for the scaling up of activities, notably in fragile and crisis-affected situations; enable the WBG to provide assistance when its own ability to lend is limited; pilot innovations that are later mainstreamed into the Bank's operations; and leverage the Bank's operations both in IDA and IBRD. Similarly, other multilateral development banks (MDBs) such as the African Development Bank, the Asian Development Bank, and the

Inter-American Development Bank perform similar functions at the regional level.

- **Appraisal:** Considering that the strengthening and integration of CRVS and national identification systems require multi-sectoral approaches, the advantages of a trust fund associated with IDA/IBRD is that it could be linked to larger projects, such as in health, social protection, education, governance, and public sector reform and might be more closely aligned with national needs. This would provide an opportunity to leverage CRVS implementation on a larger scale, and possibly faster than through other mechanisms. The disadvantage is that not all countries will choose to have CRVS strengthening linked to IDA/IBRD operations.
- **Governance:** A Global CRVS Program steering committee could provide oversight of investments carried out through the multi-donor trust fund. Technical coordination could be provided by a small team at the World Bank for day-to-day coordination of CRVS work.

Option 3: Global Civil Registration and Vital Statistics Program

- **Description:** This program involves the setup of a new global program, with its own funding instrument. It could be housed in any of the development banks. There is an abundance of good practice to draw on, such as the Global Agriculture and Food Security Program (GAFSP). It is inter-sectoral and has quickly expanded to provide support in many low-income countries. The proposed new global program would aim to strengthen CRVS and promote integration of CRVS and national identification systems in low- and middle-income countries. It would mobilize additional resources from donors and development partners to provide additional financing to help fill the CRVS gap financing in countries.
- **Appraisal:** The advantage of this approach is that the program and its related funding arrangement could be purpose built, and recent evidence, including from the World Bank, has shown that it could be operationalized. The cross-sectoral nature of strengthening CRVS would fit well with a global program given its scope of work across many

sectoral boundaries. The main disadvantage would be the need to set up new, additional administrative processes and funding mechanisms with countries and implementing entities. Such funding would need to have significant added value over existing systems, for example by focusing on improvements in front-line services as well as incentivizing the more difficult reforms required for CRVS systems to be established. Also it would be challenging for the new global program to leverage other organizations' operations as its administrative processes could be different.

- **Governance:** The Global CRVS Program steering committee could be the decision-making body of the global program. A Technical Advisory Group could be established at the World Bank or another institution for day-to-day coordination of CRVS work. The World Bank or another institution would serve as the trustee of the Global CRVS funds mobilized for the scaling up plan.

What will be delivered and when

Goal

Universal civil registration of births, deaths, and other vital events, including reporting cause of death, and access to legal proof of registration for all individuals by 2030

Indicators

Inputs:

- Annual percentage public budget allocation to CRVS (per capita and as a percentage of total government expenditure)

Outputs:

- Number of countries with national CRVS plans based on comprehensive assessments
- Number of countries with functioning national CRVS committees high level and/or technical (a minimum, the representatives of the civil registration, health and statistics sectors)

Targets	2020	2025	2030
Births in given year are registered	80%	90%	100%
Children whose births are registered have been issued certificates	70%	85%	90%
Deaths in given year reported, registered, and certified with key characteristics	60%	70%	80%
Maternal and newborn deaths reported, registered, and investigated	80%	90%	100%
Deaths in children under 5 reported, disaggregated by age and sex	60%	70%	80%
Cause of deaths in hospitals reliably determined and officially certified	80%	90%	100%
Countries have community assessments of probable cause of death determined by verbal autopsies using international standards	50%	65%	80%

- Proportion of the population within a reasonable distance of civil registration points (<30km) or regularly serviced (monthly) through mobile civil registration
- Number of countries with legal framework for CRVS that meets international standards and recommendations
- Number of countries with integrated or linked CRVS, HMIS and national identification systems
- Percentage of hospitals with registrars in situ actively registering births and deaths
- Medically certified deaths as a percentage of total deaths and registered deaths annually
- Percentage of civil registration points that report late (i.e. after scheduled date)
- Percentage of all registration offices linked by computers to central level
- Time lag between data collection and publications (years)
- Ill-defined causes of death as a percentage of all deaths annually
- Functioning national mechanism for determining probable cause of death in the community
- Percentage of all deaths registered in the given year are accompanied by the issuance of an official death certificate that includes, at a minimum, the deceased's name, sex, and age
- Percentage of maternal and newborn deaths reported and investigated by a medical practitioner
- Reduction in maternal deaths reported nationally in line with post-MDG targets
- Percentage of deaths in children under five that are registered nationally (disaggregated by age, sex, residence (urban/rural) and administrative subdivision)
- Number of standard vital statistics tables provided to the UN Demographic Yearbook that use administrative data from civil registration as their primary source

Outcomes

- Percentage of births that are registered, nationally (disaggregated by sex, residence (urban/rural), and administrative subdivision)
- Percentage of all births registered are accompanied by the issuance of an official birth certificate that includes, at a minimum, the individual's name, sex, date and place of birth, and name of parent(s) where known
- Percentage of deaths that are registered nationally (disaggregated by age, sex, residence (urban/rural) and administrative subdivision)
- Percentage of registered deaths with causes of death medically certified and reported
- A completed comprehensive assessment of their CRVS system, performed according to WHO standards;
- A costed plan for strengthening the national CRVS plans, including an indication of the resources that will be committed by the government and by in-country development partners; and
- A national mechanism for ensuring cross-sectoral monitoring—for example a national coordinating

Implementation

As of May 2014, of the 75 priority COIA countries, 25 have national CRVS plans based on comprehensive assessments of their CRVS (including three as part of the regional PAHO CRVS framework) (**Annex 6**). These 25 countries are grouped as COIA I countries, the remaining as COIA II countries (**Figure 9**).

As there will be limited resources to support all 75 priority countries, those that are ready for international investment will be prioritized.

committee or oversight by the Office of the Prime Minister or cabinet.

Work in countries will continue in collaboration with regional and in-country partners. Once the international financing and governance mechanism is in place, agreement will be reached on how to approach countries for further investment and scaling up of their CRVS country plans. This will take into consideration the balance required between rapid scale up of CRVS, as required to deliver on the ambitious targets, and the need to ensure a comprehensive approach and the use of limited technical support in a few countries, to ensure a sustainable impact across the CRVS continuum. When the level of resources available internationally is clarified, a strategy for country engagement will be agreed upon with and communicated to national and regional stakeholders. It will be important to ensure that expectations regarding international support are in line with the available technical and financial resources.

Monitoring and evaluation

Monitoring

Regardless of the funding and governance model proposed, an oversight mechanism will be required to assess progress with the implementation of annual national plans and the use of resources. Each country proposal

will include a results framework for monitoring of the achievement of project objectives. A core set of indicators (inputs, outputs, and outcomes) will be incorporated into the results framework of country proposals, including the CRVS core indicators.

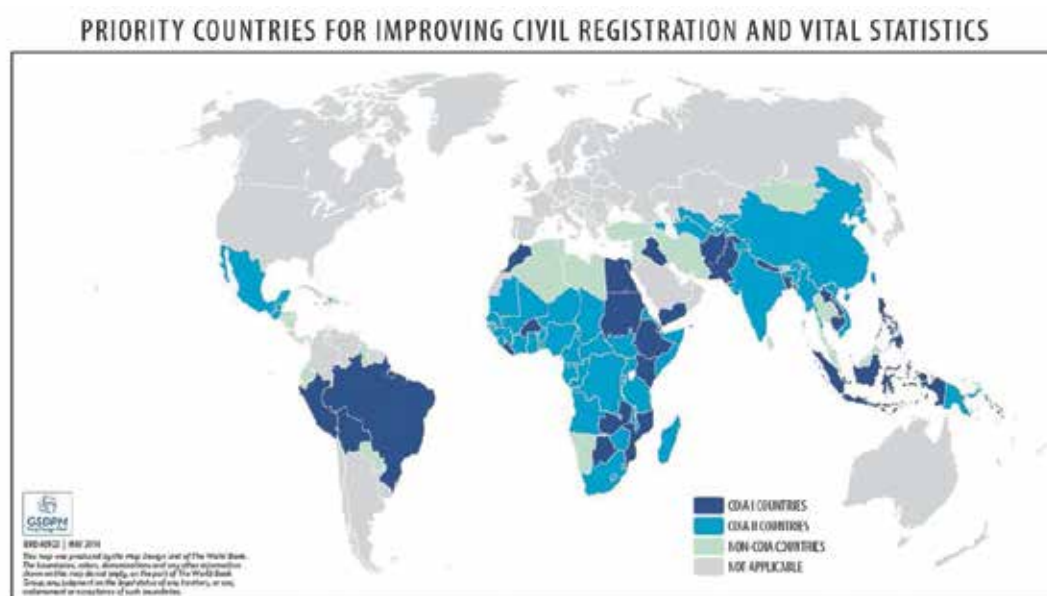
Evaluation

Each national CRVS plan and strategy will be expected to have a component focusing on monitoring and evaluation of progress, agreed in-country with the national inter-sectoral CRVS oversight committee. This will be complemented by a thematic or multi-country evaluation strategy for the scaling up plan that will be developed in close consultation with national and regional stakeholders, with technical support and guidance provided by impact evaluation experts.

Risk and risk mitigation

Stakeholders: The scaling up plan involves a complicated set of stakeholders in local communities (family members, health workers, local registration officials, village chiefs), across government, the private sector, and non-government partners working with local and national governments. There is a risk that the various disparate efforts to strengthen CRVS systems as a whole will con-

Figure 9 • Country readiness for implementation



tinue to be fragmented, made worse by different donors and private operators developing pilot projects, without consideration of the need for interoperability, common data standards, and the broader architectural design of the CRVS. The risks in local communities, in country, and internationally, will be mitigated by reinforcing the message that CRVS needs to be a holistic system if true value is to be achieved, and that incentives and funding opportunities must make this possible.

Implementation: The risks of not learning from the past, or from lessons learned in other countries, will be mitigated by an emphasis on implementation science, where the key questions to be resolved in the early implementation stages will be used to design operational research alongside implementation. In addition, inclusive oversight and coordination mechanisms at the global, regional, and national levels will help disseminate previous and ongoing lessons. Where there are discreet interventions, such as the application of new technology, experimental design will be used, in line with evaluation good practice.

Project:

- *Design:* The design of the global program has been undertaken in a collaborative way to mitigate the risks of fragmented efforts. In countries, the need for a single CRVS design will be ensured through support for single CRVS scaling up plans, developed using local evidence of what works in different contexts. Country investments will clarify the “quick

wins” that will give early momentum to the national CRVS investment plan, and will be prioritized to ensure investments are not so diluted that they are unable to show impact.

- *Social and environmental:* Increasing the need for certificates to access services may work as an incentive to register, but may also further exacerbate access issues for marginalized or vulnerable populations. There is also a risk that the benefits of the CRVS plan will largely fall to higher-income groups, exacerbating inequities in the distribution of benefits. To mitigate this risk, the national projects will include some minimal analysis of groups that are socially excluded or at a particular disadvantage, so that special initiatives can be targeted for them to ensure that they derive maximum benefit from the CRVS scale-up.
- *Program and donor:* The main risk in this area is the potential for fragmented funding to continue, thereby undermining the need for standards and interoperability. Extensive briefing and consultation will be aimed at improving understanding, and existing global and regional structures will be used to oversee investments.
- *Delivery and sustainability:* Regular reviews of progress against milestones and plans developed, and owned locally, will help keep support for national projects on track. The need for CRVS sustainability will also be addressed through careful consideration of long-term maintenance of staffing and infrastructure in the planning and funding of national efforts.

Annexes

Annex 1:	United Nations Definition of Vital Events
Annex 2:	Status of CRVS Maternal Mortality Estimate, Birth, Deaths, Quality of Cause-of-Death Reporting
Annex 3:	Country Case Studies
Annex 4:	National Statistical Capacity using World Bank Composite Indicator
Annex 5:	Legal and Regulatory Issues for CRVS
Annex 6:	Status of CRVS in 75 Countries Prioritized by the Commission on Information and Accountability
Annex 7:	Global CRVS Group Terms of Reference
Annex 8:	Provisional Costing of CRVS Scaling Up Plan
Annex 9:	Participants at Global CRVS Consultation in Addis Ababa April 28–29, 2014
Annex 10:	References



Annex 1. United Nations Definition of Vital Events

Live birth refers to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born (all live-born infants should be registered and counted as such, irrespective of gestational age or whether alive or dead at the time of registration, and if they die at any time following birth they should also be registered and counted as deaths).

Fetal death is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy. The death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Death is the permanent disappearance of all evidence of life at any time after live birth has taken place (post-natal cessation of vital functions without capability of resuscitation).

Marriage is the act, ceremony, or process by which the legal relationship of spouses is constituted. The legality of the union may be established by civil, religious, or other means as recognized by the laws of each country. Countries may wish to expand to cover civil unions if they are registered, in which case registered partnership usually refers to a legal construct, registered with the public authorities according to the laws of each country, which leads to legal conjugal obligations between two persons.

Divorce is a final legal dissolution of a marriage, that is, that separation of spouses, which confers on the parties the right to remarriage under civil, religious, and/or other provisions, according to the laws of each country. If a country recognizes registered partnerships, a legal dissolution of a registered partnership refers to the legal final dissolution of such a partnership, according to national laws, conferring the parties the right to re-enter into another partnership or marriage.

Annulment is the invalidation or voiding of a marriage by a competent authority, according to the laws of each country, which confers on the parties the status of never having been married to each other.

Judicial separation is the disunion of married persons, according to the laws of each country, without conferring on the parties the right to remarry.

Adoption is the legal and voluntary taking and treating of the child of other parents as one's own, in so far as provided by the laws of each country.

Legitimation is the formal investing of a person with the status and rights of a person born in wedlock, according to the laws of each country.

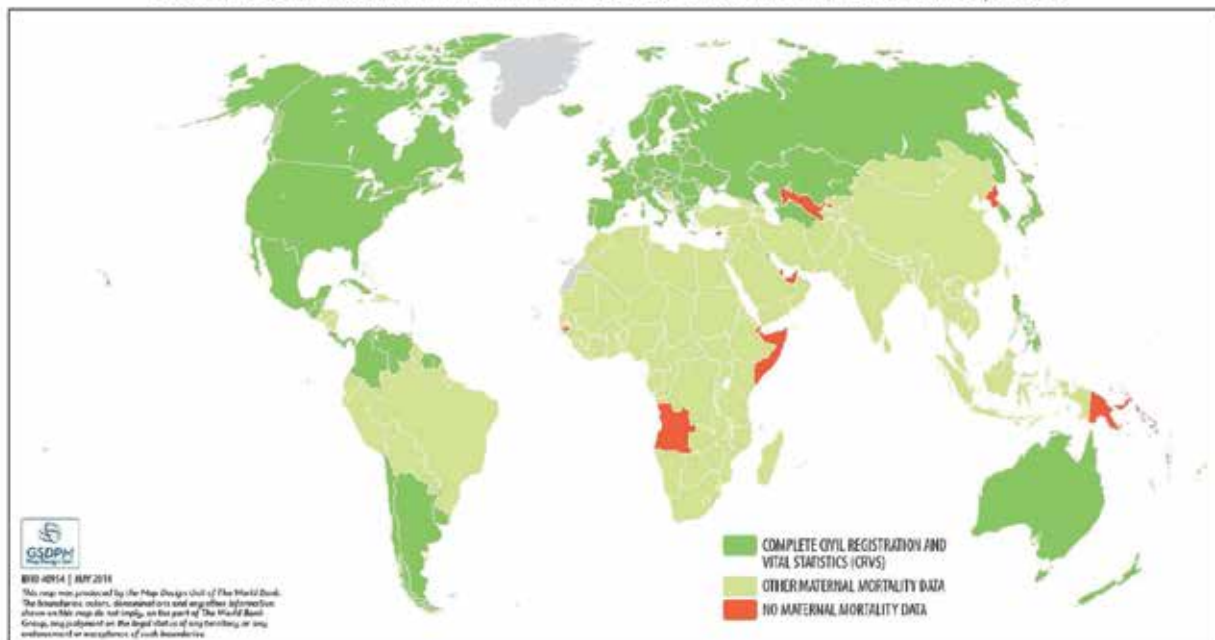
Recognition is the legal acknowledgment, either voluntarily or compulsorily, of the paternity of a child born out of wedlock.

Source: United Nations. "Principles and Recommendations for a Vital Statistics System." Revision 3

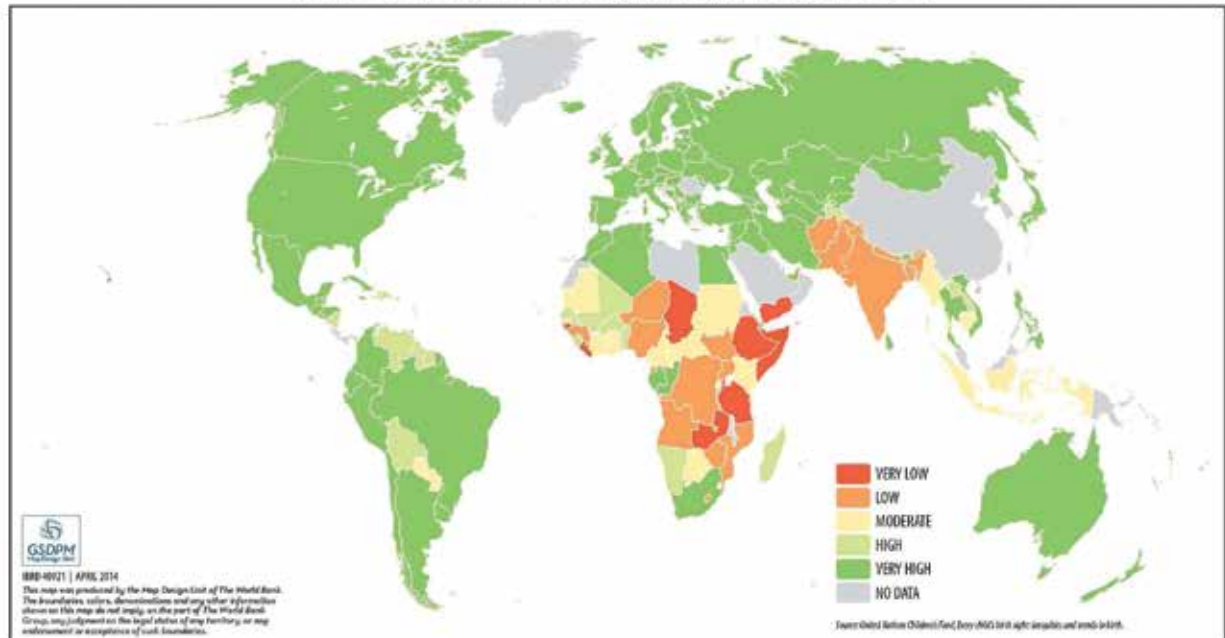


Annex 2. Status of CRVS Maternal Death Estimates, Birth, Deaths, Quality of Cause-of-Death Reporting

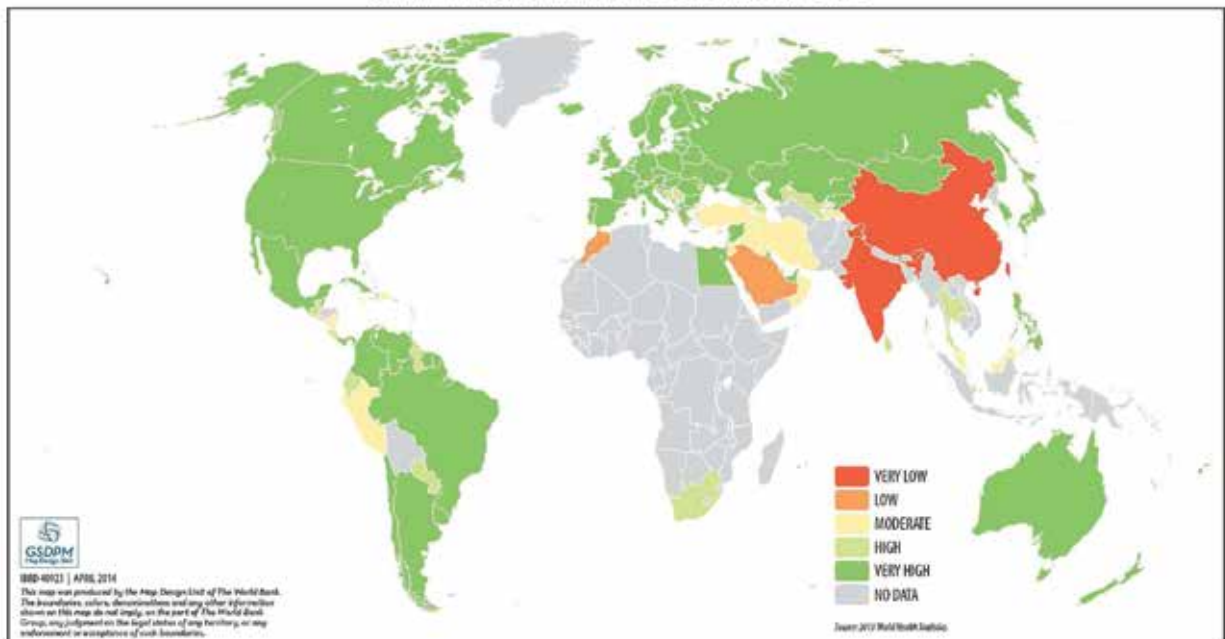
SOURCE OF DATA FOR MMEIG MATERNAL MORTALITY ESTIMATES, 2013



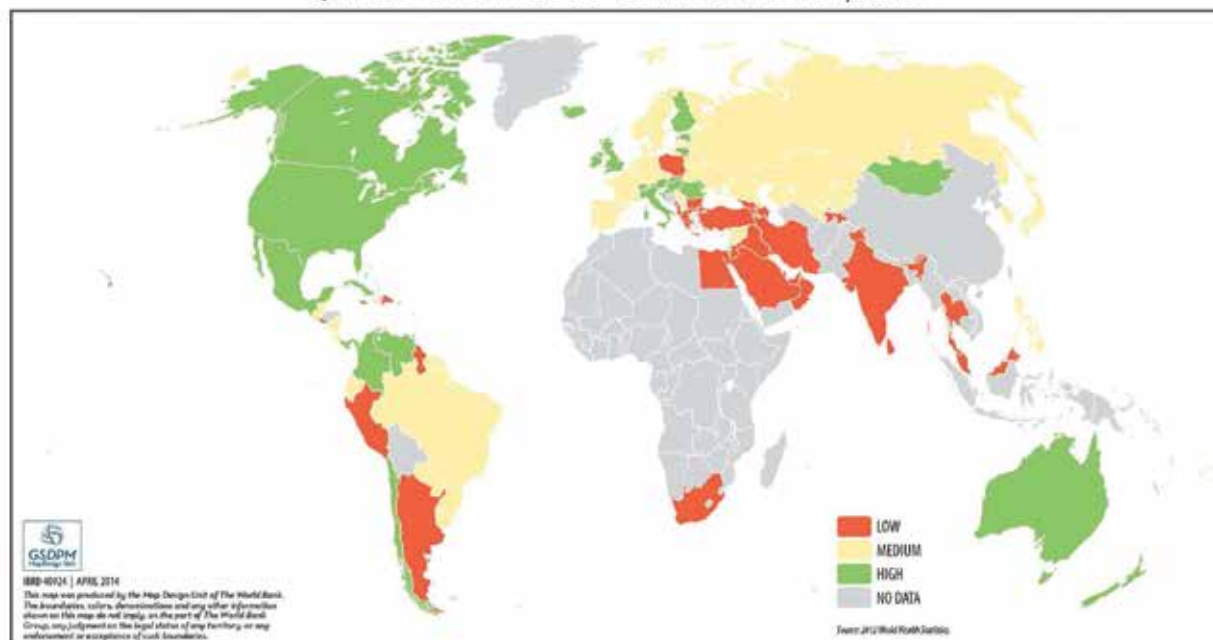
BIRTH REGISTRATION COVERAGE, DECEMBER 2013



DEATH REGISTRATION COVERAGE, 2013



QUALITY OF CAUSE-OF-DEATH STATISTICS, 2012





Annex 3. Country Case Studies

Box 1 Country investment plans: Quotes from country stakeholders

“...Very importantly, with the Philippines needing to urgently put itself on track to meet its target for maternal mortality, the government has intensified its commitment to improving the CRVS system. It simply must know who, where and why mothers are dying and children are being born.” (**Source:** Philippines 2014 “Strengthening Civil Registration and Vital Statistics: A Case Study of the Philippines”)

“For the future, Mozambique intends to continue expanding the coverage of CRVS. Previous positive interventions in the sector are to be replicated throughout the country. Regional and international experiences that showed best results are to be adapted to local circumstances. And a greater commitment to ICT will enable the country to create more flexible, reliable and efficient CRVS.” (**Source:** Mozambique 2014 ‘The Vital Statistics Journey: A Case Study of the Mozambique’)

“As a country implementing a civil registration and vital statistics (CRVS) system for the first time, the focus of action in the next few years is preparing the groundwork for full implementation. ... careful planning, designing and testing are being implemented in preparation for developing a national system” (**Source:** Ethiopia 2014 “Establishing Vital Events Registration and strengthening: A Case Study of Ethiopia”)

“...Digital registration provides an opportunity for less dependence on physical infrastructure and the opportunity to reach isolated populations.”

Source: Bangladesh 2014. “Registering millions: Celebrating the success and potential of Bangladesh’s Civil Registration and Vital Statistics System”.

Box 2 Lessons learned from establishing CRVS in Central and South America

- Digitalization of the information contributed to faster compilation of the information and better quality control (Bolivia).
- Improved civil registration directly influenced institutional social services (health, housing, education, and jobs) offered to special populations (Colombia).
- The importance of having a champion to lead the implementation of new legislation supporting CRVS (Ecuador).
- The importance of reinforcing civil registration within the country's borders (El Salvador).
- The need for and relevance of institutional coordination (Guatemala, Peru).
- The importance of nominating well-known community leaders, in particular in rural indigenous or Afro-descendent populations, for the mobile units. Coordination with local offices helped to gain acceptance for registration (Honduras).
- The need to improve civil registry offices with better technology to enhance the timeliness of service (Mexico and Panama).
- The importance of marketing campaigns to educate the public about the value of the civil registry (Paraguay).

Source: Consejo Latinoamericano de Registros Civiles, Identificación y Estadísticas Vitales (CLARCIÉV). Informe País. IX Encuentro del CLARCIÉV. 23–26 Octubre, 2012, Guayaquil, Ecuador.

Box 3 E-Governance and birth registration in Cape Verde



Although Cape Verde ratified the United Nations Convention on the Rights of the Child (dated 1989) in 1991, the country was still witnessing very low birth registration rates, with large variations among municipalities. As a result of a project aimed at modernizing the public administration, Cape Verde computerized the entire CRVS system during 2007 and 2008. This allowed not only biometric enrollment and massive registration of births, especially in the remote, previously inaccessible areas of the country, but also enabled the issuance of birth certificates online.

Some government agencies were concerned that the rapid pace of technological change might compromise the legal integrity of the existing system. Unanswered questions about privacy issues and the danger of security breaches persisted. The general public has also shown some concern about confidentiality issues. Major capacity-building and communication efforts were necessary to create an enabling environment to allow the system to grow as quickly and comprehensively as it has. Indeed, the consensus reached and the political support gained facilitated data collection and sharing among agencies. The results are encouraging: the national rates of unregistered children (aged 0 to 4 years) went from 39 percent in 2009 to 25 percent in 2010, and reached less than 10 percent in 2013. This is the highest birth registration level in West and Central Africa. The government is aiming for 100 percent birth registration in the years to come. For this purpose, mobile stations and enrollment kits have been installed in all major hospitals in the country and qualified personnel are continuously being trained. In addition, the government is adapting its legal and interoperability frameworks to allow for the development of new services and applications enabled by a well-functioning CRVS system, such as e-voting and e-taxes, increasing the overall value proposition of this public service.

Sources: African Knowledge for Development Networks. "Rapport Sur L'état D'avancement De La Stratégie De La République Du Cap Vert — Résultats Sur L'enregistrement À L'état Civil Et Les Statistiques Vitales." August, 2012. <http://knowledge.africa-devnet.org/group/crvs>
United Nations Children's Fund. A Passport to Protection: A guide to birth registration programming, UNICEF, New York, 2013.

Box 4 Traditional leaders and birth registration in Senegal



In Senegal, village chiefs are empowered by the State to register births. The Orange mobile birth registration solution was designed to make the most of existing methodologies and infrastructure, and the application was therefore tailored to meet the specific needs of village chiefs.

- The solution chosen by Orange was a Java applet. This was considered to be more appropriate than an SMS-based solution because it offered more wide-ranging customization options and a better overall customer experience.
- Mobile phones equipped with specific Java software have been distributed to 30 village chiefs. The chiefs are responsible for capturing information regarding births in their villages and transferring that information to the Senegal State Registrar. The registration office is equipped with a mobile phone in order to receive the information sent by village chiefs.
- Once received, this information is checked and the birth is registered both physically in the registry and electronically in a database. A registration number is then sent back to the village chief, who communicates it to the parents.
- This registration number means that the child has been registered. Using this number, parents can collect a birth certificate from the registration office at any time, provided they pay the corresponding fee.

Results became evident very quickly because of the inherent inefficiency of the legacy paper-based system. Nevertheless, some areas of improvement have been identified, such as interoperability. Having subscribers of any and all networks able to use the same, interoperable solution would allow for the creation of a unified database of birth registration events.

Source: GSMA Mobile Identity Team. "Mobile Birth Registration in Sub-Saharan Africa: A case study of Orange Senegal and Uganda Telecom solutions." GSMA, Uganda Telecom, 2013. <http://www.gsma.com/mobileidentity/wp-content/uploads/2013/05/Mobile-Birth-Registration-in-Sub-Saharan-Africa.pdf>.

Box 5 Online and offline mobile birth registration in Uganda



Before the mobile birth registration solution was launched in Uganda, it could take several months for a child to be registered. As the whole procedure was paper-based, there were several barriers to effective child birth registration:

- Distance and lack of communication channels
- Lack of awareness of the need to register births
- Administrative delays and process inefficiency
- Cost and poverty obstacles

In consultation with the development community, Uganda Telecom, the country's major mobile operator, decided to become involved in the development of the Ugandan nation and its people by rolling out a mobile birth registration pilot. As part of the pilot, hospitals were equipped with a 3G connection, whenever necessary, to access a web-based application to register births. The registration agents (i.e. village chiefs, regional administrators) were given SIM cards mapped to their names, so as to be able to send USSD codes to register births occurring locally. Uganda Telecom used USSD codes on mobile phones and a web-based application on computers. USSD may be considered less user-friendly than a customized Java applet, but has the advantage of being able to work on any telephone. Frequent communication was set with the Registration Office, which validated each birth and sent a certificate to be printed in the hospital or the district office for distribution to the family.

From a technical perspective, the solution is best adapted to developing countries' context. For instance, in areas where the Internet connection is unreliable, Uganda Telecom devised an offline version that allows registrars to register births in an area where there is no Internet and synchronize with the online version later. This offline solution is currently in the final stages of being developed and tested.

The results obtained have been very encouraging. Today, the company's birth registration initiative is seen as a key means of demonstrating that mobile operators could contribute to development and the welfare of citizens. The next step is to extend the service to other mobile networks by encouraging the interoperability of systems. UNICEF is currently developing a USSD menu for MTN, another mobile network operator, which will send birth notification information to the Mobile VRS server.

Source: GSMA Mobile Identity Team. "Mobile Birth Registration in Sub-Saharan Africa: A case study of Orange Senegal and Uganda Telecom solutions." GSMA, Uganda Telecom, 2013. <http://www.gsma.com/mobileidentity/wp-content/uploads/2013/05/Mobile-Birth-Registration-in-Sub-Saharan-Africa.pdf>.

Box 6 Modernizing the civil register in Albania



The year 2008 was a milestone for the Albanian national civil register project. By the end of that year, all residents were entered into a digital national register with an online connection to all civil status offices throughout the country. It is used as the basis for providing voters lists, biometric passports, and producing national identification cards. A subsequent project focused on resolving two remaining problems—scanning the archive register books and transferring the data from the National Civil Register to third parties.

By the end of 2010, the scanning project had completed the digitization of the register books and created an important archive that was accessible through all civil status offices across the country. The information is also accessible from the register to the national Institute of Statistics for producing register-based statistical information. One challenge involved the purchase of software; since this turned out not to be open source, there were limitations on how much the government and the Institute of Statistics could maintain and further develop it. Evidently, wider consultations at an earlier stage might have resolved this problem. Another lesson learned was the importance of involving more institutions from countries that have developed and maintained their own population registers so that they could provide advice based directly on their own experiences.

Source: Statistics Norway, 2012 "How to Modernize a Civil Registration System - The Case of Albania,." Documents 32/2012. https://www.ssb.no/a/english/publikasjoner/pdf/doc_201232_en/doc_201232_en.pdf.

Box 7 Community health workers and birth registration in Bangladesh



The aim is to register all pregnant women and their children in a unified electronic system. The core technological aspect of this is the use of mobile devices for such registration at the community level by household health workers. The project uses two existing codes for the National Identification (NID) and Birth Registration Number (BRN). If these are not available, a temporary tracking number is generated, thus imparting a degree of flexibility into the system.

In 2004, the Government of Bangladesh enacted a new Birth and Death Registration Act. The Act and subsequent amendments and rules state that presentation of a birth certificate is mandatory in order to open a bank account, export and import licenses, connect to utilities, register a car, and obtain a national identification card. To obtain a birth certificate, within 45 days of birth, parents must provide proof of birth. However, 80 percent of live births occur outside of hospital facilities. Community EPI workers check for the birth certificate on the first day of immunization and enter the unique Birth Registration Number onto the EPI card. This information is then sent online to the local registrar and on subsequent immunization days, parents submit the Birth Registration Certificate to the EPI workers.

Consultations were held with experts to develop minimum data sets for maternal, newborn, and child health (MNCH), and reviews were done of available MNCH-related instruments nationally and globally. Two sets of data were created: one for pregnant mothers and the other for children. This formed the foundation for work on digital design and software development aimed at collecting and processing data around individual name-based records, which would feed into the District Health Information Software 2 (DHIS2) being used by the Ministry of Health, Bangladesh and integrated with other ICT-based strengthening efforts by the Ministry of Health. One lesson learned was that the results may have been achieved more quickly had an existing open source application been used and customized for the specific requirements, rather than trying to build applications from scratch.

Source: WHO. "Move it: Report on Monitoring of Vital Events using Information Technology." WHO 2013. http://www.who.int/healthinfo/civil_registration/crvs_report_it_2013.pdf.

Box 8 Automated Verbal Autopsies in the community in South Africa, Malawi, India, and Nepal



For the first time the development of WHO Verbal Autopsy (VA) standards have coincided with the refinement of an automated method for the interpretation of VA data. This is based on a long-established series of VA interpretation models developed over the past decade. It uses Bayesian probabilistic methods for a totally consistent and comparable source of cause-of-death data. Research on implementing the automated VA system is underway in South Africa, Malawi, India, and Nepal, and is expanding to Bangladesh and other countries. Experience to date shows that it is quicker and cheaper than traditional VA methods, it improves data quality and completeness, it is easy to use and secure, it is liked by field-workers, and the use of phones does not seem to be a problem even in remote areas. Challenges remain however, in remaining consistency with WHO questions in particular when translated versions are prepared. There is a need to have strong, well maintained trainer-of-trainer programs and funds secured to ensure long term maintenance and sustainability of the software.

Source: Measure Evaluation. "SAVVY: Sample Vital Registration with Verbal Autopsy." <http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/savvy>.

Box 9 Improving hospital mortality data in Mozambique



In Mozambique, prior to 2006, no routine data were available on cause of death and morbidity, and there were no representative civil registration data. In 2006, the Ministry of Health formally adopted the decision to use ICD-10 and standard classifications through the creation of a national committee for the implementation of standard classifications. A pilot was conducted in 2007 in one hospital using shortlists based on aggregated data, and in 2008, mortality registers were introduced. The mortality register allowed for the first national mortality analysis based on routinely collected data, although initially restricted to a hospital setting. There were further reforms initiated in the mortality system through the revision of the death certificate, introduced nationwide in 2009, and the introduction of SIS-ROH (Sistema de Informacao de Saude – Registo Obitois Hospitalares), software designed to enable individual-based data management, including demographic data and data on hospitalization and cause of death.

Building upon these ongoing processes of reform, in 2011, a project was initiated on the modernization of the national vital statistics system, which at that time was not implemented nationally and only covered deaths in hospitals. Capitalizing on existing initiatives was an important factor in the project's success. An application was introduced that captured hospital deaths and permitted expansion of the system to allow extra-hospital deaths to be registered (that is, deaths registered by police stations and from declarations recorded by local community authorities). A later version of the application will be web-enabled and linked to scaling efforts and consolidation of data into a single database. The SIS-ROH software has improved with regular use and feedback from the users in selected hospitals. Simultaneously, there have been ongoing efforts to develop the capacity of nodal provincial staff, in both information technology and the use of SIS-ROH, so that they are able to provide technical support on the software to end users. It is hoped that the interest the project has generated will lead to a future national-level initiative for the computerization CRVS systems.

Source: WHO. "Move it: Report on Monitoring of Vital Events using Information Technology." WHO 2013. http://www.who.int/healthinfo/civil_registration/crvs_report_it_2013.pdf.

Box 10 Civil register links with maternal and child events in Philippines



The project was collaboration between the National Statistical Office (NSO) and the Department of Health and involved linking two existing monitoring tools: the Barangay Civil Registration System (BCRS) and Watching Over Mothers and Babies (WOMB). The WOMB system is an ongoing project of the department to enable registration and processing of maternal and child vital events, and for the generation and utilization of vital statistics at the local levels. The BCRS was developed by the NSO for use at the Local Government Units (LGUs) to support the process of civil registration by the local municipality. The BCRS also seeks to establish a database of social and demographic profiles of Barangay residents.

The project supported the gathering of data on demographic profiles for all residents, including vital registration status. This involved supporting technical advances on BCRS, redesigning the data-gathering tools to facilitate data processing, and creating an online data-base at the national level for hosting authorized BCRS implementers. The project also aimed to increase awareness among the Barangay constituents of the importance of civil registration, as a part of their basic human rights, ensure interoperability between WOMB and BCRS, and improve quality and completeness of BCRS data. It also monitored the use of data with a view to improving the utilization of vital statistics for public health action. The project also performed an analysis of why births were not being registered: reasons varied from negligence to lack of awareness, with registration not being seen as part of the culture. Similar analyses were carried out of the status of marriage and death registrations and reasons for their non-registration.

Source: WHO. "Move it: Report on Monitoring of Vital Events using Information Technology." WHO 2013. http://www.who.int/healthinfo/civil_registration/crvs_report_it_2013.pdf.

Box 11 Strengthening vital statistics through inter-institutional efforts in Nicaragua



Nicaragua's assessment of the vital statistics system drew attention to its problems, such as a weak legal framework, poor inter-institutional coordination, a lack of access to and an insufficient number of civil registry offices, difficult connections due to transportation difficulties, the extremely low quality of data, and a lack of awareness of both the system and the importance of vital statistics. During the period May 2011 to September 2013, Nicaragua started a dialogue among the institutions involved in vital statistics registration in the country, with the Ministry of Health leading the process of integration to facilitate the connection and improve the timely reporting of births and deaths.

In addition, authorities seized the opportunity to draft and place before the National Assembly legislation to create a legal framework for the civil registration of births and deaths. To reduce sub-registration, the institutions jointly embraced public education radio campaigns implemented with 43 radio stations in three languages: Spanish, English, and Miskitu. This activity facilitated registration in 118 communities, achieving a total of 253 children under 1, 4,451 children under 5 years of age, and 4,704 youth. In the same period, it was possible to carry out 19 workshops targeting municipal personnel and midwives, train 435 doctors on ICI-10 data, and review perinatal records on selected sites. Today, with a national legal framework in place and strong inter-institutional relations and commitment, resolution of Nicaragua's remaining challenges seems more feasible.

Source: World Bank. Trust Fund for Statistical Capacity Building Program 2013. <http://www.worldbank.org/en/data/statistical-capacity-building/trust-fund-for-statistical-capacity-building>.



Annex 4. National Statistical Capacity using World Bank Composite Indicator

Composite indicator of three dimensions: statistical methodology; source data; and periodicity and timeliness

Country	1999	2009	Change	Country	1999	2009	Change
Afghanistan	11	33	+22	Lao PDR	46	61	+15
Angola	31	34	+3	Lesotho	57	60	+3
Azerbaijan	46	77	+31	Liberia	13	32	19
Bangladesh	56	65	+9	Madagascar	59	61	+2
Benin	47	48	+1	Malawi	54	64	+10
Bolivia	63	70	+7	Mali	46	61	+15
Botswana	51	47	-4	Mauritania	50	60	+10
Brazil	78	77	-1	Mexico	68	81	+13
Burkina Faso	62	58	-4	Morocco	69	77	+8
Burundi	29	56	+27	Mozambique	62	62	0
Cambodia	43	72	+29	Myanmar	40	42	+2
Cameroon	36	64	+28	Nepal	51	72	+21
Central African Republic	43	46	+3	Niger	57	56	-1
Chad	52	49	-3	Nigeria	47	57	+10
China	61	54	-7	Pakistan	62	82	+20
Comoros	34	49	+15	Papua New Guinea	44	43	-1
Congo, Dem. Rep.	34	29	-5	Peru	75	81	+6
Congo, Rep.	26	54	+28	Philippines	66	86	+20
Côte d'Ivoire	63	62	-1	Rwanda	42	66	+24
Djibouti	n/a	35	n/a	Sao Tome and Principe	n/a	55	n/a
DPR Korea	n/a	n/a	n/a	Senegal	67	67	0
Egypt, Arab Rep.	74	83	+9	Sierra Leone	24	49	+25
Equatorial Guinea	n/a	n/a	n/a	Solomon Islands	n/a	30	n/a
Eritrea	33	29	-4	Somalia	14	23	+9
Ethiopia	57	78	+21	South Africa	61	78	+17
Gabon	33	38	+5	South Sudan	n/a	n/a	n/a
Gambia	39	62	+23	Sudan	32	43	+11
Ghana	48	59	+11	Swaziland	43	64	+21
Guatemala	44	84	+40	Tajikistan	44	77	+33

(continued on next page)

(continued)

Composite indicator of three dimensions: statistical methodology; source data; and periodicity and timeliness

Country	1999	2009	Change	Country	1999	2009	Change
Guinea	64	50	–14	Tanzania	63	59	–4
Guinea-Bissau	43	39	–4	Togo	47	53	+6
Haiti	32	41	+9	Turkmenistan	36	43	+7
India	74	79	+5	Uganda	55	61	+6
Indonesia	75	82	+7	Uzbekistan	36	64	+28
Iraq	21	37	+16	Vietnam	50	61	+11
Kenya	61	54	–7	Yemen, Rep	41	47	+6
Kyrgyz Republic	58	89	+31	Zambia	76	59	–17
				Zimbabwe	66	46	–20

Source: World Bank Bulletin Board on Statistical Capacity. <http://data.worldbank.org/data-catalog/bulletin-board-on-statistical-capacity>.

Annex 5. Legal and Regulatory Issues for CRVS

CRVS legal and regulatory challenges

Sound public administration, the delivery of core government services, and the smooth functioning of commerce all depend on robust means of personal identification. Government agencies also require accurate and reliable vital statistics (population and health measures, among others) in order to deliver services efficiently and effectively and to plan for the future. Sharing of personal information between government agencies is desirable for a range of reasons. Information sharing can help the government provide better and more efficient services through coordinated service delivery, detect wrongdoing, or take joint action against social problems. Civil—or public—registers are often open to the public for many of the same reasons, including to improve economic efficiency and to promote transparency and accountability, among others. However, the nature and range of information collected under a civil registry—or personal identification—scheme may raise concerns about the potential for abuse if strong privacy protections are not included as part of the legal and regulatory enabling environment. The information on civil registers may include personal information that is sensitive or which could lead to harm if it is disclosed or combined with other personal data. There is a tension between freedom of information, transparency, and government accountability, on one hand, and the need to protect personal information on the other.

The privacy and related issues regarding the collection and use of personal information on civil registers may be grouped into three broad categories: (i) risks of injustice, including incorrect or inaccurate data, which may lead

to instances of mistaken identity or unjust treatment; (ii) risks of unjust inferences caused by collecting or linking data originally intended for different purposes; and (iii) risks of “function creep,” where data collected for one purpose is gradually used for others to which the individual concerned has not consented. Modern technology may accentuate or help agencies manage these risks, depending upon what technology is used and how it is deployed. Unlike with paper-based records, digitized information can be stored, sorted, manipulated, and redistributed at high speeds and minimal cost. Technology now makes it possible to combine information held across multiple databases, allowing for individual profiling among other uses. The move toward the use of biometric features also raises acute privacy issues. The inclusion of DNA or fingerprint information, for example, as part of a civil registry or identification scheme requires specific regulation under the primary enabling law.

A robust legal framework should promote the free flow of information, balanced against the need to protect individual privacy, personal information, and other public interests governing access to public registers. Some countries have established a single public agency that is responsible for administering privacy and freedom of information laws—in effect an entire government clearing house for complaints, oversight, advice, and reporting for freedom of information and privacy matters. In other cases, countries have chosen to build on existing institutions and agencies that are involved in collecting, using, and disseminating data. Under either model, the imperative is that all public agencies should be required to deal with personal information in a manner that protects personal privacy. These obligations may be specified in individual (sector-specific) laws or by way of a single overarching

freedom of information and privacy law, depending on local issues. Where multiple agencies are involved, steps should be taken to reduce the potential for regulatory inconsistency and overlap, which can lead to uncertainty and increase compliance costs for the government, individuals, and businesses.

Protecting individual privacy rights

While public records often comprise generic information such as name, address, birth date, etc., privacy risks are still present. Harm may be seen in the so-called “aggregation effect”—in combination, otherwise innocuous information may paint a portrait of personalities, activities, and individual attributes—greatly increasing an individual’s vulnerability to dangers such as identity fraud, stalking, or harassment. In addition, to the extent that a civil registry, public database, or document may evolve into an identity system or gather intimate personal information (e.g., personal health data), stringent protections are needed to protect against the potential for abuse. Civil registers may also include information that creates special risks to individual dignity in certain circumstances. For example, some causes of death may result in embarrassment if they are included on a register of deaths. In other cases, there may be safety concerns about personal identifying information, including names and addresses, being publicly available, including in the context of domestic violence protection orders, stalking, and harassment, or identity theft.

Citizens are accustomed to filling in forms that ask for their personal information, frequently for inclusion on public registers. It is usually given for specific purposes (recording births and deaths, recording marriages and divorces, voter registration, buying and selling land, motor vehicle licensing, company registration, buying/selling shares, etc.). Often, there is no choice but to provide the information—the registration may be compulsory (in the case of vital statistics, for example, births and deaths) or if the person wants or needs to carry out a certain activity. While it is often assumed that the information is used only for purposes relevant to its collection, this may not be the practice. Revelations that personal data has been misused or used in ways not originally expected or anticipated can lead to public discord or undermine confidence in the registration process. Trust that the government will

deal responsibly with personal information is an important factor in ensuring proper administration and user take up of the scheme. If the government allows, or does not restrict, the use of the information for other purposes, citizens may be harmed or feel aggrieved by the loss of privacy. This is damaging both to good public administration and the ability of the government to promote the use of the civil register. If citizens no longer trust the government to keep personal information confidential, it may lead to information being withheld, or wrong or inaccurate information being supplied.

Legislation should provide for the protection of personal information and privacy, including data security. Measures to ensure confidentiality and protect against misuse are critical, among other reasons, to promote trust and confidence in the system—maximizing the likelihood that the public will support and comply with obligations to provide complete and accurate information in a timely manner. The law should contain privacy protections that reflect the following basic principles:

- *Collect only what is necessary for the purpose*—an effective way of promoting good privacy practice is to collect only the minimum amount of personal information that is necessary to meet a clearly defined and articulated purpose;
- *Ensure individual control*—individuals should have control over how their personal information is managed and used;
- *Use or disclosure for purpose*—the registry should minimize the risk of individuals being surprised as to how their personal information is managed, including by ensuring personal information is generally only used or disclosed for the purpose for which it was collected;
- *Ensure transparency*—a high degree of transparency should accompany both the implementation and operation of the registry, including openness on how the system handles personal information and permitting individuals access to their personal information and, where necessary, the ability to challenge and correct any inaccuracies; and
- *Secure handling of personal information*—an element of enhancing privacy will be measures that improve how securely personal information can be handled, whether while in storage, during transmission, or during use.

Legal reform and development for CRVS

The foundational rules for a robust and sustainable civil registration and vital statistics system should be established in primary legislation. Legislation is essential to ensure registration is complete and accurate, to provide for compulsory registration and impose deadlines, and to permit the imposition of sanctions for non-compliance. Legislation may also be required to provide for the public funding that is needed to establish and operate a civil registration system. Government policy is the starting point for the development of any new legislation. The process of converting policy into legislation is complex and often time consuming. It requires political decision making on questions of policy and technical expertise to lead the consultation process and to draft the legislation. Among other matters, it is necessary to ensure that any new law is consistent with any applicable constitutional or “superior” legislative provisions, the existing statute book, and applicable international law. A range of issues must be considered, including the following:

- the relationship between primary legislation and subordinate regulations and rules;
- institutional arrangements, providing for clear functions and powers for the government agencies involved;
- monitoring investigative and enforcement powers;
- funding mechanisms;
- accountability and oversight mechanisms, such as appeal and for administrative review; and
- transitional and savings arrangements.

Subordinate laws may deal with a broad range of topics, including technical rules and prescribing general forms. Depending on the jurisdiction, subordinate laws may also proscribe certain conduct and prescribe fees and penalties, although the permissible usage of subordinate instruments—rules and regulations—varies. In every case, however, it is important to consider whether the contemplated subject matter is appropriate for inclusion in a subordinate instrument, whether it is authorized by the empowering statute and whether its promulgation satisfies any statutory conditions precedent. While regulations and rules are attractive because they may be made quickly under delegated authority without submission to the law-making body, for these same reasons, they also pro-

vide less certainty. It is important therefore that rules for the protection of individual privacy should be provided for in primary legislation and not by way of subordinate instrument. The UN Handbook, *Civil Registration and Vital Statistics Systems: Preparation of a Legal Framework*, No. 71 (1989), includes a “model civil registration law” which is intended to assist with the development and reform of legislation for civil registration and vital statistics. Its guidance may be summarized as follows:

General provisions

- Defines the vital events covered by the law (live births, marriages, deaths, divorces, stillbirths and fetal deaths, adoptions, etc.).
- Defines the jurisdiction and territorial application of the law (and prescribed under a chapter dealing with the sphere of competence of the civil register).
- Provides for compulsory registration and penalties for non-compliance, deadlines for registration, who must register the event, and documentary evidence needed for registration.
- Prescribes the legal effect of registration and official documents.
- Describes statistical obligations and mandates certain collaborations among government agencies.
- Prescribes protections for individual privacy and confidentiality.

Registration infrastructure

- Prescribes the structure, administrative organization, and functions of the civil registration service, including the appointment process and authority of registrars, and intra-governmental coordination obligations.

Entries in the civil registers

- Prescribes the process for entering all vital events into the registers, the forms to be used, and the provision of official certificates.

Registration of births, marriages, divorces, and deaths

- Details how particular life events should be registered, including what characteristics should be included.

- Provides instructions on handling information, including storage and dissemination for statistical reporting.
- Provides for the verification of all evidence to be included on official certificates.
- Describes how to issue various permits.

Amendment of registration records

- Provides a mechanism for correcting errors, including errors that may be corrected administratively and errors that may be corrected only with a court order.

Proof of registration

- Provides for the preparation of certified copies of registration papers and access to information.

Statistical reports

- Provides for the preparation of statistical reports, data management, error checking, and dissemination.

Inspection and penalties

- Sets forth provisions to ensure transparency and accountability of the system.

Funding arrangements

- Prescribes for the payment of service fees for certain registry services. Primary registry activities are provided free of charge (promoting the universality of the system).

The WHO assessment framework, “*Improving the Quality and Use of Birth, Death and Cause-of-Death Information: Guidance for a Standards-Based Review of Country Practices*,” may also be referred to for guidance on the legal and regulatory framework necessary to support the introduction and operation of a robust civil registration and vital statistics system. Additional guidance may also be found from the following international instruments (non-exhaustive):

CRVS

- Universal Declaration of Human Rights (1948)
- Declaration of the Rights of the Child (1959)

- Article 24, International Covenant on Civil and Political Rights (1966)
- Article 12(2), International Covenant on Economic, Social and Cultural Rights (1966)
- United Nations Human Rights Council Resolution, “Birth registration and the right of everyone to recognition everywhere as a person before the law” (2012)

Protection of individual privacy rights

- Recommendation of the Council Concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data (September 23, 1980)
- OECD Guidelines for the Security of Information Systems and Networks: Towards a Culture of Security (adopted as a Recommendation of the OECD Council at its 1037th Session on July 25, 2002)
- APEC Information Privacy Framework (endorsed by APEC Ministers in Chile, November 2004)
- Article 12, Universal Declaration of Human Rights 1948
- Article 17, International Covenant on Civil and Political Rights of December 16, 1966; entry into force March 23, 1976)
- Guidelines concerning computerized personal data files (A/RES/45/95)
- Article 8, Charter of Fundamental Rights (as signed and proclaimed by the Presidents of the European Parliament, the Council, and the Commission at the European Council meeting in Nice on December 7, 2000)
- EC Directive 95/46/EC of the European Parliament and of the Council of October 24, 1995 (the Data Protection Directive)
- EC Directive 2002/58/EC on privacy and electronic communications of July 12, 2002
- EC Regulation 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data of December 18, 2000
- European Council Framework Decision 2008/977/JHA of November 27, 2008 on the protection of personal data processed in the framework of police and judicial cooperation in criminal matters

Annex 6. Status of CRVS in 75 Countries Prioritized by the Commission on Information and Accountability

Country	COIA country	CRVS Rapid Assessment	CRVS Comprehensive Assessment	CRVS Strategic Plan / Committee	CRVS Political Commitment
Afghanistan	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Angola	Yes		Planning assessment		Civil Registration Minister – Health Ministers in 2014
Azerbaijan	Yes	Yes			
Bangladesh	Yes	Yes	Completed	National CRVS Plan and Costed investment Plan	Likely in 2014 through UNESCAP process
Benin	Yes				Civil Registration Minister – Health Ministers in 2014
Bolivia	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
Botswana	Yes		First completed and new one underway	National CRVS Plan	Civil Registration Minister – Health Ministers in 2014
Brazil	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
Burkina Faso	Yes		Completed	National CRVS Plan and Committee	Civil Registration Minister – Health Ministers in 2014
Burundi	Yes	Yes	Planning assessment		Civil Registration Minister – Health Ministers in 2014
Cambodia	Yes	Yes	Completed	National CRVS Plan, National CRVS Steering Committee	Likely in 2014 through UNESCAP process
Cameroon	Yes				Civil Registration Minister – Health Ministers in 2014
Central African Republic	Yes				Civil Registration Minister – Health Ministers in 2014
Chad	Yes				Civil Registration Minister – Health Ministers in 2014
China	Yes	Yes	Planned in 1–3 provinces		Likely in 2014 through UNESCAP process
Comoros	Yes	Yes			Civil Registration Minister – Health Ministers in 2014

(continued on next page)

(continued)

Country	COIA country	CRVS Rapid Assessment	CRVS Comprehensive Assessment	CRVS Strategic Plan / Committee	CRVS Political Commitment
Congo, Rep.	Yes				Civil Registration Minister – Health Ministers in 2014
Côte d'Ivoire	Yes				Civil Registration Minister – Health Ministers in 2014
DPR Korea	Yes	Yes		underway	Likely in 2014 through UNESCAP process
DPR Congo	Yes	Yes			Civil Registration Minister – Health Ministers in 2014
Djibouti	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Egypt	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Equatorial Guinea	Yes				Civil Registration Minister – Health Ministers in 2014
Eritrea	Yes		Planning assessment		Civil Registration Minister – Health Ministers in 2014
Ethiopia	Yes	Yes	Completed	National CRVS Plan, National Committee and Costed investment Plan	Civil Registration Minister – Health Ministers in 2014
Gabon	Yes				Civil Registration Minister – Health Ministers in 2014
Gambia	Yes				Civil Registration Minister – Health Ministers in 2014
Ghana	Yes		Underway		Civil Registration Minister – Health Ministers in 2014
Guatemala	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
Guinea	Yes				Civil Registration Minister – Health Ministers in 2014
Guinea-Bissau	Yes	Yes			Civil Registration Minister – Health Ministers in 2014
Haiti	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
India	Yes	Yes			Likely in 2014 through UNESCAP process
Indonesia	Yes	Yes	Completed	National CRVS Committee	Likely in 2014 through UNESCAP process
Iraq	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Kenya	Yes		Completed	National CRVS Plan	Civil Registration Minister – Health Ministers in 2014
Kyrgyz Republic	Yes	Yes	Completed		
Lao PDR	Yes	Yes	Completed	National CRVS Plan, National CRVS Committee	Likely in 2014 through UNESCAP process

(continued on next page)

(continued)

Country	COIA country	CRVS Rapid Assessment	CRVS Comprehensive Assessment	CRVS Strategic Plan / Committee	CRVS Political Commitment
Lesotho	Yes		Planning assessment		Civil Registration Minister – Health Ministers in 2014
Liberia	Yes		Completed	National CRVS Plan, National CRVS Committee	Civil Registration Minister – Health Ministers in 2014
Madagascar	Yes	Yes			Civil Registration Minister – Health Ministers in 2014
Malawi	Yes		Planning assessment		Civil Registration Minister – Health Ministers in 2014
Mali	Yes				Civil Registration Minister – Health Ministers in 2014
Mauritania	Yes				Civil Registration Minister – Health Ministers in 2014
Mauritius	Yes		Functioning system		Civil Registration Minister – Health Ministers in 2014
Mexico	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
Morocco	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Mozambique	Yes		Completed	Underway, Costed Indicative Investment Plan	Civil Registration Minister – Health Ministers in 2014
Myanmar	Yes	Yes	Planned		Likely in 2014 through UNESCAP process
Nepal	Yes	Yes	Completed	National CRVS Committee	Likely in 2014 through UNESCAP process
Niger	Yes				Civil Registration Minister – Health Ministers in 2014
Nigeria	Yes				Civil Registration Minister – Health Ministers in 2014
Pakistan	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister; The Federal Planning commission is the CRVS Champion
Peru	Yes			Country works within PAHO Regional Committee framework since 2008	Health Ministers through PAHO Regional Committee
Philippines	Yes	Yes	Completed	National Plan, committee and Costed investment Plan	Likely in 2014 through UNESCAP process
Papua New Guinea	Yes	No	Planned for 2014	Commitment to develop plan and committee is firm	Endorsed at Pacific Health Ministers Meeting 2013
Rwanda	Yes	Yes	Planning		Civil Registration Minister – Health Ministers in 2014
São Tomé and Príncipe	Yes				Civil Registration Minister – Health Ministers in 2014
Senegal	Yes	Yes	Underway		Civil Registration Minister – Health Ministers in 2014
Sierra Leone	Yes	Yes			Civil Registration Minister – Health Ministers in 2014

(continued on next page)

(continued)

Country	COIA country	CRVS Rapid Assessment	CRVS Comprehensive Assessment	CRVS Strategic Plan / Committee	CRVS Political Commitment
Solomon Islands	Yes	Yes	Completed	National CRVS Plan and Committee	Ministers – Health and Finance
Somalia	Yes	Yes	Underway		CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
South Africa	Yes	Yes	Functioning System		Civil Registration Minister – Health Ministers in 2014
South Sudan	Yes		Planned		Civil Registration Minister – Health Ministers in 2014
Sudan	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Swaziland	Yes		Underway	Committee	Civil Registration Minister – Health Ministers in 2014
Tajikistan	Yes	Yes	Planned for 2014		
Togo	Yes				Civil Registration Minister – Health Ministers in 2014
Turkmenistan	Yes	Yes			
Uganda	Yes		Planned		Civil Registration Minister – Health Ministers in 2014
Uzbekistan	Yes				
Tanzania	Yes		Underway	Committee	Civil Registration Minister – Health Ministers in 2014
Viet Nam	Yes	Yes	Planned		Likely in 2014 through UNESCAP process
Yemen	Yes	Yes	Completed	National CRVS Plan	CRVS Regional Strategy endorsed by Eastern Mediterranean Regional Committee – Health Minister
Zambia	Yes	Yes	Completed	National CRVS Plan and Committee	Civil Registration Minister – Health Ministers in 2014
Zimbabwe	Yes				Civil Registration Minister – Health Ministers in 2014

Annex 7. Global CRVS Group

Terms of Reference

Draft April 2014

Background

The Global Civil Registration and Vital Statistics Group is a group coming together to forge stronger alliances among key stakeholders in the area of civil registration and vital statistics (CRVS) to enhance the effectiveness and sustainability of the support that they provide to countries (<http://unstats.un.org/unsd/demographic/CRVS/Global-CRVS.html>). With growing recognition of the value of CRVS to human rights, good governance, and development planning, monitoring and evaluation, there has been renewed interest in strengthening national CRVS systems. CRVS is also emerging as an essential underpinning of the post-2015 development agenda.

At the regional and global levels, many efforts continue to be made to advocate and support the improvement of CRVS systems. Intergovernmental regional organizations and development banks have been active in raising awareness and urging governments to commit to the issue through the adoption of declarations or resolutions. Individual UN agencies and other international stakeholders have been working toward improvement of CRVS, however, their efforts were largely uncoordinated and posed challenges for improvement of CRVS in a holistic and integrated manner. Hence, close communication and coordination of activities among stakeholders at the global level are key to the systems' improvement. The global community must act together by aligning its actions in providing sustainable support for regions and countries to achieve well-functioning CRVS systems.

The formation of a global CRVS group was discussed on March 3, 2014 in New York at a UN Statistical Commission side event on global partners for CRVS. The initial meeting brought together key regional and international stakeholders all active in the field of CRVS. The meeting agreed on the need to establish a global mechanism whereby members can make positive contributions to the improvement of CRVS, in light of their respective areas of expertise and concern.

Objectives

The main objectives of the group are to:

- Converge strategic priorities and mandates toward a holistic approach to CRVS, creating an enabling environment for greater collaboration at the national, regional, and global levels, and delivering as one
- Exchange information and coordinate global activities among members to complement CRVS momentum at the regional and national levels
- Explore and leverage additional opportunities to accelerate the improvement of CRVS systems
- Advocate for the importance of CRVS as a development imperative

Tasks/Activities

The tasks and activities of this group will focus on combining efforts and work toward global improvements in CRVS. Specific tasks are as follows:

- I. Review and update the activities and programs to improve CRVS among members
- II. Identify opportunities, challenges, and emerging needs and share best practices, innovations, and research to advance CRVS in countries
- III. Create a knowledge platform for sharing information, research, best practices, and lessons learned
- IV. Form task teams to address specific issues related to CRVS, as necessary

Membership

Members are international and regional intergovernmental organizations, committed to the advancement of CRVS programs, represented by senior staff. Members need to be active in the deliberations and activities of the group. The participation of relevant INGOs and other stakeholders may be invited to meetings of the group.

Organization

Secretariat: the United Nations Statistics Division (UNSD) serves as the Secretariat of the Group.

Chair: The chair will be elected for one year and will rotate among member organizations. The chair works closely with UNSD in planning and implementing activities.

Organization of work

The group will work through regular meetings and exchanges of emails. An annual meeting will take place in New York, close to the dates of the meeting of the United Nations Statistical Commission (usually in early March). Additional meetings can be convened on an as-needed basis, to be timed immediately following the major global/regional meeting on CRVS. UNSD will maintain the website, where the information on the group's activities can be shared and updated.

Expected duration

The work of the Group is ongoing. This TOR will be reviewed as needed.

Annex 8. Costing of CRVS Scaling Up Plan

Objectives

This exercise aims to estimate the additional financial resources needed to reach the implementation plan targets with the overall goal of *universal civil registration of births, deaths, and other vital events, and access to legal proof of registration for all individuals by 2030*. It also provides order-of-magnitude estimates of the incremental costs from 2015 to 2024 to stimulate discussion and planning of support for national implementation plans. This work, which is ongoing by the World Bank and partners, builds on the country-specific costing exercises and the cost structure developed by the Health Metrics Network.³

Methodology

Two approaches were employed: a “bottom-up” approach and a “top down” approach. The approach used for the bottom-up assessment of costs was to estimate the additional investment required to fulfill the country operational plans for developing the CRVS system in five countries where data was available—Bangladesh, Ethiopia, Kenya, Mozambique, and the Philippines. In the top-down approach, aggregated and per capita costs per activity were derived from the bottom-up assessment and used as a reference for other countries with similar characteristics. Population estimates from the UN Statistics Division were used to estimate the aggregated need and cost per activity.

The costing exercise developed estimates for four cost categories: (a) development costs (incremental costs or additional funds for establishing and strengthening CRVS

systems); (b) incremental recurrent costs for maintaining CRVS systems; (c) international support to CRVS, including sharing knowledge and strengthening the evidence base; and (d) monitoring and evaluation.

Country strategic investment plans

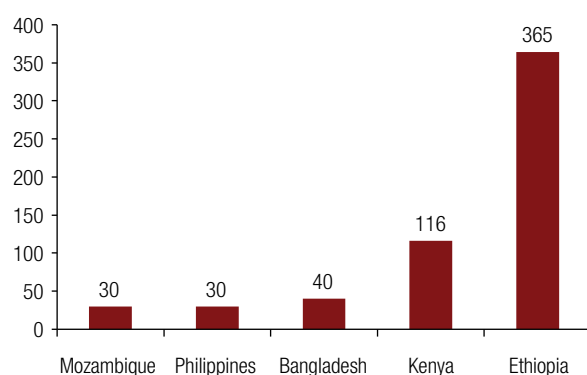
As noted above, cost estimates have been drawn from the five countries that have undertaken detailed costing exercises as part of the development of CRVS investment plans. The costs in each plan were disaggregated into fixed/start-up/capital costs and variable/operating costs.⁴ The total costs (without inflation adjustment) vary from under US\$30 million in countries with existing capacity, rising to over US\$365 million in Ethiopia, which only established a National Vital Events Registration Agency in October 2013.

The country costs translate into a range of under US\$1 per capita in countries such as the Philippines and Bangladesh, to between US\$1 and US\$4 in Mozambique and Ethiopia. The cost per vital event (births and deaths) ranges from under US\$2 to over US\$13.

³ CEPA provided analytical inputs from the country-specific investment plans to the global costing and financial estimates for strengthening CRVS

⁴ Fixed/start-up/capital costs refers to both fixed costs for capital investments and one-time development costs needed for the CRVS system. Variable/operating costs refers to ongoing costs of operating and maintaining the system.

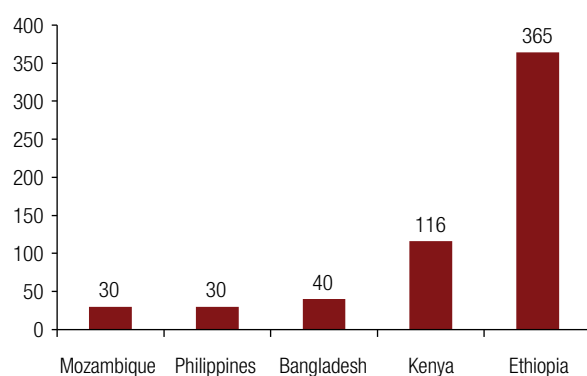
Total CRVS Development Cost per Five-Year Plan (US\$ million)^a



Source: National CRVS Investment Plans, WHO 2014.

^a The total for Bangladesh excludes biometric costs.

Per Capita and Per Vital Event CRVS Development Costs



Source: National CRVS Investment Plans, WHO 2014.

Country categorization

Seventy-three COIA countries are categorized into three groups of investment need (high, moderate, and low), with a total of six subgroups, based on the available data on birth registration (under one year of age) and death registration coverage, and the quality of cause-of-death data. It is assumed that countries with very low birth registration and no data on death registration have low capacity and thus will require high investment, while countries with high coverage and relatively high death registration coverage will need lower investment. China and India were excluded due to inadequate comparable data and their very large population size. The activities included in each of the three groups are as follows:

- High investment need** (countries with low registration requiring capital investment): Defined as countries lacking basic infrastructure/equipment, a legal framework, designs for outreach systems (mobile and health facility registers), and data warehouse and systems coordination.
- Moderate investment need** (countries with basic infrastructure, but with low or moderate birth registration coverage): Defined as countries with a legal framework approved but lacking implementation, partial population coverage, outreach programs designed but not implemented, traditional or obsolete ICT infrastructure in warehouses or points of collection (ICT computerizing—automation of both registration and certification services and digitizing records), potential for ID registration integration, and national integration of the vital statistics component.
- Low need investment** (countries with a basic to moderate level of infrastructure in place, high birth registration coverage, but with quality and timeliness issues): Defined as countries with issues regarding quality of information in particular cause-of-death recording, vital statistics analysis and use, and countries needing to extend registration coverage to very remote areas/excluded populations (indigenous, migrants, refugees etc.).

Cost of CRVS scaling up

The estimated development costs (incremental costs or additional funds for establishing and strengthening CRVS systems) in the 73 COIA countries during the period 2015–2024 is US\$2,281 million, or US\$0.90 per capita (Table 1). The costs comprise 59 percent fixed/start-up/capital costs (i.e. both fixed costs for capital investments and one-time development costs needed for the CRVS system) and 41 percent variable/operating costs (i.e. ongoing costs of operating and maintaining the system) (Table 2). The assumptions made to derive per-capita cost per activity are found in Table 3.

The estimated recurrent costs of running CRVS systems (with the assumption that this increases as more CRVS systems become established) during the period 2015–2024 is US\$1.201 billion. Furthermore, the cost of international support required, including to develop international standards and tools, generate knowledge,

and develop an evidence base, was estimated at US\$0.228 billion (10 percent of the total development cost), with an additional US\$0.114 billion (5 percent of the total development cost) for monitoring and evaluation (**Table 1**).

The country costing exercises also allow for a provisional estimate of the expected commitment of resources from domestic sources, including the government and other in-country sources, estimated at US\$1.829 billion in the 73 countries (**Table 4**).

After excluding estimated domestic sources of funds, there is an estimated US\$1.99 billion financing gap for the global scaling up plan over a ten-year period, or an average of **US\$199 million financing gap per year** for 73 countries. The following assumptions were made in deriving the financing gap estimate for sustainable development of country CRVS systems:

- a. **For low-income countries:** (i) Governments will finance 20 percent, 40 percent, 60 percent, and 80 percent of the variable/operating costs in years 2015, 2016, 2017, and 2018 and bear full costs from 2019 onward; and (ii) Governments will finance 10 percent of fixed/start-up/capital costs from 2015 to 2019 and 20 percent from 2020 to 2024.
- b. **For lower-middle-income countries:** (i) Governments will finance 20 percent, 40 percent, 60 percent, and 80 percent of the variable/operating costs in years 2015, 2016, 2017, and 2018 and bear full costs from 2019 onward; and (ii) Governments will finance 25 percent of fixed/start-up/capital costs from 2015 to 2019 and 50 percent from 2020 to 2024.
- c. **For upper-middle-income countries:** Governments will bear the full variable/operating costs from 2015 to 2024, 50 percent of fixed/start-up/capital costs from 2015 to 2019 and 75 percent of fixed/start-up/capital costs from 2020 to 2024.

Limitations

These initial estimates are provisional and have a number of limitations:

- **Limited country and regional representation.** In addition to the scant information available for current expenditures on CRVS, only five national investment plans are available (Bangladesh, Ethiopia, Kenya, Mozambique, and the Philippines). In terms of data availability, this is a clear limitation, although it does offer insight into a range of countries with different levels of CRVS system development (from no system at all to almost functional systems), and experiences across regions, although there is no information on countries from Latin America and the Caribbean or Central Asia, among others.
- **Comparability of national CRVS costing plans.** The main inputs for the costing exercise are extracted from five recent but dissimilar country-specific strategic plans. Although every national plan aimed to strengthen the country's CRVS system, each country plan is different in two ways. First, they differ in the set of activities they incorporated, reflecting diverse national priorities and needs. For example, the plans vary in terms of the ICT solutions proposed (ehealth, electronic registration systems, and even biometrics), infrastructure requirements, etc. For instance, while the plan for the Philippines comprises improvements to cause-of-death data, Ethiopia's does not. Second, the country plans assume that universal (or a very high percentage for) birth registration is possible during the time period covered by the plan, regardless of the state of the CRVS system. While this may be feasible in some countries with more developed CRVS systems (e.g. the Philippines), it is likely to be very difficult to achieve in other countries where the CRVS system is not fully developed (e.g. Ethiopia).
- **Estimated commitments and financing gap assumptions.** As a result of a lack of data on current or previous commitments, domestic commitments per income group have been estimated. As such, there is a high degree of uncertainty around them thereby requiring careful interpretation. The exercise also does not consider the speed and trends over time with which additional funds can be mobilized, and both incremental investment and recurrent costs may extend the original implementation period. Additional recurrent costs depend on prior capital investments and may change over time.
- **Same cost for birth and death registration.** The costing exercise is not able to distinguish between birth and death registration costs based on the information outlined in the national plans. Death registration might be more costly than birth registration when the provision of COD is included.

Adjustment costs are therefore necessary to ensure that provision is made for COD improvements in target countries.

- **Incomplete measure of death registration coverage.** Current CRVS levels or capacity is based primarily on information for birth registration among children under five collected by surveys (DHS and MICS) and compiled by UNICEF, but only 15 out of 75 countries have data on death registration, therefore it is possible that the country classifications underestimate the need for countries that, despite

having reached relatively high birth registration levels, have a low death registration level.

- **The costing excludes “broader” costs such as opportunity costs and costs to the public.** Costs that are not included in the analysis include opportunity costs; direct costs to the population, (e.g. transport and certification costs); and cost savings due to developing regional tools and standards, improving registration and recording using ICT, and comparing with other information instruments, as well as revenue from the registration process.

Table 1. Estimated financing gap for 2015–2024 scaling up investment plan (US\$ million)

	2015–2019	2020–2024	10 year total	Financing Gap
Development costs	1,140	1,140	2,281	1,604
Recurrent costs ^a	408	793	1,201	49
International support to CRVS including knowledge sharing, and strengthening the evidence base ^b	114	114	228	228
Monitoring and evaluation ^c	57	57	114	114
TOTALs	1,720	2,104	3,824	1,995

Notes:

^a Recurrent costs increase as more CRVS systems are established (34 percent of total in first five years, and 66 percent of total in next five years)

^b 10 percent of total development cost distributed evenly

^c 5 percent of total development cost distributed evenly

Table 2. Estimation of global CRVS development and recurrent costs for 73 COIA priority countries 2015–2024^a

Cost category/activity	Total US\$ million	Cost per capita (US\$)	% of cost
Total development costs	\$2,281	\$0.9	100%
Fixed/start-up/capital costs	\$1,341	\$0.55	58.8%
Development of legal/ regulatory framework	\$18	\$0.01	0.8%
Comprehensive assessment	\$4.8	\$0.002	0.2%
Infrastructure and equipment	\$542	\$0.22	23.7%
ICT (technology costs)	\$619	\$0.25	27.1%
Digitization of existing registration records	\$108	\$0.04	4.8%
Development of operational guidelines and procedures	\$49	\$0.02	2.1%
Variable/operating costs	\$939	\$0.38	41.2%
Capacity Building	\$210	\$0.09	9.2%
IEC (Advocacy and communication campaigns)	\$240	\$0.10	10.5%
Maintenance of technology and other infrastructure	\$186	\$0.08	8.1%
Data management	\$120	\$0.05	5.3%
Outreach activities to improve coverage	\$66	\$0.03	2.9%
System monitoring and enforcement costs	\$118	\$0.05	5.2%
Additional recurrent costs (including staff salary)	\$1,201	\$0.5	100%

Note: Total development costs include both fixed/start-up/capital cost and variable/operating costs. Recurrent costs estimates include.

US\$ 251 million for capacity building and IEC costs, US \$491 million for maintenance of technology, data management, outreach activities and system monitoring costs; \$US411 million for salary and running costs estimated as 20 percent of total development costs for high and moderate investment need countries, and 10 percent for low investment need countries.

Cost per activity assumptions are outlined in Table 3.

^a India and China excluded

Table 3. Main assumptions made to derive per-capita cost per activity in estimating global CRVS development and recurrent costs for 73 COIA priority countries 2015–2024

Cost category	Main assumptions and cost per activity applied	Included in recurrent costs
Incremental Fixed/ capital costs		
Development of legal/ regulatory framework	Average cost of US\$250,000 for Bangladesh and Philippines, was used for the 73 countries	No
Comprehensive assessment	Average cost of US\$100,000 per country was assumed for the comprehensive assessment for the 48 countries that are yet to undertake the assessment.	No
Infrastructure and equipment	US\$0.30 per capita (US\$24.2 million average for four countries with data) was used for high and moderate investment need countries while US\$0.05 per capita was used for low investment need countries. Cost estimated from Ethiopia's costing excludes the cost of vital statistics infrastructure.	No
ICT (technology costs)	US\$0.30 per capita (US\$24.5 million average for 5 countries with data) was used for high and moderate investment need countries while US\$0.16 per capita was used for low investment need countries based on data from the Philippines (US\$15.0 million)	No
Digitization of existing registration records	US\$0.04 per capita (US\$2.4 million average for three countries with available data i.e. Bangladesh, Mozambique, and Kenya) was used for the 73 countries.	No
Development of operational guidelines and procedures	US\$0.02 per capita (US\$1.8 million average for 5 countries with data) was used for the 73 countries.	Yes
Incremental Variable/operating costs		
Capacity Building	High investment need countries—US\$0.29 per capita average across five countries (US\$25.4 million); moderate investment need countries—US\$0.12 based on average from Bangladesh, Mozambique, and Kenya (US\$9.1 million); and low investment need countries based on Philippines US\$0.02 (US\$1.9 million).	Yes. Decrease cost. High need \$0.12 and the moderate group \$0.02
IEC (Advocacy and communication campaigns)	IEC is expected to be higher in the high investment need countries (US\$.20) with the per capita estimate based on Ethiopia. For the moderate and low investment need countries estimates, US\$.052 was used based on the average for Bangladesh, Mozambique, Kenya, and Philippines.	Yes. Average \$.052 per capita for all
Outreach activities to improve coverage	US\$0.02 per capita was used for high and moderate investment need countries (the average for Kenya and Philippines) while US\$0.04 per capita was used for low investment need countries (the higher rate for the low investment need countries takes into account the difficulty in reaching marginalized populations). The high and moderate investment need countries will later experience high cost as they try to reach universal coverage by 2030.	Yes
Maintenance of technology and other infrastructure	30 percent of technology cost was used based on the average proportion from the available country data (29%–40%). Bangladesh was excluded as it was considered to be very low (0.07 percent)	Yes
Data management	US\$0.05 per capita (US\$1.2 million average for 5 countries with data) was used for the 73 countries.	Yes
System monitoring and enforcement costs	US\$0.05 per capita (US\$5.7 million truncated average) was used for the 73 countries.	Yes

Note: The table summarizes the associated assumptions used to estimate average unit costs per activity and per CRVS level. Activity and aggregated cost for each country were estimated using per-capita costs as shown in the table. The last column indicates whether that category was included in the recurrent cost for the next five years (2020–2024). Categorization of CRVS activities and costs have been based on the available information in the investment plans and have required a degree of judgment given some incomplete/unclear information in the plans. Country investment plans vary also in terms of the activities included so this exercise offered the possibility of standardizing the costs included in the estimate. In addition, each country investment plan has been developed independently and employs slightly different approaches to costing. Country plan costing has been adjusted for inflation for the country's specific implementation period between 2014 and 2020. All country plans had a five-year time horizon except Ethiopia, which had a seven-year investment plan period. Currency exchange rate fluctuations have not been factored into the analysis.

Table 4. Costs of developing CRVS and estimated investment gap CRVS (73 countries) 2015–2024

Country category	Cost reference level (level of need)	Countries assigned	Coverage range	Number of countries	Additional estimated costs				
					Development cost	Recurrent cost	Main estimate investment need US\$ million	Estimated commitments US\$ million	Financial Gap US\$ million
Low coverage (BR≤30)	High investment need	Eritrea, Somalia, Liberia, Afghanistan, Ethiopia, Chad, South Sudan, Papua New Guinea, Malawi, Angola, Swaziland, Guinea Bissau, Bangladesh, Tanzania, Uganda, Yemen, Pakistan, DRC, Nigeria, Zambia	0–30%	20	929	488	1,417	759	659
Moderate coverage (BR>30 & BR≤80)	Moderate investment need	Mozambique, Equatorial Guinea, Niger, Sudan, Nepal, Zimbabwe, Guinea, Lesotho, São Tomé and Príncipe, CAR, Sierra Leone, Côte d'Ivoire, Gambia, Senegal, Mauritania, Benin, Burundi, Cambodia, Burkina Faso, Cameroon, Ghana, Botswana, Lao PDR, Bolivia, Togo, Kenya, Myanmar, Indonesia	31–80%	34	905	438	1,343	637	706
High coverage (BR>80)	Low investment need	Madagascar, Solomon Islands, Congo Rep, Haiti, Mali, Rwanda, Comoros, Morocco, Djibouti, Gabon, Philippines, Vietnam, Brazil, Peru, Mexico, Egypt, Iraq, South Africa, DPR Korea, Guatemala, Tajikistan, Azerbaijan, Kyrgyz Republic, Turkmenistan, Uzbekistan	81–100%	19	447	275	722	434	288
TOTAL				73	2,281	1,201	3,482	1,829	1,653

Note: Financial gap for development and recurrent costs, excludes international support and monitoring and evaluation financing needs.

Annex 9. Participants at Global CRVS Consultation in Addis Ababa April 28–29, 2014

CO-HOST ORGANIZATIONS			
Canada DFATD	Benjamin Yung	Department of Foreign Affairs, Trade and Development	benyamen.yung@international.gc.ca
UN Economic Commission for Africa	Chukwudozie Ezigbalike	Officer in Charge, African Centre for Statistics	cezigbalike@uneca.org
	Raj Mitra	Chief, Demographic and Social Statistics	rmitra@uneca.org
	Josephine Marealle-Ulimwengu	Officer in Charge, Office of Partnerships	jmulimwengu@uneca.org
	Salah Badr	Manager, CRVS improvement Initiative	sbadr@uneca.org
	Gloria Mathenge		gwaithiramathenge@uneca.org
	Gilbert Habaasa	Fellow, Demographics & Social Statistics	ghabaasa@uneca.org
	Kodzovi Senu Abalo	Fellow, CRVS Secretariat	kabalo@uneca.org
	Meaza Bekele	Statistics Assistant	meazab@uneca.org
	Samuel Mills	Senior Health Specialist	smills@worldbank.org
	Ana M. Aguilar Rivera	Health Economist	aaguilarrivera@worldbank.org
World Bank	Bob Fryatt	Consultant, Health, Nutrition & Population	bobfryatt@gmail.com
	Francois Lefebvre	Senior Financial Officer	flefebvre@worldbank.org
	James Neumann	Senior Counsel, Legal Department	jneumann@worldbank.org
World Health Organization	Ties Boerma	Director, Department of Health Statistics and Information Systems	boermat@who.int
	Anneke Schmitter	Technical Officer (CRVS), Health Statistics and Information Systems	schmittera@who.int
	Mark Landry	Regional Advisor, WPRO	landrym@who.int
	Jyotsna Chikersal	Regional Advisor, SEAR	chikersalj@who.int
	Dag Roll-Hausen	Technical Officer, WHO/HQ/HIS	rollhansend@who.int
	Lucille Nievera	Philippines WHO Country office	nieveral@wpro.who.int
	Eduardo Celades	WHO Mozambique	celadese@who.int

(continued on next page)

(continued)

COUNTRY REPRESENTATIVES			
Ethiopia	Nestanet Abera Lema	Director-General, Vital Events Registration Agency	netsanetvera@gmail.com
	Samiya Zakaria	Director-General, Central Statistics Agency	smaiyaz@ethionet.et
	Asmaru Berihun	Commissioner, Women's and Children's Affairs, Ethiopian Human Rights Commission	elaluberihun@yahoo.com
	Biratu Yigezu	Deputy Director-General, CSA	biratu_y@ethionet.et
	Mesoud Mohammed	Assistant Director, Policy & Planning Directorate, Federal Ministry of Health	
	Noah Elias	Director, Policy & Planning Directorate, Federal Ministry of Health	
	Hailemariam Teklu	Senior Statistician, CSA	
	Daniel Lishanew	VERA	dldaniel361@gmail.com, lishanewd@yahoo.com
	Asfaw Mekonnen	VERA	asfawmekonnen@gmail.com
	Nikodimos Alemaayehu	Specialist, Justice for Children	nalemayehu@unicef.org
Bangladesh	Prof Dr. Abul Kalam Azad	Additional Director General (Planning & Development), Directorate General of Health Services	profakazad@gmail.com
	AKM Saiful Islam Chowdhury	Project Director (Addl. Secretary), Birth and Death Registration Project	saislach@gmail.com
	Anir Chowdhury	Policy Advisor, Access to Information, Prime Minister's Office	anir.chowdhury@gmail.com
	Md. Nurul Karim	Additional Secretary, Committee & Economic Wing	nurul-karim96@yahoo.com
	Satya Ranjan Mondal	Deputy Secretary, Statistics and Informatics Division	sranjanmondal@gmail.com
	Syed Mohammad Musa	Director (Administration & Finance), NID Registration Wing Election Commission, Bangladesh	musaarif21@yahoo.com
	Prof Dr. Abul Kalam Azad	Additional Director General (Planning & Development), Directorate General of Health Services	profakazad@gmail.com
	AKM Saiful Islam Chowdhury	Project Director (Addl. Secretary), Birth and Death Registration Project	saislach@gmail.com
Mozambique	Sheila Santana Alfonso	Permanent Secretary, Ministry of Justice	sheila.santana.afinfo@minjust.gov.mz, shelasant242@yahoo.com.br
	Cidalia Baloi	Head, Department of HSI, MISAU	cidaliabaloi@gmail.com
	Cassiano Soda Chipembe	Director Estadísticas Demográficas, INE	
	Joao Carlos Mavimbe	Ministry of Health, Mozambique	jcmavimbe@misau. Gov.mz
	Angelo Paunde	National Director DPC, GITEV Coordinator	angelopawnde@gmail.com
	Carla Roda	National Director of DPC, Ministry of Justice National Director of Civil registration and Rotary	cguilaze@yahoo.com.br
Philippines	Cripinita A. Valdez	Director III, Information Management Service, Department of Health	cavaldez@co.doh.gov.ph
	Aurora Reolalas	Statistician V, Chief, Vital Statistics Division, Philippine Statistics Authority	a.reolalas@census.gov.ph
Burkina Faso	Aimé Gérard Yameogo	Directeur general de la modernization de l'état civil	Aimegerard6@yahoo.fr

(continued on next page)

(continued)

REGIONAL AND GLOBAL REPRESENTATIVES			
African Development Bank	Maurice Maubila	Chief Statistician	m.mubila@afdb.org
	Genene Bizuneh		gbizuneh@uneca.org
African Union	Yeo Dossina		dossinay@africa-union.org
	Rene N'guettia Kouassi		
Cambridge Economic Policy and Associates (CEPA)	Matthew Cooper	Consultant	Matthew.cooper@cepa.co.uk
	Kaveri Kumar	Managing Consultant	Kaveri.kumar@cepa.co.uk
CDC	Sam Notzon	Director, International Statistics Program, National Centre for Health Statistics	fnc2@cdc.gov;
	Deblina Datta	Global Immunization Division, Center for Global Health, CDC	ddatta@cdc.gov
IADB	Haydeé Reyes Soto		haydeer@iadb.org
Paris 21	Johannes Jütting	PARIS21 Secretariat Manager	Johannes.jutting@oecd.org
Plan International	Jennifer Martinesi	Country Director	Jennifer.Martinesi@plan-international.org
	Nicoleta Panta	Advocacy Manager	Nicoleta.panta@plan-international.org
Project Consultants	Carla Abouzahr	CRVS Expert	Carla.abouzahr@gmail.com
	Esperanca Nhangumbe	Mozambique Project	enhangumbe@gmail.com
	Purvi Paliwal	Bangladesh Project	purvipaliwal@gmail.com
	Yacob Zewoldi	Ethiopia Project	yzewoldi@gmail.com
	Ageazit Tekla	Ethiopia Project	
Statistics Norway	Vibeke Nielsen	Senior Adviser, Division for Development cooperation.	Vibeke.nielsen@ssb.no
UN ESCAP	Jonathan Marskell	Consultant, CRVS, Statistics Division	marskell@un.org,
UN ESCWA	Marwan Khawaja	Chief Demographic and Social Statistics	Khawaja@un.org
UNFPA	Richmond Tiemoko	Population Dynamics Policy Advisor, UNFPA, ESARO	tiemoko@unfpa.org
UNHCR	Monique Ekoko	Deputy Representative, UNHCR Representation to the AU and the ECA Liaison Officer	ekoko@unhcr.org
	Marouane Tassi		tassi@unhcr.org
UNICEF	Cornelius Williams	Regional Advisor	cowilliams@unicef.org
	Mayke Huijbregts	Chief, Child Protection	mhuijbregts@unicef.org
	Kristen Wenz	Child Protection Specialist, CRVS Focal Point EAPRO, Child Protection	kwenz@unicef.org
	Djanabou Mahoude	Child Protection Specialist	dmahoude@unicef.org
	Mirkka Tuulia Mattila	Child Protection Specialist	mtmattila@unicef.org
	Milen Kidane	Child Protection Specialist	mkidane@unicef.org
USAID	Kathleen Handley	Senior Advisor	khandley@usaid.gov
UN Statistics Division	Keiko Osaki-Tomita	Chief, Demographic and Social Statistics	osaki@un.org



References

- Abouzahr, Carla, M. Fu, H. Harbitz, and R.G. Mitra. "Towards a Research Agenda for Civil Registration and Vital Statistics in the Asia-Pacific Region." Draft. April 2014.
- African Knowledge for Development Networks. "Rapport sur l'état d'avancement de la Stratégie De La République du Cap Vert – Résultats sur l'enregistrement à l'état civil et les statistiques vitales." August, 2012. <http://knowledge.africa-devnet.org/group/crvs>. Accessed May 16, 2014
- Asian Development Bank, *Legal Identity for Inclusive Development. Law and Policy Reform at the Asian Development Bank*, Asian Development Bank, 2007.
- Danel, Isabella, and Marcelo Bortman, 2008. *An assessment of LAC's vital statistics system: the foundation of maternal and infant mortality monitoring*. HNP discussion paper series. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2008/05/9727154/assessment-lacs-vital-statistics-system-foundation-maternal-infant-mortality-monitoring>. Accessed May 12, 2014
- Delany R. "Fourteen Years Young: A Review of the National Health Index in New Zealand," *Health Care and Informatics Review Online*, June 1, 2006. <http://www.hinz.org.nz/journal/2006/06/Fourteen-Years-Young-A-Review-of-the-National-Health-Index-in-New-Zealand/936>. Accessed May 12, 2014
- Fryatt, Robert. "Investing in Health," *The Lancet*, Volume 383, Issue 9921 (March 15, 2014):950, doi:10.1016/S0140-6736(14)60475-X.
- Gelb, Alan, "Unique ID in Development and Social Programs," World Bank Pensions Core Course March 6, 2014. http://www.worldbank.org/content/dam/Worldbank/Event/pensions/1.%20Gelb_Pensions-Soc%20030614.pdf. Accessed May 12, 2014
- Gelb, Alan, and Julia Clark. 2013. "Identification for Development: The Biometrics Revolution." CGD Working Paper 315. Washington, DC: Center for Global Development. <http://www.cgdev.org/content/publications/detail/1426862>. Accessed May 12, 2014
- German Institute for Medical Documentation and Information, Iris Institute. <http://www.dimdi.de/static/en/klassi/koop/irisinstitute/index.htm>. Accessed May 12, 2014
- Giugale, Marcelo. "The Child from Mozambique," *Huffington Post Blog*, August 6, 2011. http://www.huffingtonpost.com/marcelo-giugale/child-development-poverty-_b_873300.html. Accessed May 12, 2014
- Government of Canada. "Saving Every Woman and Every Child," May 28–30, 2014. <http://mnch.international.gc.ca/index-en.html>. Accessed May 12, 2014
- GSMA Mobile Identity Team. "Mobile Birth Registration in Sub-Saharan Africa: A case study of Orange Senegal and Uganda Telecom solutions." GSMA, Uganda Telecom, 2013. <http://www.gsma.com/mobileidentity/wp-content/uploads/2013/05/Mobile-Birth-Registration-in-Sub-Saharan-Africa.pdf>. Accessed May 16, 2014

- Halvard Skiri, Mirela Talka Kumbo, Anne Abelsæth, Stein Opdahl, Helge Brunborg and Dag Roll-Hansen. Statistics Norway, 2012 “How to Modernize a Civil Registration System — The Case of Albania,.” Documents 32/2012. https://www.ssb.no/a/english/publikasjoner/pdf/doc_201232_en/doc_201232_en.pdf. Accessed May 16, 2014
- Harbitz, Mia B. and Bettina Boekle. “Democratic Governance, Citizenship, and Legal Identity. Linking Theoretical Discussion and Operational Reality.” IDB Working Paper. May 2009.
- Harbitz, Mia B. and Juan Carlos Benítez Molina. *Civil Registration and Identification Glossary*, IDB, New York, 2010.
- Health Metrics Network. “The Case for Investment in Civil Registration and Vital Statistics Systems,” Health Metrics Network, 2012.
- Horton, Richard. “Counting for Health,” *The Lancet*, Volume 370, Issue 9598 (2007): 1526, doi:10.1016/S0140-6736(07)61418-4.
- Institute for Health Metrics and Evaluation. “Verbal Autopsy (VA) Tools.” <http://www.healthmetricsandevaluation.org/tools/smart-va-application>. Accessed May 12, 2014
- Inter-Agency, *Guidance on Profiling Internally Displaced Persons*, edited by November Norwegian Refugee Council’s Internal Displacement Monitoring Centre and the United Nations Office for the Coordination of Humanitarian Affairs, April 2008. <http://www.refworld.org/docid/47b5ad3a2.html>. Accessed May 12, 2014
- Inter-American Development Bank. “Plan of Operations. Interconnection and Modernization of civil registration and identification process and Generation of Information for Vital Statistics in Uruguay.” Project No. no. UR-T1041. <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1415113>. Accessed May 12, 2014
- _____. Uruguay CRVS. <http://www.iadb.org/en/videos/watch,2173.html?videoID=9450&key-words=&tags=&page=1&topicID=&countryID> Accessed May 12, 2014
- International Organization for Migration. “Migration Health,” <https://www.iom.int/cms/migration-health>. Accessed April 24, 2014
- Jamison, Dean T. et al. “Global Health 2035: A World Converging within a Generation,” *The Lancet*, Volume 382, Issue 9908 (2013): 1898–1955, doi:10.1016/S0140-6736(13)62105-4.
- United Nations Joint Programme on HIV/AIDS. Guidelines on Protecting the Confidentiality and Security of HIV Information,” Proceedings from a Workshop, May 15–17, 2006, Geneva, Switzerland. UNAIDS. http://data.unaids.org/pub/manual/2007/confidentiality_security_interim_guidelines_15may2007_en.pdf. Accessed May 12, 2014
- Latin American Network for the Strengthening of Health Information Systems [*Red Latinoamericana y del Caribe para el Fortalecimiento de los Sistemas de Información de Salud (RELACIS)*] <http://www.relacis.org/v1/index.php/en>. Accessed May 12, 2014
- Lehohla Pali, Mathenge Waithira. Breaking with Broken Systems: EU/UNICEF Partnership for the Legal Identity of African, Asian and Pacific Children. Page 25. <http://unicefstories.files.wordpress.com/2013/10/pan-african-study-tour-revised.pdf>. Accessed May 12, 2014
- Measure Evaluation, SAVVY: Sample Vital Registration with Verbal Autopsy <http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/savvy>. Accessed May 15, 2014
- Melamed, Claire. “Development Data: How Accurate Are the Figures?” *The Guardian Blog*, January 31, 2014. <http://www.theguardian.com/global-development/poverty-matters/2014/jan/31/data-development-reliable-figures-numbers>. Accessed May 12, 2014
- Mobile World Live, “GSMA mHealth Tracker.” <http://www.mobileworldlive.com/mhealth-tracker>. Accessed May 12, 2014

- Ngozi Okonjo-Iweala, Philip Osafo-Kwaako, "Improving health statistics in Africa," *The Lancet*, Volume 370, Issue 9598 (November 3, 2007): 1527–1528, doi:10.1016/S0140-6736(07)61644-4.
- Pan American Health Organization. Immunization Newsletter. PAHO. Volume XXXIV. Number 6. December 2012. http://www.paho.org/hq/index.php?option=com_content&view=article&id=6187&Itemid=2400&lang=en Accessed May 12, 2014
- . "Regional Plan of Action for Strengthening Vital and Health Statistics (PEVS)," PAHO Resolution CD48.R6, Washington, D.C., 2008.
- . "Regional Plan of Action for Strengthening Vital and Health Statistics (PEVS)," PAHO Resolution CD48.R6 CD52/INF/4, Agenda Item 7.4. September 2013.
- Partnership for Statistics in Development for the 21st Century. PARIS21. Country activities. <http://www.paris21.org/Country-Activities>. Accessed May 12, 2014
- . "National Strategy for Statistical Development," Guidance 2.0. PARIS21. <http://nsdguidelines.paris21.org/>. Accessed May 12, 2014
- . "PARIS21 at Ten. Improvements in Statistical Capacity since 1999," PARIS21, 2010. <http://paris21.org/sites/default/files/P21-at-10.pdf>. Accessed May 12, 2014
- Plan International. "Birth Registration: Resources." <https://plan-international.org/what-we-do/child-participation/birth-registration/resources>. Accessed May 12, 2014
- . Guidelines of CRVS digitization. Concept Note. On behalf of the Accelerated Improvement of CRVS. June 2013.
- . "Mitigating the risks to children in digitalized birth registration systems". Plan International, 2014 (forthcoming).
- . *Mother to Child. How Discrimination Prevents Women Registering the Birth of their Child*, Surrey, United Kingdom, 2012. <https://plan-international.org/files/global/publications/campaigns/mother-to-child-how-discrimination-english>. Accessed May 12, 2014
- Robertson, Laura, et al. "Effects of Unconditional and Conditional Cash Transfers on Child Health and Development in Zimbabwe: a Cluster-Randomised Trial," *The Lancet*. Volume 381, Issue 9874 (April 13–19, 2013): 1283–92, doi:10.1016/S0140-6736(12)62168-0.
- Setel, Philip W. "A Scandal of Invisibility: Making Everyone Count by Counting Everyone," *The Lancet*, Volume 370, Issue 9598 (November 3, 2007): 1569–77, doi:10.1016/S0140-6736(07)61307-5
- Snorrason, H. et al. "Evaluation Report," World Bank Trust Fund for Statistical Capacity Building, January 2010
- South Africa.info. "South Africa to pilot Smart ID Cards," South African Government Online, May 8, 2012. <http://www.southafrica.info/services/government/smart-id-081512.htm#.U1IZ1sXD-3o>. Accessed May 12, 2014
- Thabane L, Chinganya O, and Ye C. Chenglin. "Training Young Statisticians for the Development of Statistics in Africa," *African Statistical Journal*, Volume 7, November 2008, 125–148
- United Nations. "Principles and Recommendations for a Vital Statistics System, Revision 3: Final Draft April 2013." Presented to the United Nations Statistical Commission at its 44th session in 2013 and formally adopted at its 45th session in 2014. http://unstats.un.org/unsD/demographic/standmeth/principles/unedited_M19Rev3en.pdf. Accessed May 12, 2014
- . "A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda." United Nations, New York, 2013

- United Nations Children's Fund. *A Passport to Protection: A guide to birth registration programming*, UNICEF, New York, 2013.
- . *Every Child's Birth Right. Inequities and Trends in Birth Registration*, UNICEF, New York, 2013
- . "Child protection from violence, exploitation and abuse: Birth Registration," UNICEF. http://www.unicef.org/protection/57929_58010.html. Accessed May 12, 2014.
- United Nations Economic and Social Commission for Asia and the Pacific. "Regional Action Framework for Civil Registration and Vital Statistics in Asia and the Pacific," ESCAP, DRAFT March 2013
- United Nations Economic and Social Council. "Strategy for Conducting Assessment of and Planning for National Civil Registration and Vital Statistics Systems," UNECA, September 2012
- United Nations Foundation. Data2x. *Gender Dimensions of CRVS*. Draft. April 2014.
- United Nations General Assembly. "Report of the Sixty-Fourth Session of the Executive Committee of the High Commissioner's Programme," United Nations General Assembly, October 2013. A/AC/96/1132
- United Nations Office of the High Commissioner for Human Rights. "Convention on the Rights of the Child," Article 7(1) <http://www.ohchr.org/en/professionalinterest/pages/crc.aspx>. Accessed May 12, 2014
- United Nations Statistics Division. "Civil Registration Systems," UNSD. <http://unstats.un.org/UNSD/Demographic/sources/civilreg/default.htm>. Accessed May 12, 2014
- Uphadhy, Rajib. "Identity Cards Adding Value for Development," *World Bank Blog*, April 11, 2013. <https://blogs.worldbank.org/endpovertyinsouthasia/national-identity-cards-adding-value-development>. Accessed May 12, 2014
- World Bank. "Building Robust Identification Systems." Presented at South-South Learning Forum 2014: Designing and Delivering Social Protection and Labor Systems, Rio de Janeiro, Brazil, March 17, 2014. Accessed May 12, 2014
- . Bulletin Board on Statistical Capacity. <http://data.worldbank.org/data-catalog/bulletin-board-on-statistical-capacity>. Accessed May 16, 2014
- . *The Global Agriculture and Food Security Program*. <http://www.gafspfund.org/>. Accessed May 12, 2014
- . *Global Partnership & Trust Fund Operations*. <http://go.worldbank.org/GABMG2YEI0>. Accessed May 12, 2014
- . "Marrakech Action Plan for Statistics. Better Data for Better Results. An Action Plan for Improving Development Statistics." Paper presented at Second International Roundtable on Managing for Development Results, Marrakech, Morocco, February 2004.
- . Digital Identity for Accelerating Economic and Social Development. A Toolkit for Policymakers in Africa. Draft. May 2014.
- . Trust Fund for Statistical Capacity Building Program 2013. <http://www.worldbank.org/en/data/statistical-capacity-building/trust-fund-for-statistical-capacity-building>
- . "Trust Fund for Statistical Capacity Building: Annual Progress Report, April 1, 2012–March 31, 2013," Development Data Group, The World Bank, March 2013.
- World Health Organization. "Analysing Mortality Level and Cause-of-Death Data (ANACoD)," WHO, 2013. <http://www.who.int/healthinfo/anacod/en/>. Accessed May 12, 2014
- World Health Organization. "Civil Registration and Vital Statistics 2013: Challenges, Best Practice and Design Principles for Modern Systems," WHO/HMN, December 2013. http://www.who.int/healthinfo/civil_registration/crvs_report_2013.pdf. Accessed May 12, 2014

- . “Consolidated Country Rapid Assessment Report of the Civil Registration and Vital Statistics (CRVS) Systems in the Eastern Mediterranean Region,” FINAL DRAFT. WHO/HMN. January 2013. <http://www.globalsummitoncrvs.org/pdf/EMRORapidAssessmentReport21March.pdf>. Accessed May 12, 2014
- . “Every Woman, Every Child: From Commitments to Action: The First Report of the Independent Expert Review Group (iERG) on Information and Accountability for Women’s and Children’s Health.” http://www.who.int/woman_child_accountability/ierg/reports/2012/en/. Accessed May 12, 2014.
- . Family of International Classifications Network, “Civil Registration and Vital Statistics, Fact sheet,” WHO, 2012.
- . Health Metrics Network. “Call for Partner Action.” Contribution to the Global Summit on Civil Registration and Vital Statistics, Bangkok, Thailand, April 18–19, 2013.
- . Health Metrics Network, “Framework and Standards for Country Health Information Systems,” Second Edition, WHO, Geneva, 2008.
- . “HIV/AIDS mortality surveillance. Methods and applications in general epidemics,” Draft. WHO, 2013.
- . “Implementing Basic Checks on Cause-of-Death Data (CoDEdit Tool),” WHO. http://www.who.int/healthinfo/civil_registration/en/. Accessed May 12, 2014
- . “Improving the Quality and Use of Birth and Cause-of-Death Information: Guidance for a Standards-Based Review of Country Practices. WHO, 2010. http://www.who.int/healthinfo/tool_cod_2010.pdf?ua=1
- . “International Classification of Disease,” 10th Edition, WHO, 2010. <http://apps.who.int/classifications/icd10/browse/2010/en>. Accessed May 12, 2014
- . “Maternal Death Surveillance and Response. Technical Guidance: Information for Action to Prevent Maternal Death,” WHO, Geneva, 2013. http://www.who.int/maternal_child_adolescent/documents/maternal_death_surveillance/en/index.html. Accessed May 12, 2014
- . “Migrant Health.” http://www.who.int/hac/techguidance/health_of_migrants/en. Accessed May 12, 2014
- . “Move it: Report on Monitoring of Vital Events using Information Technology.” WHO 2013. http://www.who.int/healthinfo/civil_registration/crvs_report_it_2013.pdf
- . “Rapid Assessment of National Civil Registration and Vital Statistics Systems. WHO, 2010. http://whqlibdoc.who.int/hq/2010/WHO_IER_HSI_STM_2010.1_eng.pdf?ua=1. Accessed May 12, 2014
- . “Strengthening Civil Registration and Vital Statistics for Births, Deaths and Causes of Death,” Resource Kit. WHO, 2012. http://www.who.int/healthinfo/CRVS_ResourceKit_2012.pdf?ua=1. Accessed May 12, 2014
- . “Strengthening Civil Registration and Vital Statistics for Births, Deaths and Causes of Death.” WHO 2013. http://apps.who.int/iris/bitstream/10665/78917/1/9789241504591_eng.pdf. Accessed May 12, 2014
- . “Verbal Autopsy Standards: The 2012 WHO Verbal Autopsy Instrument,” WHO, 2012. http://www.who.int/healthinfo/statistics/WHO_VA_2012_RC1_Instrument.pdf?ua=1. Accessed May 12, 2014
- . “World Health Statistics 2012. Part II: Highlighted Topics,” WHO, 2012. http://www.who.int/gho/publications/world_health_statistics/EN_WHS2012_Part2.pdf?ua=1. Accessed May 12, 2014



WORLD BANK GROUP

1818 H Street, NW
Washington, DC 20433