Vol. 29, No. 1,
November 2014

Asia-Pacific Population Journal

Asia-Pacific Population Journal

UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

Full text of articles available at:
www.unescap.org/appj.asp

ASIA-PACIFIC POPULATION JOURNAL
Vol. 29, No. 1, November 2014

The *Asia-Pacific Population Journal* is published at least twice a year in English by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

The *Journal* provides a medium for the international exchange of knowledge, experience, technical information and data on population-related issues as a basis for policymaking and programme development.

References to dollars ($) are to United States dollars, unless otherwise stated.

ST/ESCAP/2696

CONTENTS

Page

A development imperative: civil registration and vital statistics systems in the Asia-Pacific region 9

Carla Abouzahr, Claudia Stein, Nigel Chapman, Daniel Toole, Christophe LeFranc, Kaushal Joshi and Rikke Munk Hansen

The current status of civil registration and vital statistics (CRVS) systems in Asia and the Pacific is described in this paper. Civil registration is an administrative system for recording the occurrence and characteristics of vital events (notably births and deaths). It provides individuals with the documentation needed to establish legal identity and family relationships, exercise civil rights, access services and participate in modern societies. In addition, records of vital events from civil registration are a key source of vital statistics on fertility and mortality, and they provide the backbone for efficient public administration.

The paper makes the case for investing in CRVS and summarizes the development of the Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific.

Currently, few countries in the ESCAP region have well-functioning CRVS systems. However, new momentum for improving CRVS is building, driven by the growing demands for accountability and results, as well as improved equity and rights-based approaches to development challenges, and by the immense potential of innovation and new technologies to accelerate progress in CRVS improvement.

Countries in the ESCAP region have endorsed the Regional Strategic Plan, which is designed to stimulate and support the actions required to strengthen CRVS, increase collaboration among regional partners, foster country-to-country exchange and mutual learning, build high-level political commitment and support innovative approaches to tackling CRVS challenges. The benefits from civil registries and the statistics they help to produce will be significant across many sectors of Government and across the private sector.

Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences 39

Carla Abouzahr, Said Yaqoob Azimi, Lisa Grace S. Bersales, Chandrasekaran Chandramouli, Lourdes Hufana, Khalid Khan, Gulnara Kulkayeva, Jonathan Marskell, Lyaziza Sauyekenova

A civil registration and vital statistics (CRVS) system reflects the level of development of a country, and how its administrative system has been moulded by its history and culture. The coverage of birth and death registration is highly variable across the Asia-Pacific region. In this paper, the CRVS system experiences of five countries in the region – Afghanistan, India, Kazakhstan, Pakistan and the Philippines– are highlighted. In the case studies, a brief account is provided of the progress, challenges and lessons learned regarding key aspects of importance for CRVS systems in each country, and a glimpse is offered of the diversity of CRVS systems across the region. Some of the key strategies implemented by countries to address challenges in CRVS systems include legal and policy changes; improved collaboration across multiple sectors, in particular between the registration and statistical authorities; the growing involvement of the health sector in the notification of vital events and in improving ascertainment of causes of death; public information campaigns; and capacity development for the analysis, dissemination and use of vital statistics for policy and planning purposes.

Civil registration, human rights and social protection in Asia and thePacific 75

Lucía González López, Tanja Brøndsted Sejersen, Nicholas Oakeshott, Gaspar Fajth, Taimur Khilji and Nicoleta Panta

This paper contains an examination of the impacts of civil registration on the realization of human rights and access to social protection through country examples from the Asia-Pacific region. The importance of legal identity for full participation in society is highlighted, and an assessment is afforded of the potential impacts of civil registration throughout the life course and for specific, potentially excluded groups.

As stated in this paper, civil registration and vital statistics systems are essential to the realization of human rights and accessing basic social protection. It is also maintained in the paper that individuals should not be denied access to such rights and services as health and education on the basis that they are not registered. At the same time, it is acknowledged that legal identity realized through civil registration may be equally used by Governments to define who is entitled to rights and services and who is excluded. The relationship between civil registration, the realization of rights and access to services was found to be largely dependent on context.

The specific challenges of women and population groups at higher risk of exclusion from civil registration and thus from full participation in society, such as migrants and persons with disabilities, are also considered. The importance of civil registries for the implementation of social assistance programmes is also addressed.

In the paper, it is recommended that legislation on civil registration be universal in scope and that it facilitate the registration of vital events of all individuals, regardless of their situation. Further recommendations include simplifying registration procedures, having outreach activities for remote or mobile populations, and building social considerations into programme design to increase the coverage and effectiveness of civil registration.

Towards a research agenda for civil registration and vital statistics in theAsia-Pacific region 99

Carla Abouzahr, Mia Harbitz, Haishan Fu and Raj Gautam Mitra

In this paper, the first steps in developing a civil registration and vital statistics (CRVS) research agenda are described, and an initial framework presented for discussion on research priorities. The paper also contains guidance on future CRVS research, including a matrix to identify key research questions for the improvement of CRVS systems.

In the paper, it is highlighted that, although there is an accumulating body of evidence and experience from which to draw, substantial knowledge gaps remain. Furthermore, although research is being carried out on aspects of CRVS, it is not always well documented or accessible, and it does not appear in peer-reviewed journals.

The conclusion is that research is needed to generate and disseminate evidence about which CRVS strategies work in different contexts, to ensure that the potential benefits of innovation are successfully scaled up and that possible pitfalls are averted. Ideally, research to improve CRVS should recognize and deal with the institutional, political and cross-sectorial nature of CRVS systems, while taking into account the rapid advances in knowledge and technologies, the shifting expectations and concerns of the public, and the increasing needs and changing priorities of decisionmakers.

In addition, findings need to be compiled and made readily accessible to users for the purposes of policy, programming and practice. Knowledge translation services could help to ensure that the findings of research and lessons learned from countries about what works and what does not work are brought together, analysed and made readily accessible to users, particularly those entrusted with the maintenance and development of CRVS systems in resource-poor countries.

FOREWORD

Special Issue on Civil Registration and Vital Statistics

It is our great pleasure to have the opportunity to advocate for the importance of civil registration and vital statistics (CRVS) in this special issue of the *Asia-Pacific Population Journal*. The publication comes at an opportune moment, in time for the Ministerial Conference on Civil Registration and Vital Statistics in Asia and the Pacific, to be held in Bangkok from 24 to 28 November 2014. As the Chair and Vice-Chairs of the Regional Steering Group for CRVS in Asia and the Pacific, we are encouraged to see the growing momentum for improving CRVS systems strengthened through the “Get every one in the picture” Asia-Pacific initiative.

The “Get every one in the picture” initiative is guided by the Regional Steering Group, which is composed of national government representatives from the civil registration, health and statistical sectors, along with representatives from the relevant development partner organizations.

The Journal supports the Regional Steering Group’s vision that all people in Asia and the Pacific should benefit from universal and responsive CRVS systems that facilitate the realization of their rights and support good governance, health and development.

Civil registration is critical to every person because it is the basis for establishing one’s legal identity. For Governments, complete population registers and accurate vital statistics from civil registration systems support fundamental functions of public administration, including socioeconomic planning, national identity schemes, ensuring the integrity of voter lists, responding to demographic and public health trends, and measuring progress and inequalities in achieving development goals.

We would like to express our appreciation to the authors who have applied their expertise to highlight the importance of CRVS in promoting development, realizing human rights and facilitating access to social protection in the two articles entitled “A development imperative: civil registration and vital statistics systems in the Asia-Pacific region” and “Civil registration, human rights and social protection in Asia and the Pacific”. Special thanks go to the countries that have shared their recent experiences in improving CRVS in the article entitled “Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences”.

More work is needed to gather further information about country experiences and innovative approaches applied to ensure effective, sustainable and scalable improvements in CRVS systems. The research agenda which is presented in the last article, entitled "Towards a research agenda for civil registration and vital statistics in the Asia-Pacific region", highlights the clear need for further research on CRVS. It is our hope that the articles in this important issue of the *Asia-Pacific Population Journal* will spur increased interest in CRVS and further contributions to it from the academic community.

H.E. Dr. Neil Sharma
Chair of the Regional Steering Group
Minister of Health, Fiji

Dr. Enrique A. Tayag
Vice-Chair
Assistant Secretary
of Health, Philippines

Dr. C.Chandramouli
Vice-Chair
Registrar-General
and Census
Commissioner, India

Mr. Peter Harper
Vice-Chair
Deputy Australian
Statistician, Australia

For more information on the regional initiative "Get everyone in the picture", please visit www.getinthepicture.org.

Introduction

In this series of articles, the role of universal civil registration and vital statistics (CRVS) systems is examined as an essential tool for good governance and inclusive development. Fully functional CRVS systems generate valuable data and contribute to strengthened administrative systems and improved service delivery. Ultimately, CRVS systems furnish the administrative backbone for sustainable and inclusive development and are fundamental to the realization of human rights and the efficient provision of social protection.

This coverage is timely in view of the fact that, in November 2014, ESCAP will host the Ministerial Conference on Civil Registration and Vital Statistics in Asia and the Pacific, which will be co-organized by the Asian Development Bank, Plan International, Office of the United Nations High Commissioner for Refugees, United Nations Children's Fund, United Nations Development Programme, United Nations Population Fund and World Health Organization. The Conference will be the culmination of a series of activities and events resulting from the call in 2009 by the ESCAP Committee on Statistics for urgent action to improve the capacity of countries to produce vital statistics.

This special issue of the *Asia-Pacific Population Journal* contains four articles dealing with different aspects of CRVS and related developments at the regional and country levels, bringing new evidence to bear on the rationale for strengthening CRVS systems as an imperative for statistics, governance, human rights and development.

In the first article in the series, the case is made for investing in CRVS systems; the current situation in countries in the region is described, and the emergence and development of regional collaboration on CRVS is summarized.

In the second article, the actions taken in specific countries to strengthen their CRVS systems are highlighted, and the lessons learned are described, with several innovative approaches being showcased.

The third article contains a description of the relationships between CRVS systems (civil registration and population databases in particular), legal identity, the realization of human rights and access to basic social protection, using country examples from the Asia-Pacific region for these purposes.

In the fourth and final article, the importance of building a sound evidence base for efforts to improve CRVS is highlighted, and a framework for prioritizing research activities is proposed. Research can make a critical contribution to the strengthening of CRVS by showing how innovation and new technologies can help to overcome barriers that impede progress towards improved CRVS.

In documenting current challenges and opportunities in these areas, it is hoped that these articles will contribute to the growing momentum to improve CRVS in the Asia-Pacific region, and pave the way for future research in preparation for the Conference in November 2014.

A development imperative: civil registration and vital statistics systems in the Asia-Pacific region[1]

Abstract

The current status of civil registration and vital statistics (CRVS) systems in Asia and the Pacific is described in this paper, and the case is made for investing in CRVS. In addition, there is a summary of the development of the Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific.

The paper highlights the fact that, while many countries in the ESCAP region do not have well-functioning CRVS systems, a new momentum for improving CRVS is building. This impetus is being driven by the growing demands for accountability and results and for improved equity and rights-based approaches to development challenges, and by the immense potential for innovation and new technologies to accelerate progress in CRVS improvement.

The momentum is further reinforced by the Regional Strategic Plan, which has been endorsed by countries in the ESCAP region to stimulate and support the actions required to strengthen CRVS.

By Carla Abouzahr, Claudia Stein, Nigel Chapman, Daniel Toole, Christophe LeFranc, Kaushal Joshi and Rikke Munk Hansen

---

[1] Carla Abouzahr, Chief Executive Officer, CAZ Consulting; Claudia Stein, Director, Division of Information, Evidence, Research and Innovation, World Health Organization Regional Office for Europe; Nigel Chapman, Chief Executive Officer, Plan International; Daniel Toole, Regional Director of UNICEF East Asia and the Pacific Regional Office; Christophe LeFranc, Regional Adviser on Population and Development, Asia and the Pacific Regional Office; Kaushal Joshi, Senior Statistician, Development Indicators and Policy Research Division, Asian Development Bank; Rikke Munk Hansen, Chief, Economic and Environment Statistics Section, Statistics Division, ESCAP.

Background

In recent years, the Asia-Pacific region has achieved high rates of economic growth accompanied by substantial reductions in extreme poverty. However, these gains have been accompanied by an array of complex development challenges, including climate change, environmental degradation, political uncertainty, natural disasters, persistent pockets of poverty and rising inequalities. With over 4.3 billion people – two thirds of the world's population – living in the region, these challenges have profound implications for global development. Dealing with them requires good governance, effective institutions and development policies that are based on timely and reliable data. The priority of the post-2015 development agenda will be to ensure that poor, marginalized and hard-to-reach populations can reap the benefits of development, and to meet the growing expectations and demands for accountability on the part of civil society, donors and development partners (Brooks and others, 2013; ADB, 2011 and 2012; OECD, 2013). The ability of Governments to respond adequately to these many challenges is constrained when they do not have adequate information on their populations upon which to base policies and plans (PARIS21, 2012).

What is civil registration?

Civil registration is defined as "the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events … pertaining to the population as provided through decree or regulation in accordance with the legal requirements in each country" (United Nations, Department of Economic and Social Affairs, 2013). Vital events are those that concern the life and death of individuals, as well as their family members and their civil status. They include births and deaths as well as marriages, divorces and annulments, adoptions, legitimations and recognitions. Civil registration is carried out primarily for the purpose of providing a permanent record of these events and the related legal documentation. Because, in principle, these records cover the whole population and are available on a continuous basis, they offer the most complete and timely source of vital statistics on the population in a country.

Role of CRVS in economic and social development

Well-functioning CRVS systems can produce multiple benefits at the individual and societal levels. At the individual level, the official registration of important life events, such as births and deaths (including the recording of the cause of death), enables individuals to establish legal identity, civil status and family relationships, to participate in modern societies, and to exercise their civil and political rights. At the societal level, vital statistics generated through civil registration provide indispensable information about the demographics and health of the population, rendering policies and interventions more effective and responsive to peoples' needs. CRVS systems are essential to good governance because they facilitate individual participation in society and provide administrators with the tools and institutional underpinnings for the efficient delivery of services and benefits to the people. CRVS systems provide critical information for development, identifying individuals and populations at risk and enabling the monitoring and evaluation of the effectiveness of interventions. Historical and contemporary analyses have documented the positive impacts of universal CRVS on health, survival and socioeconomic development (Breckenridge and Szreter, 2012; Phillips and others, forthcoming). In situations of emergency and displacement, birth registration may protect children from risks and facilitate family tracing and reunification.

Benefits for individuals and families

Functioning civil registration benefits individuals and families in multiple ways, as shown in the paper by Gonzalez Lopez and others (2014) in the present issue of the *Journal*. The registration of infants at birth records key elements of identity and family relationships, contributes to establishing entitlement to nationality under the law, and facilitates access to a range of economic and social services, including health care, child protection and benefits, schooling, academic and professional qualification, and employment (UNICEF, 2013b). Proof of identity enables people to claim inheritance and insurance benefits, spousal pensions, and compensation following, for example, occupational accidents or military action (Cooper, 2011; UNICEF and Plan International, 2006). Although the registration of birth does not in itself guarantee access to education, health, social protection or citizenship, its absence can place those fundamental rights beyond a person's reach. Not having a national identity document has profound economic and financial implications and can be a determining factor in the cycle of poverty (Harbitz and Del Carmen Tamargo, 2009).

Individuals who are legally empowered are better able to participate in the modern economy by, for example, opening bank accounts, taking out loans, purchasing property and investing in businesses. They are also more aware of their rights and entitlements, and better able to hold authorities to account and to participate in political processes by voting in elections and standing for electoral office. In short, civil registration empowers individuals and makes the State more accountable for the provision of health, education, social protection, legal protection and other services (Harbitz and Boekle-Giuffrida, 2009).

Persons who are registered and who hold civil registration documentation are less vulnerable to statelessness and the associated protection risks

(Rose, 2006).[2] In addition, proof of age facilitates the prosecution of perpetrators of crimes against children, such as child trafficking, sexual offences, early recruitment into the armed forces, child marriage and child labour (Thomas, 2005). It can also prevent children below the age of criminal responsibility from being prosecuted and imprisoned with adults (Cody, 2009). The availability of legal proof of marriage and divorce is particularly important for female heads of household and the families they support in terms of accessing broader public services, such as education and health services. Proof of marriage can be instrumental in protecting women's rights of access to and guardianship of children (Wallace and others, 2012; Sumner and Lindsey, 2011), and in helping them to prove entitlement to inheritance, spousal benefits and to nationality under the law or at least legal residency in a country. The registration of deaths is essential for claims of inheritance, insurance, and survivor and spousal benefits, and for claiming citizenship by descent. More broadly, non-discriminatory civil registration can contribute to reducing gender and economic inequalities, and promote social inclusion, especially among more marginalized sectors of the population, including through the facilitation of durable solutions for the displaced by documenting links to countries of origin.[3]

Benefits for societies: governance and statistics

Equally important is the fact that the civil registration system is the most efficient source from which to produce accurate, complete, timely and continuous information on vital events, notably births and deaths. As emphasized in the "United Nations principles and recommendations for a vital statistics system", the vital statistics derived from a civil registration system can provide annual flow statistics from the smallest civil divisions, a characteristic that no other data collection system can furnish (United Nations, Department of Economic and Social Affairs, 2013). Having knowledge of the size and characteristics of a country's population in a timely manner is a prerequisite to socioeconomic planning and informed decision-making. Vital statistics and their subsequent analysis and interpretation are essential for setting targets, monitoring and evaluating economic and social plans, and measuring important demographic indicators of health and survival, such as the expectation of life at birth and the infant mortality rate.

Vital statistics are also invaluable for planning, monitoring and evaluating such programmes as primary health care, social security, family planning, maternal and child health, nutrition, education, public

---

[2] See https://icvanetwork.org/system/files/versions/5%20-%20Draft%20Conclusion%20on%20Civil%20Registration%20for%20Submission%20to%20ExCom.pdf.

[3] *Official Records of the General Assembly, Sixty-eighth Session, Supplement No.12A* (A/68/12/Add.1), chap.III, sect.A.

housing and humanitarian planning.[4] Among the demographic uses of vital statistics are the preparation of population estimates and projections; studies of mortality, fertility and nuptiality; and the construction of life tables.

The vital statistics and cause-of-death data that are a by-product of civil registration provide essential epidemiological intelligence to guide policy reforms aimed at reducing premature mortality and at improving the allocative efficiency and effectiveness of health systems by allowing for better choices and better quality service provision. The timely recording of deaths by cause can provide early insights into trends in disease prevalence, thus helping policymakers to design prevention or intervention strategies. Information on unusual patterns of deaths and deaths by causes may indicate to public health officials that there is a need for intervention. Clear examples demonstrating the critical importance of vital statistics in improving population health include the stimulation of epidemiological research into the causes of rising lung cancer mortality in the United Kingdom of Great Britain and Northern Ireland and other countries immediately after the Second World War (Doll and Peto, 1976), and the evaluation of population-level interventions against road traffic injuries some two decades later (Thun and others, 1997). The subsequent reductions in premature mortality would likely have taken much longer without the evidence that well-functioning civil registration systems provided.

Continuity in the availability of good-quality vital statistics and their subsequent analysis and interpretation are essential for setting results-based time-bound targets for evaluating economic and social plans. Vital statistics from civil registration records are the basic data for reliably measuring indicators of fertility and mortality, including the total fertility rate, infant and under-5 mortality rates, the maternal mortality ratio, life expectancy at birth and the crude death rate. These are important indicators for measuring development progress, including progress towards achieving the Millennium Development Goals.

Some countries in the Asia-Pacific region are building upon and extending civil registration by ascribing to each individual at birth a unique identification number that can subsequently be used in relation to various governmental services, including electoral registers and employment, health and education services.[5] The resulting population registers can be used to generate statistics not only on population size and growth but also on migration and population distribution. Recent

---

[4] *Official Records of the General Assembly, Sixty-eighth Session, Supplement No.12A* (A/68/12/Add.1), chap.III, sect.A.

[5] See, for instance, "Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences" by C. Abouzahr and others in the present issue of the *Journal*.

years have seen the development of stand-alone population identification systems, consisting of the electronic individual identification of the adult population – often using biometric techniques such as fingerprints or iris scans – in order to permit the accurate distribution of goods and services to those eligible. These approaches generally do not commence at the birth of an individual (few biometric techniques are appropriate for use with infants and children), nor do they have systematic ways of ensuring the exclusion of persons who have died. It is also not always clear how such systems are linked to the production of vital statistics. In several settings, concerns have been expressed about the lack of a sound legal basis for these approaches (Gelb and Clark, 2013).

When civil registration input for the compilation of vital statistics does not exist or is deficient, countries have to turn to alternative data sources, such as the population census or household sample surveys, to estimate the necessary vital statistics. Fertility, mortality and nuptiality statistics may also be collected through demographic and health surveillance in specific sites or nationally representative sample areas. However, these methods are not a substitute for a civil registration system because they cannot provide detailed, subnational estimates in regular, annual intervals with universal coverage (Hill and others, 2007).

Overview of CRVS in Asia and the Pacific

The ESCAP region[6] has some of the most highly developed and longstanding CRVS systems in the world, but also some of the weakest and most dysfunctional. Information on the coverage and completeness of vital events registration in individual countries can be obtained from different sources. One source of data is reporting by countries to the United Nations Statistics Division. The reported coverage of birth registration in Asia ranges from a low of 24 per cent in Nepal to almost 100 per cent in more developed economies (see table 1). In the Pacific, birth registration coverage also has a wide range, with complete coverage in developed economies and coverage as low as 26 per cent in Tuvalu. Globally, in general, the coverage of death registration is lower than that of birth registration. Although it is usually complete in developed economies, in settings in least developed countries such as Nepal and Tuvalu, only 9 per cent of deaths are reportedly registered (see table 1). However, these figures should be interpreted with caution. Reporting is often out of date, and formal quality ascertainment checks are rarely undertaken. A less positive picture emerges from the results of country assessments of key aspects of their CRVS systems (discussed later in this section), which reveal systemic deficiencies that inhibit their effectiveness and utility.

---

[6] See www.unescap.org/about/member-states.

Table 1. Coverage of birth and death registration in Asia as reported to the United Nations Statistics Division

Country/area	Birth registration coverage		Death registration coverage	
	Births registered (percentage)	Year of most recent report	Deaths registered (percentage)	Year of most recent report
Afghanistan	NA		NA	10.6
Armenia	≥90	2010	100	1994
Azerbaijan	99	1994	≥90	2001
Bangladesh	NA		<90	1997
Bhutan	NA		NA	
Brunei Darussalam	75-89	2003	75-89	2003
Cambodia	NA		NA	
China[a]	90	1994	90	1994
Democratic People's Republic of Korea	NA		NA	
Georgia	≥90	2001	≥90	2000
Hong Kong, China	≥90	2011	≥90	2011
India[b]	53	1994	48	1994
Indonesia	60-70	1993	60-70	1993
Iran (Islamic Republic of)	≥90	2009	≥90	2009
Japan	≥90	2012	≥90	2012
Kazakhstan	≥90	2000	≥90	2001
Kyrgyzstan	≥90	2012	≥90	2012
Lao People's Democratic Republic	NA		NA	
Macao, China	≥90	2012	≥90	2012
Malaysia	≥90	2012	≥90	2012
Maldives	≥90	2001	≥90	2001
Mongolia	100	1994	100	1994
Myanmar	90	1994	90	1994

Country/area	Birth registration coverage		Death registration coverage	
	Births registered (percentage)	Year of most recent report	Deaths registered (percentage)	Year of most recent report
Pakistan	35	1994	35	1994
Philippines	75-89	2002	50-74	2002
Republic of Korea	≥90	2011	≥90	2012
Russian Federation	≥90	2010	≥90	2010
Singapore	≥90	2012	≥90	2012
Sri Lanka	≥90	2009	≥90	2009
Tajikistan	≥90	2009	75-89	2009
Thailand	70	1994	60	1994
Timor-Leste	NA		NA	
Turkey	≥90	2010	75-89	2010
Turkmenistan	≥90	1998	≥90	1998
Uzbekistan	≥90	2001	≥90	2001
Viet Nam	<90	1993	NA	

Source: United Nations Statistics Division, "Coverage of birth and death registration", August 2012, using Primary data only. Available from http://unstats.un.org/unsD/demographic/CRVS/CR_coverage.htm. Accessed 20 April 2014.

Notes: [a] Figures refer to completeness for civil registration rather than for vital statistics, as the country does not process civil registration records for statistical purposes.

[b] Figures refer to the coverage of vital statistics obtained through civil registration even if the vital statistics published were obtained from a dual record system.

NA – not available.

Table 2. Coverage of birth and death registration in the Pacific as reported to the United Nations Statistics Division

Country/area	Birth registration coverage		Death registration coverage	
	Births registered (percentage)	Year of most recent report	Deaths registered (percentage)	Year of most recent report
American Samoa	≥90	1993	≥90	1993
Australia	≥90	2012	≥90	2012
Cook Islands	≥90	1999	98	1994
Fiji	≥90	1999	97	1994
French Polynesia	<90	1994	<90	1994
Guam	≥90	2003	≥90	2003
Kiribati	70	1994	60	1994
Marshall Islands	≥90	2001	≥90	2001
Micronesia (Federated States of)	NA		NA	
Nauru	≥90	1995	≥90	1995
New Caledonia	≥90	1999	≥90	1999
New Zealand	≥90	2012	≥90	2012
Niue	100	1994	100	1994
Northern Mariana Islands	<90	1989	<90	1989
Palau	<90	1999	<90	1999
Papua New Guinea	50-74	2004	50-74	2004
Samoa	<90	1996	<90	1998
Solomon Islands	75	1994	75	1994
Tonga	95	1994	90	1994
Tuvalu	26	1994	9	1994
Vanuatu	40	1994	30	1994

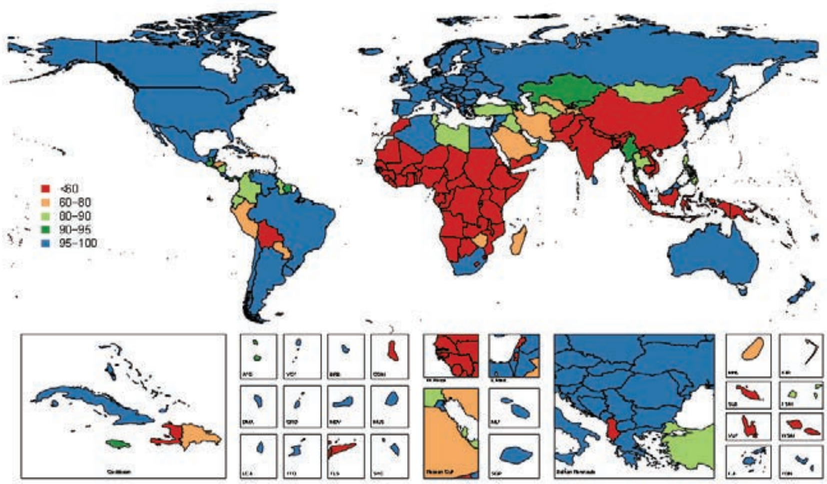
Source: United Nations Statistics Division, "Coverage of birth and death registration", August 2012, using Primary data only. Available from http://unstats.un.org/unsD/demographic/CRVS/CR_coverage.htm. Accessed 20 April 2014.

Note: NA – not available.

Deaths are usually less likely than births to be registered because there are fewer incentives to do so apart from the need to establish inheritance rights or to claim social benefits. When deaths remain unregistered, surviving family members face difficulties in claiming rights to property, pensions or insurance, and even, in some causes, in proving nationality. Discriminatory laws may prevent a woman who has been widowed from registering the birth of her child alone or from conferring her nationality to her son or daughter (Wallace and others, 2012; Plan Limited, 2009). From a government perspective, the failure to register deaths can result in fraudulent benefit claims and invalid electoral registers. There are also important limitations in the quality of the information on causes of death, as shown in figure 1. In many countries in the ESCAP region, fewer than 60 per cent of notified deaths contain accurate information on the cause of death, and such data as are available are derived from hospital information systems rather than from civil registration and are thus not representative of the general population.

Figure 1. Availability of cause-of-death statistics from CRVS systems

(percentage of total deaths that have usable information on cause of death)

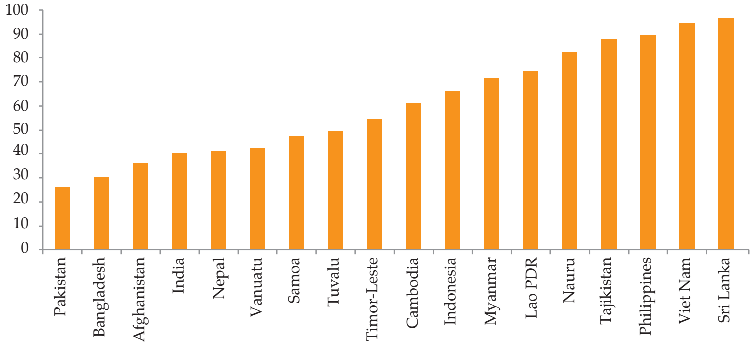


Source: H. Wang and others, "Age-specific and sex-specific mortality in 187 countries, 1970-2010: a systematic analysis for the *Global Burden of Disease Study 2010*", *Lancet*, vol. 380, No. 9859 (15 December 2012), pp. 2071-2094.

An alternative source of information on birth registration coverage is from household surveys that ask respondents whether children under 5 years of age in the household have had their births registered. According to this source, only 44 per cent of all births in the Asia-Pacific region (excluding China) are formally registered, and two out of three children in South Asia have no official record of their names, parentage, date or place of birth (UNICEF, 2013b). In using these data, it is essential to be aware that there are differences in definitions from those of the United Nations, as well as some limitations in data collection methods. For statistical purposes, the standard definition (of the United Nations) of birth registration completeness refers to the proportion of live births that were registered within one year or the legal time frame for registration applicable in the country. By contrast, the indicator used in household surveys is the percentage of children under 5 years of age (0 to 59 months) with a birth certificate or whose birth was reported as registered with civil authorities at the time of the survey. Such self-reports are subject to respondent error. Interviewees may not always understand who these authorities are and they may misinterpret the notification to a church or village chief of a birth as formal registration, resulting in the overreporting of registration coverage. Alternatively, they may not realize that the birth has been registered through the health authorities, leading to the underreporting of coverage. Sampling errors must be considered when interpreting disparities because sample sizes may be too small to generate statistically significant results for specific population groups. It may be noted that household surveys are not used for developing estimates of death registration coverage.

Bearing these caveats in mind, the data nonetheless provide some valuable insights into birth registration in selected ESCAP countries. Figure 2 shows the reported percentage of children under 5 years of age whose births have been registered, ranging from a low of under 30 per cent in Pakistan to a high of almost 100 per cent in Sri Lanka. Overall, the data suggest that birth registration rates among girls and boys are very similar (data not shown). By contrast, different economic, social and ethnic backgrounds are associated with very different levels of birth registration.

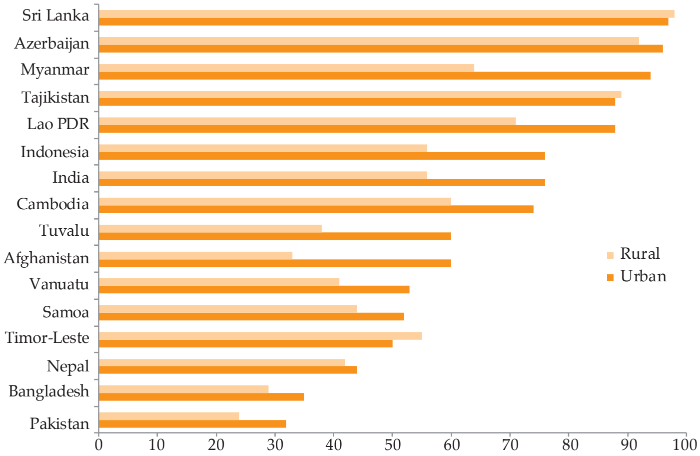
Figure 2. Percentage of children under 5 years of age whose births have been registered, selected countries in the Asia-Pacific region, 2005-2012



Source: United Nations Children's Fund, Every *Child's Birth Right: Inequities and Trends in Birth Registration* (New York, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

Births occurring in families living in urban areas are more likely to be registered than those in rural areas or on remote islands (see figure 3). For example, in Afghanistan and India, birth registration in urban areas is twice that in rural areas. There are also wide discrepancies in countries such as Indonesia and Myanmar and in countries with island communities that are difficult to access, such as Samoa and Tuvalu.

Figure 3. Percentage of children under 5 years of age whose births have been registered, by rural/urban area, selected countries in the Asia-Pacific region, latest year available

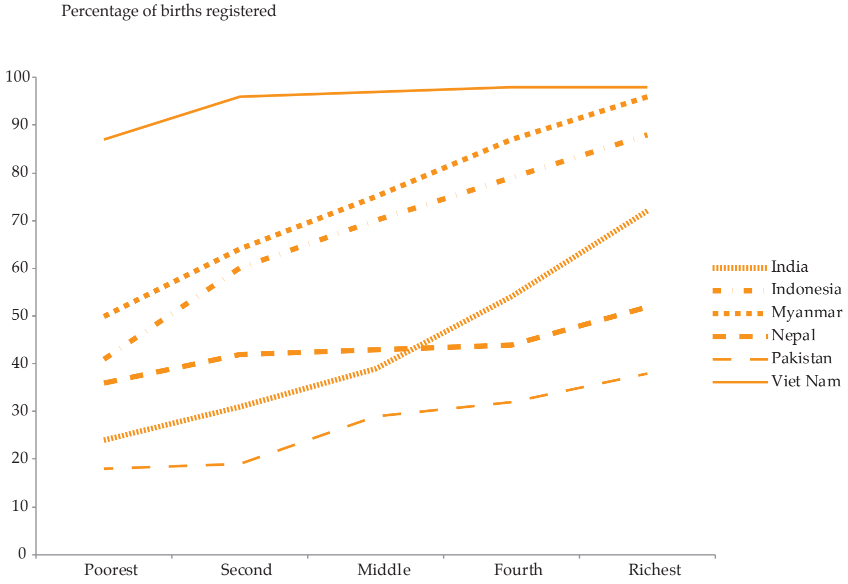


Source: United Nations Children's Fund, *Every Child's Birth Right: Inequities and Trends in Birth Registration* (New York, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

In most regions, birth registration rates tend to be the highest among the richest 20 per cent (quintile) of the population (see figure 4). Even in Viet Nam, which has high levels of birth registration overall, registration in the poorest households is considerably lower than in the higher wealth quintiles.

Religion and ethnicity appear to have some influence over birth registration levels. In certain cultures and population groups, greater emphasis and value may be placed on traditional customs or practices (such as naming ceremonies) than on the formal process of birth registration. Ethnicity and religion can affect birth registration levels in other ways since, in some countries, minority groups are more likely to live in remote areas, where birth registration services are either lacking or difficult to access. Even in countries where birth registration is almost universal, children from ethnic minorities have birth registration rates below the national average. For example, in Australia, of the 12,500 births registered in the indigenous population in 2007, only 76 per cent had actually occurred in the year in which they were registered, with the remainder having taken place one or more years earlier (ABS, 2007).

Figure 4. Children under 5 years of age whose births have been registered, by household wealth quintile



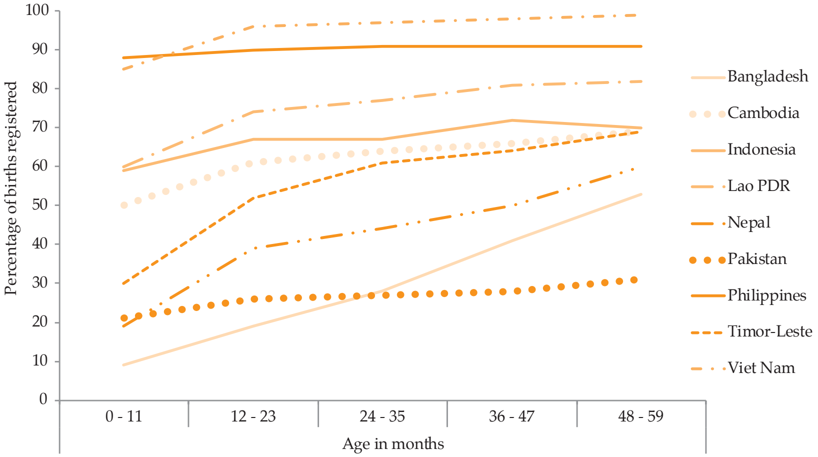
Source: United Nations Children's Fund, *Every Child's Birth Right: Inequities and Trends in Birth Registration* (New York, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

The Convention on the Rights of the Child, to which all States in the region are parties, stipulates that infants should be registered immediately after birth.[7] United Nations standards indicate that registration should occur within a maximum of 30 days of the birth (United Nations, Department of Economic and Social Affairs, 2013). While the global rate of birth registration grew from approximately 58 per cent to 65 per cent between 2000 and 2010, the United Nations Children's Fund (UNICEF) has estimated that 230 million children under 5 years of age have not been registered, and half of these are in Asia (UNICEF, 2013b). However, many births are never registered, or not registered until much later (for example, in order to attain a birth certificate for school attendance or to gain access to health, social protection and other services). This is reflected in the data for a number of countries, showing significant increases in the proportion of children registered in older age groups (see figure 5). In several countries, birth registration levels are higher among older children; in Bangladesh, Nepal and Timor-Leste, 4-year-old children are more than twice as likely to have their births registered than infants under 1 year of age. In other countries, such as India, Indonesia, Pakistan and the Philippines, registration rates are relatively uniform across all age groups. The increase in the registration of older children is to be welcomed, and in some countries contacts between families and the health sector, such as immunization, are used as opportunities to encourage registration. However, there are major disadvantages in delaying birth registration. Unregistered children are at an increased risk of trafficking, labour exploitation and exclusion from social protection or other services (Gonzalez Lopez and others, 2014). Girls are particularly exposed to sexual exploitation, early marriage and early pregnancy. The death of an unregistered child is itself very unlikely to be registered, resulting in the serious under counting of infant and child mortality.

---

[7] United Nations, Treaty Series, vol. 1577, No. 27531.

Figure 5. Children under 5 years of age whose births have been registered, by age in months at registration, selected countries in the Asia-Pacific region



Source: United Nations Children's Fund, Every Child's Birth Right: Inequities and Trends in Birth Registration (New York, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

Challenges in strengthening CRVS in the Asia-Pacific region

A third source of information on the performance of CRVS in the Asia-Pacific region is the rapid self-assessments conducted by several countries in the context of the development of the Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific (presented in more detail in the following section). These assessments have used the rapid assessment tool developed by the World Health Organization (WHO) and the University of Queensland (WHO and University of Queensland, 2010a), which involves a review by country stakeholders, including the government agencies responsible for the registration, statistics, health and other sectors as appropriate for each country. The assessment tool consists of 25 questions about the functioning of national CRVS, grouped into 11 subject areas: the legal framework for CRVS; infrastructure and resources; organization and functioning; coverage of birth and death registration; data storage and transmission; use of the International Classification of Diseases; cause-of-death certification and quality; statistical coding of causes of death; coder qualification and training; data quality and plausibility; and data access, dissemination and use. Each question asks the assessors to select one of four scenarios that most closely reflects the country situation. A numerical value (0, 1, 2 or 3) is attached to each scenario, which indicates how well this aspect of the system functions, and scores can be added for the 25 questions and converted into a percentage. The overall score offers a reasonable indication of the functionality and quality of the national CRVS system (see table 3). It is important to note that the self-assessments are inevitably subjective in nature. Nonetheless, in general, the findings correspond well with objectively verifiable indicators (Mikkelsen and others, forthcoming).

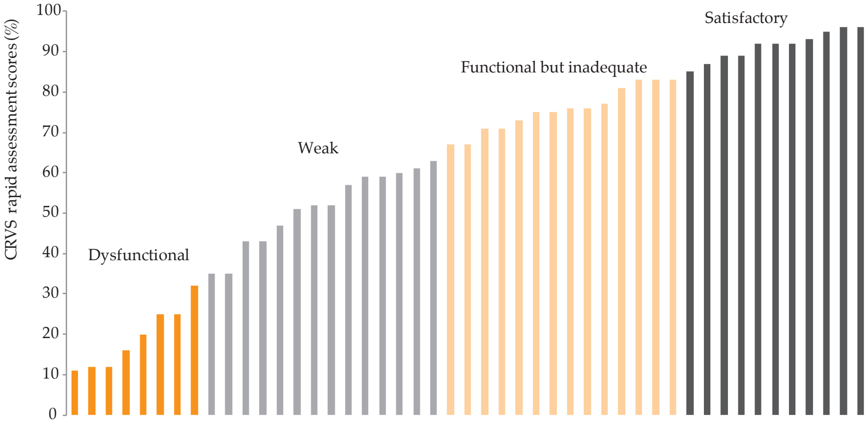
Table 3. Rapid assessment scores and rating schema

Score (percentage)	Rating	Actions required
0-34	Dysfunctional	The system requires substantial improvement in all areas.
35-64	Weak	Many aspects of the system do not function well and multiple issues require attention.
65-84	Functional but inadequate	The system works but some elements function poorly and require attention; specific weaknesses of the system should be identified by completing a comprehensive review.
85-100	Satisfactory	Minor adjustments may be required in an otherwise well-functioning system.

Source: L. Mikkelsen and others, "Monitoring data quality and progress with civil registration and vital statistics systems: a global assessment". Lancet (forthcoming).

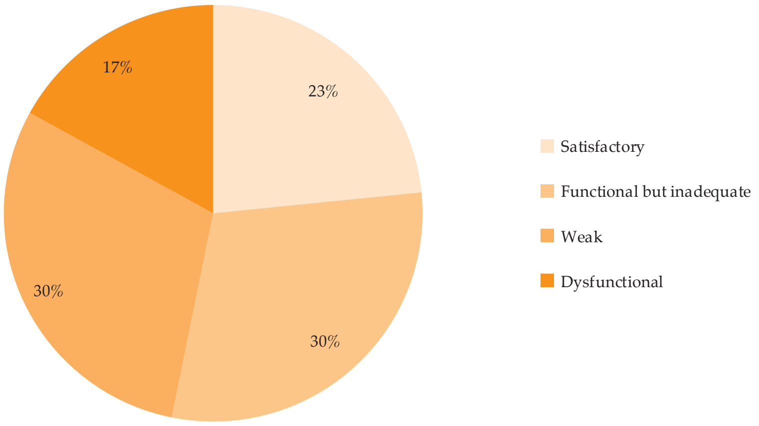
As shown in figure 6, average scores range from highs of over 95 per cent to a low of just 11 per cent (Mikkelsen, 2012). Of the 47 countries that had completed an assessment by the end of 2012, 11 categorized their CRVS systems as satisfactory, while 8 reported their systems to be dysfunctional, 14 as weak and 14 as functional but inadequate (see figure 7). Average scores tended to be lower for Pacific island countries compared with countries in Asia (Mikkelsen, 2012). The biggest challenges identified by countries during these rapid assessments were in relation to data quality assurance, cause-of-death certification and coding, and data management, analysis, dissemination and use.

Figure 6. Average scores from CRVS rapid assessments in 47 ESCAP countries, 2010-2012



Source: L. Mikkelsen, "Improving civil registration and vital statistics systems: lessons learnt from the application of HIS Hub tools in Asia and the Pacific", Working Paper Series, No. 24 (Herston, Australia, Health Information Systems Knowledge Hub, University of Queensland, 2012).

Figure 7. Overall rapid assessment scores of 47 ESCAP countries, 2010-2012



Source: L. Mikkelsen, "Improving civil registration and vital statistics systems: lessons learnt from the application of HIS Hub tools in Asia and the Pacific", Working Paper Series, No. 24 (Herston, Australia, Health Information Systems Knowledge Hub, University of Queensland, 2012).

The rapid assessment is a quick way of producing an overview of the strengths and weaknesses of a CRVS system but it is insufficient as a basis for developing a national improvement plan, which requires a much more detailed review that tests the extent to which the CRVS system is aligned with international standards (WHO and University of Queensland, 2010b). As of May 2014, several countries were in the process of planning or conducting comprehensive assessments. Fiji, the Philippines, Sri Lanka and Vanuatu have established multisectoral coordination groups to prepare national improvement plans. While there is inevitable heterogeneity in the detailed contents of the plans, some common features include strategies to improve access to and quality of registration, to increase demand for registration among the public and to enhance the production of vital statistics. Examples of activities in country plans include:

- Mobilizing political will and high-level commitment across government agencies and improving coordination among responsible line ministries. Updating, strengthening and enforcing legal frameworks and regulations.

- Mobilizing financial, human and infrastructure resources and developing capacities through training for birth and death registrars, for physicians certifying causes of death, for statistical coders, and for analysts involved in the production, analysis and dissemination of vital statistics.

- Improving access to registration; for example, expanding the pool of informants of vital events to include such groups as village health workers, local police officials, teachers, religious leaders and funeral service officials.

- Introducing innovative methods, such as short messaging services and mobile outreach registration units, to cover remote and mountainous areas, and establishing seasonal offices for registration in areas with extreme weather conditions.

- Promoting public awareness of the importance of registering life events through, for example, registration drives, media campaigns and coordination with teachers, health workers and local non-governmental organizations to highlight the benefits of registration.

- Linking registration to service delivery, particularly maternity care, post-partum care and immunization. Promoting the use of birth registration certificates to such services as school admission, while ensuring that the absence of a birth certificate does not impede the enjoyment of such rights as education or health care. Promoting the use of death certificates for burial purposes and acquiring hereditary and property rights.

- Eliminating fees for the registration of events and ensuring that penalties for late registration do not deter people from registering.

- Encouraging better coordination among development partners in order to ensure harmonization, alignment and the efficient use of the available resources.

A growing momentum to strengthen CRVS

Global demand for improved CRVS

In recent years, there has been a growing recognition of the need to tackle the weaknesses of CRVS systems in the developing world (see box). The momentum, to which ESCAP has contributed significantly, is fuelled by an increasing awareness that more reliable and timely data are needed for tracking global health goals.[8, 9] It is also stimulated by human rights imperatives, exemplified by the statements of commitment of the United Nations bodies concerned with the protection of human rights, including the Human Rights Council[10] and the Office of the United Nations High Commissioner for Refugees (UNHCR) Executive Committee “Conclusion on civil registration”.[11]

Demands for accountability and results are critical new drivers of the momentum for improvement in CRVS. For example, in 2011, the Commission on Information and Accountability for Women’s and Children’s Health established a framework for global reporting on, oversight of, and accountability for women’s and children’s health (WHO, 2011 and 2012). The Commission calls upon countries to establish a system for the registration of births, deaths and causes of death, acknowledged to be the most effective and efficient source of data for monitoring progress in under-5 and maternal mortality (WHO, 2011). Progress in implementing the Commission’s recommendations is tracked by an independent expert review group, which reports to the United Nations Secretary-General (WHO, 2012). In its 2013 report, the independent expert review group called for a target on universal and effective CRVS systems to be included in the post-2015 United Nations development agenda (WHO, 2013). The group noted the important role of CRVS in the country-based monitoring of development goals, and in assuring individual legal identity; access to services; political, economic and social participation; and the realization of human rights. Positioning CRVS within the broader development, statistical and human rights

---

[8] See General Assembly resolution 55/2 of 18 September 2000.

[9] See General Assembly resolution 64/265 of 20 May 2010.

[10] See General Assembly resolution 64/265 of 20 May 2010.

[11] *Official Records of the General Assembly, Sixty-eighth Session, Supplement No.12A* (A/68/12/Add.1), chap.III, sect.A.

communities is timely given the lively interest in CRVS in areas beyond health monitoring.

Regional initiative for CRVS

The starting point for the ESCAP regional initiative to improve CRVS was the decision by the ESCAP Committee on Statistics, at its first session in 2009, to call for urgent action to improve the capacity of countries to produce vital statistics.

Subsequently, in 2010, a regional forum took place, bringing together the various sectors and development partners and expanding the focus to include both civil registration and vital statistics. A regional partnership for CRVS was established, bringing together 21 entities and agencies. In 2011, ESCAP passed a resolution on CRVS and endorsed the framework for a regional strategy.[12] Further development of the strategy took place during 2012 with technical inputs from partners and countries, resulting in the finalization of the Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific.[13] The Regional Strategic Plan was discussed at a high-level meeting in December 2012, which was attended by 232 participants representing 43 ESCAP member States and associate members, 3 countries from outside the ESCAP region and 23 organizations.[14] In May 2013, at the sixty-ninth session of the Commission, representatives endorsed the Regional Strategic Plan, calling for a multisectoral ministerial conference to be organized in 2014 and for a regional steering group to be organized to provide guidance and oversight for the next steps.[15] The regional steering group was duly established in 2013. It is composed of national government representatives from the civil registration, health and statistical sectors, and from the five subregions of ESCAP, along with representatives from the relevant development partners.

A key forthcoming event is the Ministerial Conference on Civil Registration and Vital Statistics in Asia and the Pacific, which will take place in Bangkok from 24 to 28 November 2014. The Ministerial Conference will bring together ministers representing the civil registration, health and statistics sectors in the region, representatives from organizations working in the area and the media. The aim is to increase awareness of the importance of universal civil registration

---

[12] See Commission resolution 67/12 on improvement of civil registration and vital statistics in Asia and the Pacific. Available from www.unescap.org/resources/escap-resolution-6712-2011-improvement-civil-registration-and-vital-statistics-asia-and.

[13] See E/ESCAP/CST(3)/6/Add.1.

[14] See E/ESCAP/69/26.

[15] See Commission resolution 69/15 on implementing the outcome of the High-level Meeting on the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific.

and reliable vital statistics, and to obtain firm commitments to results and accountability from Governments and development partners through a ministerial declaration and the endorsement of a regional action framework. Partners engaged in preparations for the Ministerial Conference include the Asian Development Bank, ESCAP, Plan International, UNHCR, UNICEF, the United Nations Development Programme, the United Nations Population Fund (UNFPA) and WHO.

The draft regional action framework sets out a shared vision, namely that all people in Asia and the Pacific benefit from universal and responsive CRVS systems that facilitate their rights and support good governance, health and development. It also details three overarching goals and associated targets that are designed to offer measurable outcomes that reflect progress towards the achievement of the vision between 2015 and 2024. The goals and targets recognize the core human rights principles of progressive realization, non-retrogression and equity, and apply to all countries and areas. The three goals are as follows:

Goal 1: Universal civil registration of births and deaths;

Goal 2: All individuals are provided with the legal documentation of the civil registration of births and deaths as necessary to claim identity, civil status and ensuing rights;

Goal 3: Accurate, complete and timely vital statistics (including on causes of death) are produced based on registration records and disseminated.

The achievements of the goals and targets will depend on significant country-level actions to bolster political commitment to CRVS; to support public engagement and participation; to take action to improve coordination; to improve policies, legislation and the implementation of regulations; to strengthen infrastructure, resources, operational procedures and practices; and to enhance data quality, production, dissemination and the use of vital statistics. These are the areas of action put forward in the draft regional action framework.

Conclusions

Bold and visible leadership and the framing of CRVS as a public good and a development imperative will help to maintain the impressive momentum for improvement that currently exists in the Asia-Pacific region. In a region characterized by rapid change and challenges on many fronts, CRVS systems can contribute to a range of development priorities, including the documentation of the identity of each individual, the progressive realization of civil and political rights, increased equity, better targeting of policies and programmes through improved vital statistics, more effective monitoring of the use of national and donor resources, and improved accountability between Governments and citizens. Vital statistics derived from functioning civil registration systems serve a plethora of development needs across multiple sectors.

In the past, development partner support for CRVS was ad hoc and fragmented. Such initiatives as the 1968 World Programme for the Improvement of Vital Statistics and the 1991 International Programme for Accelerating the Improvement of Vital Statistics and Civil Registration Systems (United Nations Statistics Division, 2013) resulted in the production of standards and handbooks but failed to mobilize high-level political commitment across all government departments or to generate the long-term vision needed to ensure sustainability (Padmanabha, 1993).[16] Coordinated regional initiatives that bring together countries, United Nations agencies, development banks, researchers, technical experts and non-governmental organizations can better and more sustainably support the growing demand from countries.

National leadership and political mobilization across multiple sectors are critical ingredients for success, enabling aligned and integrated responsibilities and accountability between key stakeholders. Governments should ensure that planning and coordination are carried out in a proactive, inclusive and productive manner. By conducting comprehensive assessments, establishing functional CRVS coordination committees, and developing system-wide improvement plans, decision makers can bring together all stakeholders in support of a common goal for CRVS improvement. Ongoing research and lesson learning will be needed (as shown in "Towards a research agenda for civil registration and vital statistics in the Asia-Pacific region", by C. Abouzahr and others, the final paper in the present issue of the *Journal*), along with strategies to mobilize the required investments and sources of funding, and effective monitoring and evaluation mechanisms. Strong national leadership enables development partners to coordinate their inputs and to provide a common basket for funding and joint planning. To ensure the sustained commitment of political leaders to substantial action on CRVS, it is necessary to demonstrate the transformative power of CRVS for individuals and for State authorities, as well as the links between CRVS and rights and accountability. The papers in the present issue of the *Journal* provide documentary evidence that this level of commitment is now emerging in the Asia-Pacific region, creating a unique opportunity to position CRVS as a key development imperative that will bring benefits to individuals and to countries as they tackle the economic and social challenges of the coming decades.

---

[16] See E/CN.3/1993/L.2.

Box: Regional civil registration and vital statistics initiatives

Asia and the Pacific

Under the auspices of ESCAP and with support from United Nations agencies and regional organizations, government leaders in the Asia-Pacific region have developed and agreed to a regional programme on CRVS (ESCAP, 2012).[17] A core element of the regional plan is the establishment of a regional support mechanism to respond to the high levels of demand from countries for technical support for assessments, national CRVS development plans and training. In 2013, the Commission passed a resolution calling for a ministerial-level meeting on CRVS in 2014.[18] This meeting would help to mobilize political commitment across sectors and to secure an "all of government" approach to strengthening CRVS.

In the Pacific islands, which include some of the smallest and most remote countries in the world, registering and counting each vital event in a timely manner can be particularly challenging due to the vast distances between islands and the lack of reliable and continuous communications. In response, a strategic plan for improving vital statistics in the Pacific subregion – the Pacific Vital Statistics Action Plan – was developed and is currently being implemented with support from the Brisbane Accord Group and the Secretariat of the Pacific Community (Secretariat of the Pacific Community, 2012). The Plan is aligned with the subregion's 10-year statistical plan, which is being implemented under the auspices of the Secretariat of the Pacific Community. New communication technologies and ways of devolving responsibilities for the registration of events to communities are being developed and tested.

The development of the Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific benefited greatly from the experiences and knowledge gained through the Pacific Vital Statistics Action Plan and the WHO regional strategy for the improvement of CRVS systems in the Eastern Mediterranean Region.

Africa

The significant mobilization of countries and high-level political commitment have been achieved in Africa through the Africa Programme on Accelerated Improvement of Civil Registration

---

[17] See E/ESCAP/CST(3)/6/Add.1.

[18] See E/ESCAP/69/L.5.

and Vital Statistics, led by the United Nations Economic Commission for Africa, the African Union Commission and the African Development Bank, supported by various United Nations agencies and regional and international organizations (United Nations Economic Commission for Africa, African Union Commission and African Development Bank, 2012). The Second Conference of African Ministers Responsible for Civil Registration, held in Durban, South Africa, from 3 to 7 September 2012, endorsed the recommendation of experts that all African countries should conduct comprehensive country assessments of their CRVS systems and formulate country-owned, concrete and time-bound national action plans for the improvement of CRVS systems (United Nations Economic Commission for Africa, African Union Commission and African Development Bank, 2012). The Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics is supported by a medium-term regional CRVS plan (2011 to 2015). The Programme is now institutionalized as a permanent ministerial forum under the African Union Commission structure. A high level of demand is being received from countries for technical support for assessments, the derivation of strategic, prioritized and costed CRVS development plans, and for training in CRVS data collection, analysis and use.

Eastern Mediterranean

The Eastern Mediterranean has recently started to follow the lead provided by the regional platforms in Asia and Africa, and has completed 22 rapid CRVS assessments and 5 comprehensive assessments, using the standardized tools and approaches recommended by leading technical knowledge and resource partners for CRVS. A regional meeting on CRVS was held at the WHO Regional Office in Cairo in May 2013. A regional CRVS plan developed in collaboration with other regional agencies, including ESCAP, the Economic and Social Commission for Western Asia, UNFPA and UNICEF, was endorsed at a meeting of the WHO Regional Committee for the Eastern Mediterranean in October 2013.[19] The League of Arab States has also recently affirmed its commitment to improving its CRVS.

Latin America and the Caribbean

The Inter-American Development Bank has worked on civil registration issues for a decade. This work has included financing projects that seek to improve the interconnectivity and

---

[19] See Regional Committee for the Eastern Mediterranean resolution EM/RC60/R.7 of October 2013.

interoperability between civil registries and identity management and vital statistics agencies in order to ensure the timely and complete reporting of vital events as part of the Strategy for Institutions for Growth and Social Welfare, which was approved by the governing body of the Inter-American Development Bank in 2011. The Pan American Health Organization developed the Regional Plan of Action for Strengthening Vital and Health Statistics in 2008, and its implementation in countries is well advanced.[20] Each country in the region has set a target of maintaining registration coverage depending on the baseline. To date, 11 of 25 countries have reached or surpassed the targets set out in the Regional Plan of Action. A feature of CRVS in the region is the strong role played by the health sector in both the notification and the official certification of vital events, as well as its strong collaboration with national statistics offices in data compilation, analysis and dissemination. However, despite the regional momentum, countries with the least developed CRVS systems have faced difficulties in ensuring that registration is available to all persons due to the poverty and remoteness of many communities. Furthermore, whereas there have been considerable gains in the registration of births, incentives and capacities to register and count all deaths and causes of death need to be strengthened.

References

Abouzahr, C., and others (2014). Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences. *Asia-Pacific Population Journal*, vol. 29, No. 1.

Abouzahr, C., and others (2014). Towards a research agenda for civil registration and vital statistics in the *Asia-Pacific region. Asia-Pacific Population Journal*, vol. 29, No. 1.

Asian Development Bank (ADB) (2011). *Framework of Inclusive Growth Indicators: Key Indicators for Asia and the Pacific 2011 – Special Supplement*. Mandaluyong City, Philippines.

_______________(2012). *Asian Development Outlook 2012*: *Confronting Rising Inequality in Asia*. Mandaluyong City, Philippines.

Australia Bureau of Statistics (ABS) (2007). Births: Australia. No. 3301.0 (29 October). Available from www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/0C4C341C51104DC4CA2573800015C2DC/$File/33010_2006.pdf.

---

[20] Resolution CD48.R6.

Breckenridge, K., and S. Szreter, eds. (2012). *Registration and Recognition: Documenting the Person in World History*. Oxford University Press and British Academy.

Brooks, D.H., and others (2013). A ZEN approach to post-2015: addressing the range of perspectives across Asia and the Pacific. ADB Economics Working Paper Series, No. 327. Mandaluyong City, Philippines: Asian Development Bank.

Cody, C. (2009). Count every child: the right to birth registration. Woking, United Kingdom: Plan Limited. Available from www.planbelgie.be/sites/default/files/user_uploads/count_every_child_-_the_right_to_birth_registration_plan_international_-_engelstalig.pdf Accessed 22 August 2012.

Cooper, E. (2011). Challenges and opportunities in inheritance rights in Uganda. Chronic Poverty Research Centre, Policy Note (February). Available from http://r4d.dfid.gov.uk/PDF/Outputs/ChronicPoverty_RC/PN-Inheritance-Uganda.pdf.

Doll, R., and R. Peto (1976). Mortality in relation to smoking: 20 years' observations on male British doctors. *British Medical Journal*, vol. 2, No. 6051 (December), pp. 1525-1536.

Gelb, A., and J. Clark (2013). Identification for development: the biometrics revolution. Working Paper, No. 315. Washington, D.C.: Center for Global Development. Available from www.cgdev.org/content/publications/detail/1426862. Accessed 18 July 2013.

Gonzalez Lopez, L., and others (2014). Civil registration, human rights and social protection in Asia and the Pacific. *Asia-Pacific Population Journal*, vol. 29, No. 1.

Harbitz, M., and B. Boekle-Giuffrida (2009). Democratic governance, citizenship and legal identity: linking theoretical discussion and operational reality. Working Paper. New York: Inter-American Development Bank.

Harbitz, M., and M. Del Carmen Tamargo (2009). The significance of legal identity in situations of poverty and social exclusion: the link between gender, ethnicity, and legal identity. Technical Note. New York: Inter-American Development Bank.

Hill, K., and others (2007). Interim measures for meeting needs for health sector data: births, deaths, and causes of death. Who counts? No. 3. *Lancet*, vol. 370, No. 9600, pp. 1726-1735. Available from www.who.int/healthinfo/statistics/WhoCounts3.pdf. Accessed 22 August 2012.

Mikkelsen, L. (2010). Rapid assessment of vital statistics systems: evaluation of the application of the WHO/HIS Hub tool in 26 countries in the Asia-Pacific region. Working Paper, No. 10. Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland. Available from www.uq.edu.au/hishub/all-publications. Accessed 22 August 2012.

______________(2012). Improving civil registration and vital statistics systems: lessons learnt from the application of HIS Hub tools in Asia and the Pacific. Working Paper Series, No. 24. Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland.

Mikkelsen, L., and others (forthcoming). Monitoring data quality and progress with civil registration and vital statistics systems: a global assessment. *Lancet*.

Organisation for Economic Co-operation and Development (OECD) (2013). Aid Effectiveness, Paris Declaration and Accra Agenda for Action. Available from www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm. Accessed 20 October 2013.

Padmanabha, P. (1993). Review and evaluation of UNFPA supported projects on civil registration and vital statistics: consultancy report. New York.

Partnership in Statistics for Development in the 21st Century (PARIS21) (2012). *Partner Report on Support to Statistics: PRESS – 2012 Round*. Paris.

Phillips, D.E., and others (forthcoming). Are well-functioning civil registration and vital statistics systems associated with better health outcomes? *Lancet*.

Plan Limited (2009). *Mother to Child: How Discrimination Prevents Women Registering the Birth of Their Child*. Woking, United Kingdom.

Rose, L.L. (2006). Children's property and inheritance rights and their livelihoods: the context of HIV and AIDS in Southern and East Africa. LSP Working Paper, No. 39. Food and Agriculture Organization of the United Nations.

Secretariat of the Pacific Community (2012). The Brisbane Accord Group and the Pacific Vital Statistics Action Plan: outline document. Available from www.spc.int/sdd/index.php/en/component/search/vital%2Bstatistics?ordering=newest&searchphrase=all&limit=20.

Sumner C., and T. Lindsey (2011). Courting reform: Indonesia's Islamic Courts and Justice for the Poor. *International Journal for Court Administration*, vol. 4, No. 1, pp. 3-16.

Thomas, P. (2005). Ending child poverty and securing child rights: the role of social protection: a briefing paper. Plan International.

Thun M.J., and others (1997). Alcohol consumption and mortality among middle-aged and elderly U.S. adults. *New England Journal of Medicine*, vol. 337, No. 24, pp. 1705-1714.

United Nations Children's Fund (UNICEF) (2013a). *A Passport to Protection: A Guide to Birth Registration Programming*. New York. Available from www.refworld.org/pdfid/52b2e2bd4.pdf.

_______________ (2013b). *Every Child's Birth Right: Inequities and Trends in Birth Registration*. New York. Available from www.unicef.org/mena/MENA-Birth_Registration_report_low_res-01.pdf.

United Nations Children's Fund and Plan International (2006). Record, Recognise Respect: Report of the Fourth Asia and the Pacific Regional Conference on Universal Birth Registration. Bangkok, 13-17 March. Available from www.unicef.org/eapro/media_3770.html.

United Nations, Department of Economic and Social Affairs (2013). Principles and recommendations for a vital statistics system, revision 3. Statistical Papers, Series M, No. 19/Rev.3. New York. Available from http://unstats.un.org/unsd/Demographic/standmeth/principles/M19Rev3en.pdf.

United Nations, Economic and Social Commission for Asia and the Pacific (ESCAP) (2012). Outcome statement: well-functioning civil registration and vital statistics systems in Asia and the Pacific. High-level Meeting on the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific, Bangkok, 10 and 11 December. Available from www.globalsummitoncrvs.org/pdf/HLM-Outcome-Document-FINAL.pdf.

United Nations Economic Commission for Africa, African Union Commission and African Development Bank (2012). Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics (APAI-CRVS). Outcome document of the Second Conference of African Ministers Responsible for Civil Registration. Durban, South Africa, 3-7 September. Available from www.uneca.org/sites/default/files/page_attachments/apai_crvs_23-august-final-formatted.pdf.

United Nations Statistics Division (2012). Coverage of birth and death registration. Available from https://unstats.un.org/unsd/demographic/CRVS/CR_coverage.htm. Accessed 14 March 2014.

__________(2013). Civil registration systems. Available from http://unstats.un.org/unsd/demographic/sources/civilreg/civilregprogramme.htm.

Wallace, R.M.M., and others (2012). *Mother to Child: How Discrimination Prevents Women Registering the Birth of Their Child*. Plan and the UHI Centre for Rural Childhood. Available from www.perth.uhi.ac.uk/specialistcentres/ruralchild/Documents/Mother%20to%20Child%20Full%20Report.pdf. Accessed 18 July 2013.

Wang, H., and others (2012). Age-specific and sex-specific mortality in 187 countries, 1970-2010: a systematic analysis for the *Global Burden of Disease Study 2010. Lancet*, vol. 380, No. 9859 (15 December), pp. 2071-2094.

World Health Organization (WHO) (2011). Keeping Promises, Measuring Results. Commission on Information and Accountability for Women's and Children's Health. Geneva. Available from http://www.who.int/woman_child_accountability/ierg/reports/annual/en/index1.

___________(2012). Independent Expert Review Group. Available from www.who.int/woman_child_accountability/ierg/en/.

__________(2013). *Every Woman, Every Child: Strengthening Equity and Dignity through Health – The Second Report of the Independent Expert Review Group (iERG) on Information and Accountability for Women's and Children's Health*. Geneva. Available from www.who.int/entity/woman_child_accountability/ierg/reports/en/.

World Health Organization (WHO) and University of Queensland (2010a). Rapid Assessment of National Civil Registration and Vital Statistics Systems. Geneva: WHO. Available from http://whqlibdoc.who.int/hq/2010/WHO_IER_HSI_STM_2010.1_eng.pdf?ua=1.

__________ (2010b). *Improving the Quality and Use of Birth, Death and Cause-of-death Information: Guidance for a Standards-based Review of Country Practices*. Geneva: WHO. Available from http://www.who.int/healthinfo/tool_cod_2010.pdf?ua=1-.

Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences[1]

Abstract

In the present paper, the civil registration and vital statistics (CRVS) system experiences of five countries in the region – Afghanistan, India, Kazakhstan, Pakistan and the Philippines – are highlighted. In the case studies, a brief account is provided of the progress, challenges and lessons learned on key aspects of importance for CRVS systems in each country, and a glimpse is offered of the diversity of CRVS systems across the region. Some of the key strategies implemented by countries to address challenges in CRVS systems include legal and policy changes; improved collaboration across multiple sectors, in particular between the registration and statistical authorities; the growing involvement of the health sector in the notification of vital events and in improving the ascertainment of causes of death; public information campaigns; and capacity development for the analysis, dissemination and use of vital statistics for policy and planning purposes.

By Carla Abouzahr, Said Yaqoob Azimi, Lisa Grace S. Bersales, Chandrasekaran Chandramouli, Lourdes Hufana, Khalid Khan, Gulnara Kulkayeva, Jonathan Marskell, and Lyaziza Sauyekenova

Introduction

A CRVS system reflects the level of development of a country and its administrative system. It is moulded by a country's history and culture. Thus, the coverage of birth and death registration (as reported by countries to the United Nations Statistics Division) is highly variable, including across the Asia-Pacific region (Abouzahr and others, 2014). In

---

[1] Carla Abouzahr, Chief Executive Officer, CAZ Consulting, Geneva (e-mail: abouzahr.carla@gmail.com); with contributions from Said Yaqoob Azimi, Ministry of Public Health, Kabul; Lisa Grace S. Bersales, National Statistician, Manila; Chandrasekaran Chandramouli, Registrar General and Census Commissioner, Ministry of Home Affairs, New Delhi; Lourdes Hufana, Director III (Civil Registration), National Statistics Office, Manila; Khalid Khan, Director-General, National Database and Registration Authority, Islamabad; Gulnara Kulkayeva, Ministry of Health, Astana; Jonathan Marskell, Consultant, Bangkok; Lyaziza Sauyekenova, Ministry of Health, Astana.

the subregions of East and North-East Asia, and North and Central Asia, the coverage of birth registration is reported to be 90 per cent or higher, with the sole exception of the Democratic People's Republic of Korea. The coverage of death registration is similarly high in all countries in these two subregions, apart from the Democratic People's Republic of Korea and Tajikistan. The situation is very different in South and South-West Asia, South-East Asia and the Pacific, where only a handful of countries have levels of birth and death registration above 90 per cent. Cognisant of the important contributions of well-functioning CRVS systems to development (Abouzahr and others, 2014), several countries in the Asia-Pacific region, including Bangladesh (Naidu, Buttsworth and Aumua, 2013), Fiji, the Philippines (Hufana and others, 2009; Philippine National Statistics Office, Philippines Department of Health and WHO, 2014), Sri Lanka (Navaratne, 2009) and Thailand (Kijsanayotin, Ingun and Sumputtanon, 2013), have embarked upon improvement initiatives in the last decade. Others, including Afghanistan, Azerbaijan, Cambodia, China, the Democratic People's Republic of Korea, India, Indonesia, Kyrgyzstan, the Lao People's Democratic Republic, Myanmar, Nepal, Papua New Guinea, Solomon Islands, Tajikistan, Turkmenistan, Uzbekistan and Viet Nam, are in the process of completing national CRVS assessments and formulating improvement plans with support from regional partners (World Bank and WHO, 2014). While many countries are still in the early stages of focused efforts to improve their CRVS systems, important lessons are being learned.

The purpose of the present paper is to highlight the experiences of five countries, namely Afghanistan, India, Kazakhstan, Pakistan and the Philippines. These country case studies are not intended to be complete descriptions of the many processes under way; rather, they offer some lessons learned on key aspects of importance in each country and provide a glimpse of the diversity of the CRVS systems and the challenges across the region, and of the many commonalities in the strategies adopted by countries to address them. Some of these strategies include, but are not limited to, legal and policy changes; improved collaboration across multiple sectors, in particular between the registration and statistical authorities; the growing involvement of the health sector in the notification of vital events and in improving the ascertainment of causes of death; public information campaigns; and capacity development for the analysis, dissemination and use of vital statistics for policy and planning purposes.

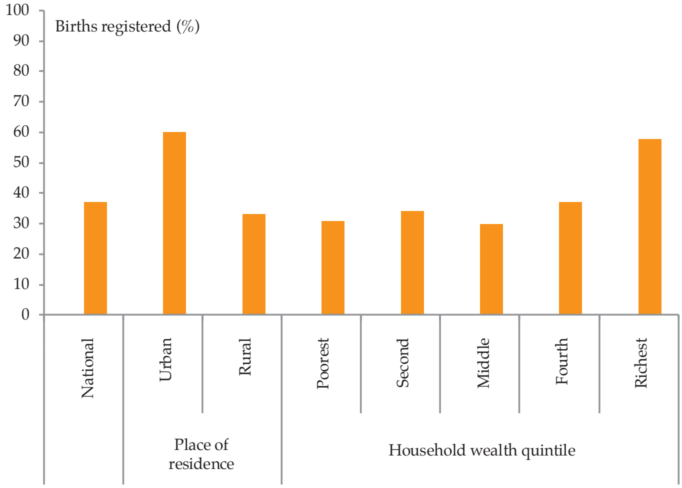
Afghanistan: establishing the legal basis

Legal and administrative framework

Afghanistan does not report birth or death registration coverage to the United Nations, and until recently, little information was available on the functioning of the system. Nonetheless, in recent years, Afghanistan has instituted legislative reforms for civil registration and introduced the necessary administrative structures. Currently, Afghanistan has 34 provinces, each of which has a civil registration unit with two full-time staff and the necessary physical infrastructure (office facilities and equipment). The civil registration units are under the supervision of the Ministry of the Interior (MOI). Each province also has a health information unit, under the responsibility of the Ministry of Public Health (MPH), which is responsible for recording vital events that occur in health facilities or with the support of community health workers.

Data from the 2010/11 Multiple Indicator Cluster Survey showed that the coverage of birth registration for children under 5 years of age was about 37 per cent. However, there were major differences in birth registration coverage by place of residence and household wealth, with children in urban areas and in the richest households being about twice as likely to be registered compared with those living in rural areas and in the poorest households (see figure 1).

Figure 1. Indicators of birth registration coverage in Afghanistan



*Source:*United Nations Children's Fund, Every Child's Birth Right:Inequities and Trends in Birth Registration (New York, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

CRVS assessment and recommendations

Inspired by the development of a regional strategy on CRVS by the World Health Organization (WHO) Regional Office for the Eastern Mediterranean, in September 2013, with support from the WHO Regional Office for the Eastern Mediterranean and the United Nations Children's Fund (UNICEF), Afghanistan undertook an assessment of its CRVS system. The assessment involved multiple stakeholders from the Ministries of Education, Foreign Affairs, the Interior, Justice, Public Health, and Rural Rehabilitation and Development, and from the Central Statistics Organization and the Department of Islamic Affairs. A number of recommendations were made to improve the functioning of the CRVS system, including the following:

Legislation: A major conclusion of the assessment was that there was a need to modify the law to include definitions of live birth and death, to assure adequate funding for civil registration, to identify who is entitled to legal documentation relating to birth and death, and to include provisions enabling both mullahs and community health workers to conduct birth and death registration activities.

Infrastructure to expand coverage: Registration infrastructure should be expanded to ensure access for the whole population. The existing facilities should be upgraded with equipment, mobile telephones and outreach capabilities, such as mobile registration units. A representative of the civil registrar should be positioned in all major hospitals, including maternity hospitals, with access to the statistical database and the authority to issue legal birth and death certificates. In remote and inaccessible areas, mobile registration units should be introduced and registration campaigns should be conducted to encourage registration and to clear the backlog of unregistered vital events.

Information technology (IT) infrastructure and electronic recording: The civil registry system should be migrated from a paper-based to a web-based database and civil registrars should be provided with the necessary training. This would facilitate the calculation of registration coverage at subnational levels. Computerization would also enable the modernization of the cause-of-death database and its alignment with the International Classification of Diseases tenth revision (ICD-10) standards. A centralized coding unit should be established to ensure that common standards are applied across the whole country.

Coordination: A technical coordination committee composed of representatives from key line ministries and the Central Statistics Organization should be established to supervise and coordinate the CRVS improvement plan. The notification of vital events should be increased through collaboration with mullahs and community health workers. Maternal and neonatal death review committees should be set up at the central and provincial levels.

Monitoring and evaluation: A monitoring and evaluation mechanism should be established within the Civil Registry Authority to conduct quality checks and to reduce registration errors.

Production and dissemination of vital statistics: Capacity-building on statistical methods should be introduced within the Central Statistics Organization Vital Statistics Department and Demographic Department. Such methods should include the calculation of indicators, statistical analysis, report writing, the dissemination of results, and advocacy for CRVS data use with the relevant governmental and non-governmental entities.

Activities under way

As of May 2014, several steps had been taken to implement the recommendations. The law on registration was updated in March 2013, and it is now compulsory for all births and deaths to be registered within three months of occurrence (whereas the previous legislation required registration within one year of occurrence). The law introduced the following three new strategic directions designed to increase birth and death registration:

1. The allocation of the main responsibility for the registration of vital events to MPH and MOI, with collaboration from other ministries, including the Ministries of Justice, Education, and Rural Rehabilitation and Development, especially with regard to advocacy and awareness building.

2. The roll-out of computerization in all registration offices in order to facilitate and speed up the reporting of vital events, data collection and transfer, and data analysis and dissemination.

3. Campaigns to raise awareness of the importance of vital events registration at the community level.

One component missing from the new legislation is a formal linkage between the issuance of a burial permit and the registration of deaths. This issue has been identified as a priority, and MPH and MOI have submitted to the Ministry of Justice a proposal to amend the current law.

Several activities are currently underway. UNICEF is supporting computerization and awareness-raising efforts in collaboration with MOI, and MPH is working in collaboration with mullahs to improve the reporting of births and deaths at the community level. According to MPH, approximately 50 per cent of all births in the country take place in public health facilities and there is a strong routine health management information system with almost complete monthly reporting of births (some 600,000 births annually). However, only about 10 per cent of the facility births reported by MPH are formally registered by MOI. Improved coordination between MPH and MOI could result in a rapid increase in the coverage of birth certification.

MPH is also responsible for reporting deaths that occur in health facilities. With the support of WHO, MPH staff and hospital doctors are being trained to certify causes of death in accordance with ICD standards. The immediate goal is to ensure that all deaths that occur in health-care facilities are reported with a death certificate that is correctly completed and includes the cause of death. However, most deaths occur at the community level, outside health facilities. In these settings, the ascertainment of cause of death is challenging. Implementation research and pilot studies will be needed to assess the feasibility of introducing verbal autopsy to generate population-based estimates of mortality patterns at the community level.

Despite considerable progress, there continue to be some weaknesses in the collaboration between MPH, which is responsible for the notification of vital events, and MOI, which is responsible for the issuance of certificates. As a result, not all reported vital events are actually registered and a certificate issued. In order to strengthen coordination, the two ministries submitted a proposal to the presidential office to establish provincial coordinating committees, in addition to the national coordination committee.

India: progress and challenges

Legal and administrative framework

Although at independence India inherited a legal framework for the registration of births and deaths, registration was implemented under various laws and by-laws in different parts of the country. The Registration of Births and Deaths Act of 1969 established the compulsory nature of birth and death registration and sought to introduce uniformity across all of the states and union territories.[2] The Act specifically links the registration of births and deaths with the annual publication of statistical reports based on the civil registration data.[3]

In practice, institutional responsibility for registration varies across states and union territories. The Department of Health supervises civil registration work in 19 states and union territories; the Department of Planning, Economics and Statistics in 12 states and union territories; the Department of Panchayat in 1 state and 1 union territory; the Department of Revenue in 1 union territory; and the local administration in 1 union territory. Interdepartmental coordination committees have been established to resolve operational problems and to foster coordination. In 2000, the registration system was reorganized, and registration procedures and forms were modified in order to simplify the process of registration and to ensure common standards across the country.

The registration system generates a continuous flow of information at

---

[2] Registration of Births and Deaths Act, 1969 (Act No. 18 of 1969). Available from www.pbnrhm.org/docs/b&d_reg.pdf.

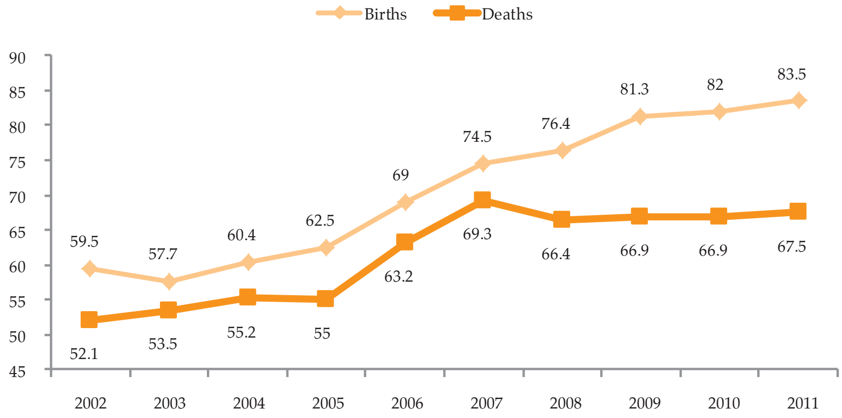
[3] Section 19 of the Registration of Births and Deaths Act,1969.

the local level that is consolidated for onward transmission to the chief registrar of each state or union territory. Annual statistical reports from the states are sent to the Office of the Registrar General, which issues a comprehensive national annual statistical report (India, Office of the Registrar General, 2011).

Current status of registration coverage

The Office of the Registrar General reported that, between 2002 and 2011, registration coverage (registered events as a percentage of total expected/estimated events) increased for births from 59 per cent to 83 per cent and for deaths from 52 per cent to 67 per cent (see figure 2). The rapid improvement after 2005 reflects the efforts of the Office of the Registrar General to improve registration in several poorly performing states through monthly reviews of registration units and birth registration campaigns designed to enhance public awareness. Despite this progress, the national coverage gap of 17 per cent for births and 33 per cent for deaths implies the need for further action to reach excluded and marginalized populations. The decline in death registration coverage after 2007 reflects problems in a number of large states, including Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Rajasthan, Uttarakhand and Uttar Pradesh, where large numbers of infant, child and maternal deaths are not reported to the registration authorities.

Figure 2.Percentage of births and deaths registered, India, 2002-2011



Source: India, Office of the Registrar General, *Vital Statistics of India Based on the Civil Registration System* (New Delhi, 2011). Available from www.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

Variations in registration coverage across states and union territories

There is considerable heterogeneity across states and union territories for the registration of both births and deaths. By 2011, 18 states and union territories had achieved over 95 per cent coverage of birth registration; 7 had levels of registration between 80 and 94 per cent; and the remaining 10 states and union territories had achieved levels of registration in the range of 50 to 79 per cent. No state or union territory had birth registration coverage below 50 per cent (see figure 3). The states with the highest levels of registration have made the registration of birth compulsory for school admission and linked registration with social welfare schemes. By contrast, only 9 states and union territories had achieved complete (95 per cent or more) registration of deaths; 9 had levels of death registration between 80 and 94 per cent; 10 states and union territories had levels of registration between 50 and 79 per cent; and 7 had levels of death registration below 50 per cent (see figure 4).

Figure 3. States and union territories in India classified by the level of registration of births, 2011

95% or over	• 18 states and union territories (Arunachal Pradesh, Chandigarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Punjab, Rajasthan, Tamil Nadu and West Bengal)
80 - 94%	• 7 states and union territories (Andhra Pradesh, Assam, Daman and Diu, Goa, Madhya Pradesh, Manipur and Tripura)
50 - 79%	• 10 states and union territories (Andaman and Nicobar Islands, Bihar, Chhattisgarh, Dadra and Nagar Haveli, Jammu and Kashmir, Jharkhand, Lakshadweep, Sikkim, Uttar Pradesh and Uttarakhand)
Below 50%	• Nil

Source: India, Office of the Registrar General, *Vital Statistics of India Based on the Civil Registration System* (New Delhi, 2011). Available fromwww.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

Figure 4. States and union territories in India classified by the level of registration of deaths, 2011

95% or over	• 9 states and union territories (Chandigarh, Daman and Diu, Delhi, Goa, Kerala, Mizoram, Puducherry, Punjab and Tamil Nadu)
80 - 94%	• 9 states and union territories (Andaman and Nicobar Islands, Gujarat, Haryana, Himachal Pradesh, Karnataka, Maharashtra, Nagaland, Odisha and Sikkim)
50 - 79%	• 10 states and union territories (Andhra Pradesh, Chhattisgarh, Dadra and Nagar Haveli, Jammu and Kashmir, Jharkhand, Lakshadweep, Madhya Pradesh, Meghalaya, Rajasthan and West Bengal)
Below 50%	• 7 states and union territories (Arunachal Pradesh, Assam, Bihar, Manipur, Tripura, Uttar Pradesh and Uttarakhand)

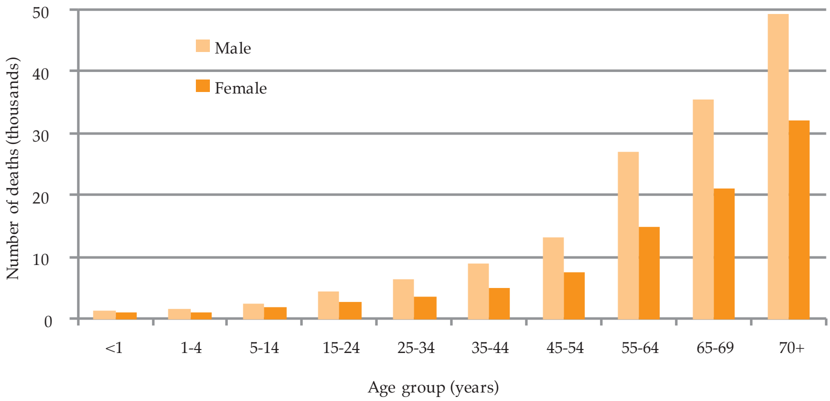
Source: India, Office of the Registrar General, *Vital Statistics of India Based on the Civil Registration System* (New Delhi, 2011). Available fromwww.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

Wealthier states, with populations that are associated with higher registration coverage, should in principle have better infrastructure and communications, as well as higher average education levels. However, there is no clear correlation between state per capita income levels and registration coverage; clearly other factors are at work, including levels of political commitment, and state organizational and administration capacities. States with low levels of birth registration generally have high infant, under-5 and maternal mortality and have been identified by the Government of India as an "empowered action group", which receives particular attention with regard to health indicators (Ministry of Home Affairs of India, 2010). Among these states, Rajasthan has, since 2008, directed particular attention to improving birth and death registration by launching public awareness campaigns, linking services with birth and death registration, and engaging non-governmental organizations (NGOs) in birth registration.

Quality of vital statistics

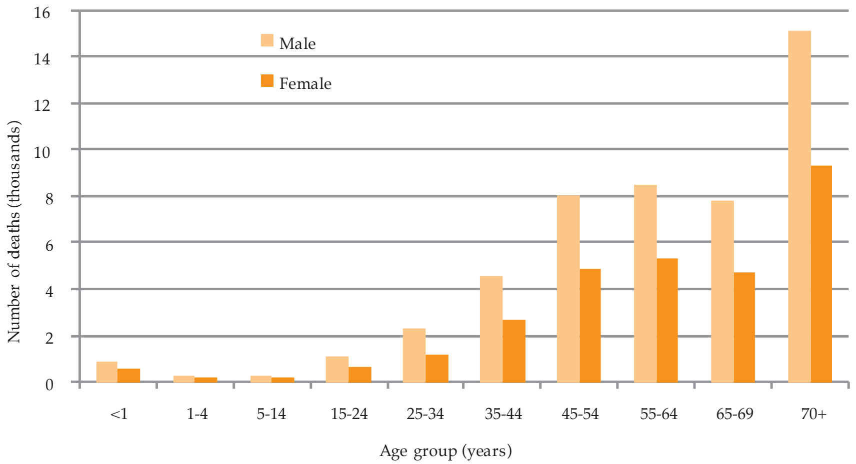
It is important not only to increase birth and death registration but also to improve the quality of the information recorded. In principle, the registration system should report the occurrence of vital events as well as the associated characteristics, such as age, sex and place of occurrence – that is, information that is of considerable value for population and health decision-making. There is room for improvement in this area. Currently, not all states report deaths by age and sex, and in those that do, such as Rajasthan, the death distribution patterns indicate the underregistration of infants, young children and women in general (see figures 5 and 6). In a setting such as urban Rajasthan, with infant mortality rates at about 40 per 1,000 live births, one would expect to see higher proportions of deaths occurring in children under 5 years of age and increased female mortality in the reproductive ages due to pregnancy-related conditions.

Figure 5. Distribution of deaths by age and sex, rural Rajasthan, 2010



Source: India, Office of the Registrar General, *Vital Statistics of India Based on the Civil Registration System* (New Delhi, 2011). Available from www.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

Figure 6. Distribution of deaths by age and sex, urban Rajasthan, 2010



Source: India, Office of the Registrar General, *Vital Statistics of India Based on the Civil Registration System* (New Delhi, 2011). Available from www.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

The birth registration coverage estimates quoted in the report of the Office of the Registrar General differ from those calculated on the basis of household surveys. For example, the 2005/06 National Family Health Survey, carried out by the International Institute for Population Sciences, found that only 41 per cent of children under 5 years of age were reported as having been registered, compared with about 60 per cent over the same period reported by the Office of the Registrar General (UNICEF, 2013). The Annual Health Survey, which was conducted in nine states in 2009/10, found a level of registration coverage of about 60 per cent.[4] The reasons for such discrepancies need to be investigated; however, such inconsistencies may reflect different data collection methods and limitations in methodology for calculating registration coverage.

Challenges to be addressed

Although India has not conducted a comprehensive assessment of CRVS using internationally developed tools, a number of constraints and challenges have been identified by those working within the registration system. For example, despite the existence of national legislation and the identification of roles and responsibilities, in practice, at the subnational level, multiple agencies are involved in registration. As a result, there are

---

[4] See http://censusindia.gov.in/2011-common/AHSurvey.html.

problems in coordination, monitoring and supervision that directly affect the quality and timeliness of data. Although high-level interdepartmental committees exist, they have generally been ineffective. Registration functionaries generally work in an honourary capacity and have other duties, and low priority is therefore given to registration, as well as the preparation and submission of statistical returns.

In some areas, the registration infrastructure is inadequate; elsewhere, the existence of numerous registration sites results in problems of quality control, management and supervision. Additional constraints include inadequate budgets to cover equipment and supplies such as forms and registers, a lack of resources for training and supervision, and weak community outreach and the resulting low public awareness. Even in states that have achieved high levels of registration, information from local levels is not always compiled and transferred in a timely manner, leading to delays in the compilation of vital statistics at the state and national levels.

The lack of public awareness about the statutory requirements and procedures, along with weak demand for birth and death certificates, especially in rural areas, and the widespread acceptance of alternative documents, such as affidavits, as proof of death contribute to the overall weakness of CRVS.

On a more positive note, India is one of the few countries in the region with a well-established system of oversight, which is done through the Society for Participatory Research in Asia, a local NGO. The organization has documented major gaps in death and birth registration and very low levels of awareness about registration, especially among poor and marginalized populations (Society for Participatory Research in Asia, 2004; UNICEF, 2006). NGOs involved in legal aid for the poor have taken up the low level of registration with the courts and they have succeeded in drawing attention to the need for particular measures to increase registration among the poor. Special incentives are given to health workers in poor-performing states to report rare events such as infant and maternal deaths.

Cause-of-death reporting in the civil registration system

Although medical certification of cause of death has statutory backing under the Registration of Births and Deaths Act, in practice only a small proportion of deaths in the country have a medically certified cause, and most of these are in urban areas. In an initiative to improve the quality of the ascertainment of causes of death, a number of hospitals and other health-care institutions participate in the Medical Certification of Cause of Death Scheme, which includes training in and supervision of the use of the international health certificate form and of ICD. As of 2009, 44 per cent of hospitals – almost entirely in urban areas – participated in the scheme, of which 51 per cent reported causes of death to the national level. Overall, the proportion of reported deaths that have a medically certified cause of death remain at only approximately 10 per cent nationally, with wide regional variations, from less than 6 per cent in West Bengal and Jharkhand to over 90 per cent in Goa. Seven states do not provide any reports on medically certified deaths.

The Sample Registration System

In order to fill the data gaps resulting from the weakness of CRVS, in 1964 India introduced the Sample Registration System to generate statistics on population composition, fertility and mortality.[5] The system is based on the dual recording of births and deaths in representative sample units spread across the country. In 7,597 sample areas, part-time officials continuously record births and deaths. In addition, twice a year an independent survey team interviews all sample households, specifically asking about the births and deaths that took place during the previous six months. The two sets of event records are then matched, and any discrepancies are investigated. The final count of events is the total of all matched events plus those recorded only by the officials plus those recorded only during the household interview. An independent evaluation has suggested that the system captures about 85 per cent of all deaths.

In order to determine the probable cause of death, verbal autopsy techniques are used. This is a process for diagnosing causes of death based on responses to a series of structured questions on the signs and symptoms experienced by the deceased. The responses are collected from families or caregivers by a health worker, and they are then usually reviewed by a physician to determine the probable cause of death. In recent years, automated methods have been applied to determine the cause of death from the responses received without the need for a physician. Although the use of verbal autopsy generates useful cause-of-death information at the population level – that is, cause-specific mortality fractions – the technique is less reliable for ascertaining the cause of death on an individual basis. In addition, the causes of death ascertained using verbal autopsy cannot be used for medico-legal purposes, which require a more rigorous medical determination of cause.

Sample registration systems can be viewed as an interim strategy to fill data gaps while the civil registration system is strengthened. However, there are as yet no formal linkages between the sample registration system and the CRVS system.

---

[5] See http://censusindia.gov.in/(S(ra5wq145pgxvor45df5gf3re))/Vital_Statistics/SRS/Sample_Registration_System.aspx.

Actions taken to improve CRVS

In March 2014, the Government of India announced "Vision 2020", a plan whose goal is to achieve the universal registration of births and deaths by the year 2020. The key strategies that will be used to realize this goal will be capacity-building, awareness raising and the use of information and communications technology. The Office of the Registrar General has developed training manuals for civil registrars in 13 languages and supports training activities. A physician's manual for improving cause-of-death reporting has also been developed and training activities have been organized for physicians across all states and union territories. A standardized web-based software application has been developed in order to avoid the proliferation of software packages for the registration of events across the country. An electronic database of every medical institution in the country where births and deaths occur has been created. It has been proposed that call centres be used to monitor the reporting and registration of events by the institutions.

Towards a national population register

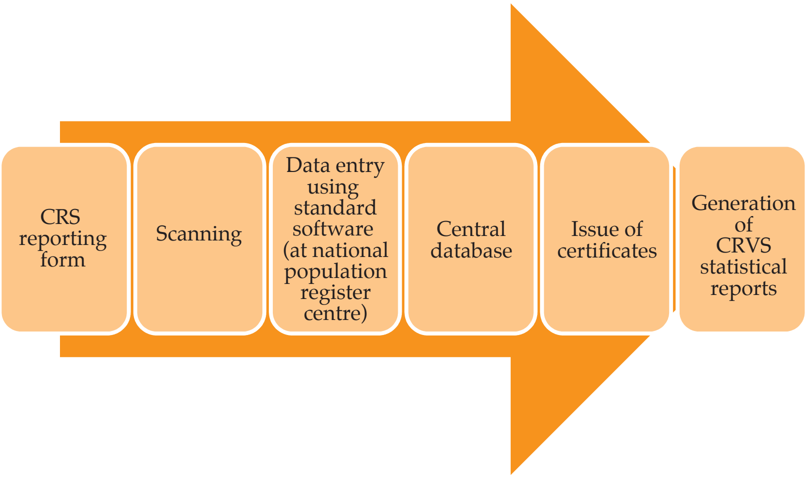
A transformational initiative currently being introduced is the national population register, an electronic database of more than 1 billion residents of the country.[6] The process of removing duplicates from the database and assigning unique identity numbers is currently under way. An initiative has been launched to integrate this population register with the civil registration system. The civil registration system will be the primary and authentic government source for updating the national population register database, and both the system and the database would benefit if birth and death registration were compulsory, as this would greatly increase registration completeness.

The birth and death reporting forms will be fed into the civil registration system software and then transferred to the national population register database using the unique identification number of parents who reported the births to link to the database. Responsibility for the issuance of birth and death certificates will remain with the civil registrars. A schematic diagram of the process is given in figure 7.

---

[6] See "AapkaAadhaar" at http://uidai.gov.in/.

Figure 7. Process of linking civil registration and the national population register database in India



Source: Figure by author.
Note: CRS – civil registration system.

There is growing momentum to strengthen CRVS in India, with information and communication strategies used to increase demand among the population for birth and death registration. Current activities to address supply-side issues include customizing the registration software in 13 local languages, establishing e-registration centres at the subdistrict level, and implementing training and capacity-building among the registrars and medical institutions in the use of the electronic system. These new initiatives, coupled with an enhanced data quality audit, have the potential to transform the landscape and lay the foundation for a robust CRVS system in India.

Pakistan: harnessing innovation and technologies for CRVS

Legal and administrative framework

In Pakistan, a number of legislative instruments have dealt with civil registration, several of which date from the colonial era (Noman, 2014). Following independence, the Pakistan Citizenship Act of 1951 and the Basic Democracies Order of 1959 established the union council as the administrative unit for civil registry; and the *chowkidar* (the lowest-level village official appointed by provincial or district governments) maintained civil registers in each village, supervised by the village headman *(lumberdar)*. The *chowkidar* was also responsible for taking the birth registration record to the police station to update the official records. The Municipal Administration Ordinance of 1960 stipulated that it was the obligation of the head of household and the midwife, nurse or doctor present at the time of a birth or death to report the event to the municipal committee for registration. In 1973, the National Registration Act introduced a new scheme whereby all registered adults aged 18 years or over would receive a national identity card that would constitute proof of age and would be a prerequisite for a variety of entitlements, such as passports, driving licences, social support and conditional cash transfers.

The multiplicity of laws and institutions dealing with aspects of civil registration resulted in fragmentation, poor coordination and a lack of uniform standards across the country. In response, in 2000, the National Database and Registration Authority (NADRA) ordinance repealed the National Registration Act of 1973 and introduced a new registration system making it compulsory for the parents or guardians of a newborn to register the birth with NADRA within one month, irrespective of the place of residence (urban or rural area) or the place of occurrence (in Pakistan or abroad).

NADRA and the Civil Registration Management System

NADRA maintains a continuous stream of inputs, such as the registration of births, deaths and marriages, and manages the information in an electronic database. Organizationally, the Chairperson of NADRA is also the Registrar General of Pakistan, working under MOI. In order to strengthen the registration system used by local governments, birth registration records were digitized and the Civil Registration Management System was introduced on a project basis in 2004 in Lahore and Sialkot, enabling the maintenance of a comprehensive database. It was subsequently rolled out across the country (see figure 8) and extended to cover other vital events, namely deaths, marriages and divorces.

As of early 2014, the Civil Registration Management System was functioning in almost 97 per cent of the total number of 6,580 planned sites across the country, and it is expected to be 100 per cent operational by the end of 2014. Each site covers approximately 28,000 people, depending on the geographical location and population density. On average, each site can expect 684 births to take place in its jurisdiction every year; registrations of other vital events will be far fewer. Almost the whole country is covered; however, in addition to the 3 per cent deficit, digital registration has been temporarily suspended in some districts in Balochistan and the Federally Administered Tribal Areas, due to security concerns. In Azad Jammu and Kashmir, although birth registration is currently being done manually, the system is in the final stages of computerization.

Figure 8. Evolution of computerized civil registration in Pakistan

- Vital events were registered at police stations.
- Vital events registration was handed over to provincial government departments.
- The National Database and Registration Authority started a pilot project in two districts of Punjab.
- Prime Minister of Pakistan issued a directive to implement registration across the country.
- 6,378 registration sites sre operational across the country.

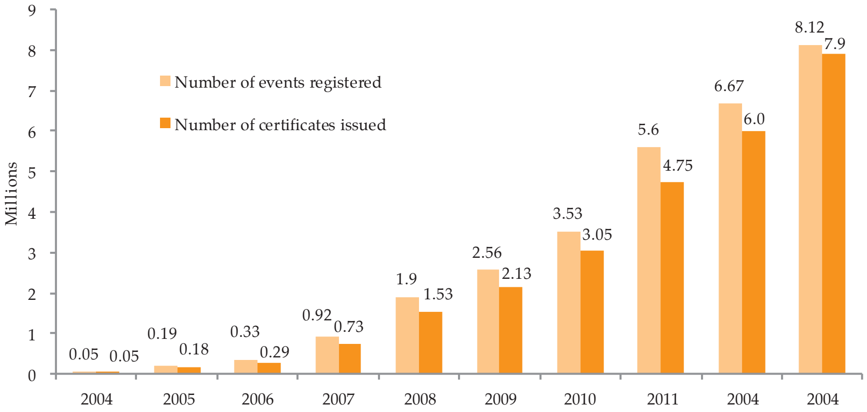
Source: Figure by author based on information from the National Database and Registration Authority. Available from www.nadra.gov.pk.

There is a clear division of responsibilities between NADRA and the local government departments, with NADRA being responsible for the provision of technical services and software, the training of union council (local level) staff, data collection from sites and database maintenance, and the local governmental departments being responsible for the provision of offices and equipment, the processing of manual applications, the verification of applicant particulars, the collection of fees, the data entry of applicant details and the printing of certificates. An affiliate, NADRA Technologies Limited, is responsible for the identity management component of the Civil Registration Management System, dealing with the issuance of identity cards, passports, driving licences, registration documentation, social support and conditional cash transfer systems, electoral rolls and border control.

Current status of registration

Since the inception of NADRA in 2004, there has been an exponential increase in registrations and certificates issued, with just over 8 million registrations in 2013 and some 7.9 million certificates issued (see figure 9). The small difference between the two figures reflects the fact that registration and certificate issuance are two separate activities. Registration is free of charge, whereas there is a nominal charge for birth and death certificates. In practice, most people do proceed to obtain birth certificates to fulfil their documentary needs.

Figure 9. Vital events registered by the National Database and Registration Authority and certificates issued, Pakistan, 2004-2013



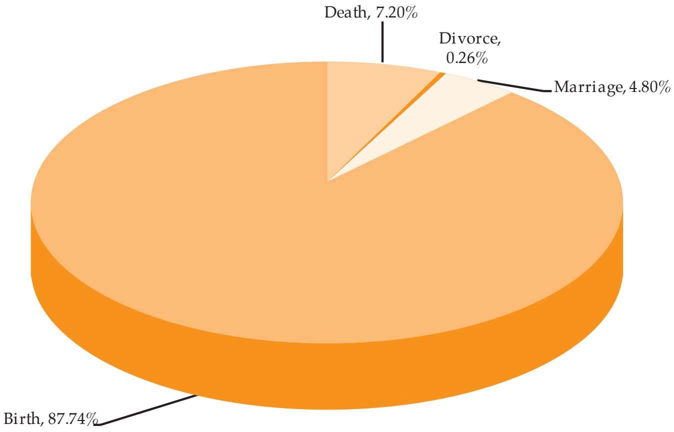
Source: Figure by author based on information from the National Database and Registration Authority. Available from www.nadra.gov.pk.

The overwhelming majority of the events registered – 88 per cent – are births (see figure 10). This reflects the strong incentive to obtain proof of identity in order to access government services. For example, in 2013, 78 per cent of the 6.9 million births registered with NADRA were late registrations. Of the 4.5 million births that occurred in 2013, some 33 per cent were registered within one year. Demand for birth registration has been stimulated by activities of the provincial governments and media awareness campaigns, and it is anticipated that the overall birth registration rates will increase significantly during 2014.

Incentives for the registration of deaths are likely to be confined to those seeking to claim inheritance or to access pension or insurance claims. There are no legal requirements for deaths to be registered in order to arrange for the disposal of the body.

There are regional variations in the registration of vital events. Between 2004 and 2013, three quarters of all registered vital events were in Punjab, whose population accounts for about 60 per cent of the total population of the country. By contrast, just over 17 per cent of registrations were in Sindh, whose population accounts for 22 per cent of the total population of Pakistan.

Figure 10. Distribution of events registered between 2004 and 2013



Source: Figure by author based on information from the National Database and Registration Authority. Available from www.nadra.gov.pk.

Identifying limitations and bottlenecks

In 2012, with support from WHO, Pakistan conducted both rapid and comprehensive assessments of its CRVS system using tools developed by WHO and the Health Information Systems Knowledge Hub of the University of Queensland (2010a and b). The purpose of the assessments was to develop a common understanding among stakeholders of the limitations of the existing system and to identify gaps to be addressed in a national CRVS improvement plan. The comprehensive assessment involved multiple stakeholders, including NADRA, union councils, health institutions, and provincial donor-funded activities such as the National Maternal Newborn and Child Health Programme and the Lady Health Worker Programme. It was conducted in a range of locations across the country. With support from UNICEF, Pakistan also conducted comprehensive multilevel gap analysis to look into the major impediments to complete birth registration.

According to the findings, although the current birth registration coverage (33 per cent of a total of 4.5 million births in 2013) represents a formidable achievement in a setting with rapidly rising numbers of births annually, there continue to be major structural and cultural barriers to registration that need to be addressed, such as poor coordination and a lack of uniform standards across the country.

There is still insufficient awareness among the general public of the importance of the registration of births for school admission and for the issuance of national identity cards or documents. There are few incentives for the registration of deaths, especially among poor populations with little to gain from inheritance from deceased relatives. Moreover, the registration process needs to be simplified: currently, at least three visits to the registration facility are required, or more if the registrar is unavailable or the documents are incomplete. Other bottlenecks include the inadequate allocation of financial resources, especially at the local government level, and the inadequate training of registration staff.

A critical missed opportunity is the lack of involvement of the health sector in the registration of vital events. Although some 40 per cent of births take place in health facilities, there is no system for the compulsory notification of births to the registration authorities. There are no estimates of the proportion of deaths that are registered, and causes of death are not registered at any level, although this information is collected in some secondary and tertiary level hospitals. Even in hospital settings, however, the standard international death certificate form is rarely used and there is only limited use of ICD-10 for the coding of causes of death. The physicians responsible for the medical certification of death lack an understanding of the importance of the ascertainment of causes of death and do not have the requisite training, either through medical education or while in service.

The comprehensive assessment did not specifically address the potential opportunity for linking registration authorities with religious or burial institutions that sanction the disposal of a body according to local customs and beliefs.

Opportunities for further progress

Efforts are now underway to address the key recommendations emerging from the rapid and comprehensive assessments, including the following:

- Consolidating current laws into a single legal and regulatory framework universally applicable to all the territories and all Pakistani citizens, making it clear that the birth certificate is the foundational document for proof of age and identity for all purposes, and including measures to enable the registration of disadvantaged groups such as abandoned children.

- Developing effective implementation mechanisms, including nationwide standards for registration and common forms for use in all localities.

- Expanding registration infrastructure to cover all of the population of Pakistan and upgrading the existing facilities with equipment, mobile telephones and outreach facilities.

- Introducing web-based digital registration and software to enable data capture according to international standards, and establishing a birth and death reporting mechanism at hospitals and basic health units.

- Expanding digital registration in all provinces in Pakistan and increasing the network connectivity of union councils with the NADRA database in all provinces.

- Developing skills and capacities of all those involved in registration at the local, provincial and national levels, including the civil servants and health workers responsible for death registration and cause-of-death ascertainment.

- Creating awareness among policymakers, communities and religious leaders, and working with civil society and community groups to ensure that the registration process is responsive.

- Using mobile registration units to conduct registration campaigns in remote and inaccessible areas to cover registration backlogs.

- Establishing a national authority with supporting roles for local authorities, health institutions within Pakistan, and Pakistani embassies and foreign missions abroad.

- Promoting a cross-sectoral approach, for example by linking birth and death registration to activities in other sectors such as health, education and local government.

- Mobilizing political commitment, increasing government investments and harnessing donor support to ensure that these reforms can be introduced and sustained.

Following the strategic workshop on CRVS held in March 2014, the CRVS National Steering Committee has had a more inclusive, multisectoral membership, including NADRA; the Ministry of Planning, Development and Reform; the Ministry of Health Services; the Ministry of Law, Justice and Human Rights; MOI; the Pakistan Bureau of Statistics; the National Institute of Population Studies; the relevant United Nations agencies; development partners; the Pakistan Institute of Development Economics; provincial health departments; local governments and provincial planning departments. This mechanism will establish roles, responsibilities and mechanisms for strengthened collaboration across departments and agencies. The Steering Committee is expected to contribute to significant improvements in birth and death registration coverage in the upcoming years.

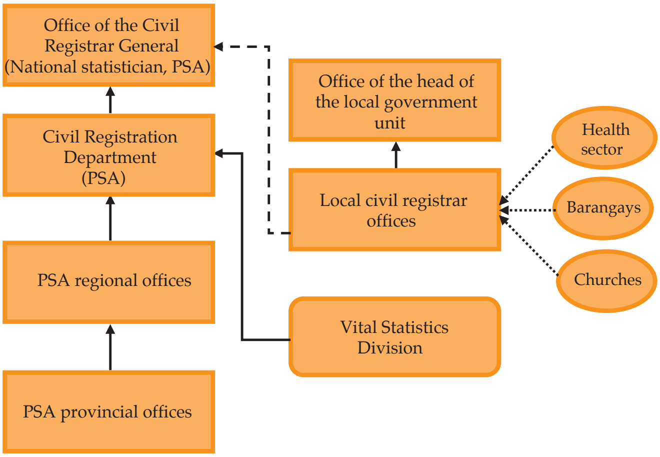
Philippines: aiming for a gold standard system

Legal and administrative framework

The mandate to oversee registration functions and the production of national statistics has been allocated by law to the Philippine Statistics Authority.[7] The registration system is, however, highly decentralized, with each city or municipality responsible for the registration activities and centralized coordination is through the Philippine Statistics Authority and the Department of Health. Birth and death registration data are collected at the local government level through 1,677 local civil registrar offices (see figure 11).

In a geographically dispersed country with over 7,100 islands and with a growing population of almost 100 million, the process of collecting, compiling, processing and validating CRVS data is a continuing challenge. To address this challenge, in 2000, the Government entered into a public-private partnership to computerize the civil registration system and to facilitate the application for, and processing and issuance of, birth and death certificates. The aim of the initiative was to improve the quality of services to citizens by reducing waiting times for registration and for the issuance of certificates and certified copies, while ensuring the maintenance of a complete and accurate database of civil registry documents and information, as well as minimizing falsification.

Figure 11. Structure of the civil registration and vital statistics system of the Philippines



Note: A *barangay* is the lowest administrative division in the Philippines and is the native Filipino term for a village, district or ward.
Source: PSA – Philippine Statistics Authority.

---

[7] Formerly the National Statistics Office.

National birth and death registration completeness is relatively high in the Philippines compared with that of other countries at a similar level of socioeconomic development. Following the 2010 census, completeness was estimated to be 93.5 per cent for births and 66 per cent for deaths. However, there are significant variations across geographic regions and population groups. Registration coverage is particularly low among certain ethnic groups and in remote and mountainous areas (Carter and others, 2011). In the Autonomous Region of Muslim Mindanao, where conflict has limited the delivery of government services and where civil registration documents are not required for as many services as in the rest of the country, an estimated 30 per cent of people have not had their birth registered and only 15 per cent of deaths were registered.

The effective operation of local government units is key to ensuring the accurate, complete and timely collection and processing of CRVS data. However, in this decentralized system, there are often variations in CRVS practices among the different local government units. For example, although the law on registration explicitly states that birth and death registration and the issuance of the first copy of the certificate should be free of charge, in practice some local government units collect service fees. Fees are charged for late registration, which may deter people from registering events, particularly among the poor. Fees are also charged for copies of the certificates, and the income generated is used to supply registration offices with essential equipment.

Death registration completeness remains low despite the requirement that a death certificate be obtained prior to the issuance of a burial permit. Furthermore, public health policy and planning are adversely affected by the poor quality of information on causes of death. In 2010, it was estimated that only 35 per cent of registered deaths had a medically certified cause and of these, some 15 per cent of causes were ill-defined, rendering the data of little use for public health policy and planning.

Assessment and planning

As part of the efforts to respond to these challenges, the Philippines volunteered to be the first country to conduct a comprehensive assessment of its CRVS system using the tools developed by WHO and the Health Information Systems Knowledge Hub of the University of Queensland (WHO and University of Queensland, 2010a). The assessment, which began in 2009, involved the Department of Health and the then National Statistics Office, as well as development partners (UNICEF and WHO), academic institutions, an NGO (Plan International) and external technical experts. Initially, the assessment focused on the national level; however, it was quickly realized that it would be important to carry out the assessment at the subnational level as well. The subnational assessment was duly conducted in 2011/12 in seven provinces, involving local civil registrars, staff and coders, provincial statistics officers, city or municipal health officers, medical records/administrative officers, doctors, nurses and midwives, as well as development partners. Follow-up strategic planning workshops generated consensus on the vision, mission and key activities of the CRVS improvement plan (Mikkelsen, 2012).

During 2013 and 2014, a national CRVS strategy was developed, covering the period 2015 to 2019. The strategy builds on the strengths of the current CRVS system, including its reliable administrative and legal functions and IT infrastructure. It aims to tackle the issue of underregistration and to improve the quality of civil registration data so that the registration system can become the primary source of vital statistics in the Philippines. The vision is to create a CRVS system that is responsive to the needs and rights of the Filipino people and produces quality data through timely, accessible and people-centred approaches complying with globally acceptable standards. The three goals of the national CRVS strategy are as follows:

1. **Improved quality and completeness of registration:** Increase death registration from 66 per cent to 80 per cent and birth registration from 93.5 per cent to 99 per cent by 2019.

2. **Increased awareness and utilization of vital statistics:** Quality vital statistics produced from civil registration are readily available and accessible for use in policy development, health development, health planning and programme management across all levels of government by 2019.

3. **Enhanced support for capacity-building to strengthen CRVS:** Governance and policy support mechanisms for civil registration are established at local and national levels and CRVS development plans are crafted and implemented by 2019.

The national CRVS strategy sets out priorities and actions for achieving each goal, namely:

- Developing capacities, improving business processes and strengthening routine monitoring and governance of the CRVS system

- Ensuring the application of common standards across a decentralized system

- Ensuring the capture of all events

- Harnessing technology

- Increasing the awareness of, demand for and use of the CRVS system.

The activities cut across all levels of government and stakeholders, from the Philippine Statistics Authority to the Department of Health and local civil registration units. Although technical support is being provided through in-country experts and development partners, almost all of the financial investment needed will be provided through the Government of the Philippines. Some of the capacity-building will be underwritten by the Government through the Medium-term Information and Communications Technology Harmonization Initiative, which is a government fund for cross-agency IT projects.

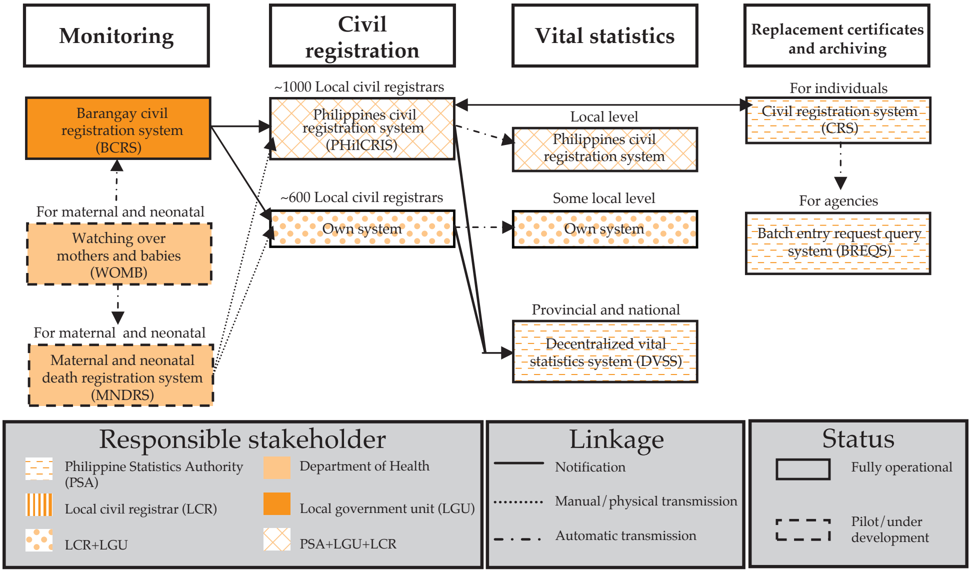
Tracking maternal and infant deaths

A powerful motivation for the development of the Philippines strategy has been the desire to track progress towards reductions in neonatal, infant, child and maternal mortality and to determine who is dying, and where and why, in order to identify effective interventions for averting such deaths. Two innovative IT/e-health interventions have been initiated by the Department of Health. The "Watching over mothers and babies" project[8] is a maternal and neonatal health tracking system that uses tablet computers to send prompts to remind mothers or household and community members to access maternal and child health services. The Maternal Neonatal Deaths Reporting System is designed to improve the capture of all infant and maternal deaths at all levels of the health system and thus eliminate under reporting and late reporting. This will enable the complete enumeration of deaths, including those that occur outside health-care facilities. Both projects aim to incorporate short-message-service applications into the online health data reporting system and converge this with the CRVS system in order to provide *barangay* officials, local civil registrars and city health officers with real-time notifications of the occurrence of births and maternal and neonatal deaths. These two projects are linked to the broader CRVS system through the local-level *barangay* offices, as shown in figure 12.

---

[8] See www.acuityphweb.com/mnhts-womb-project-kickoff-meeting-with-doh/.

Figure 12. Structure of the CRVS system in the Philippines



Source: World Health Organization, "Strengthening civil registration and vital statistics – a case study of the Philippines" (2014). Available from www.who.int/entity/healthinfo/civil_registration/phl_crvs_2014.zip?ua=1. Accessed 20 June 2014.

Improving registration completeness and coverage

Strategies to improve death registration coverage include forging stronger links between health facilities and local civil registrars to enforce the requirement for certification prior to burial. More active strategies are needed to capture deaths occurring outside health facilities and to increase awareness of the importance of death registration, especially in settings where religious practices require immediate action. Activities to improve cause-of-death reporting include the training of physicians and midwives to ascertain causes of death when deaths occur in facilities, and capacity-building for statistical clerks to improve statistical coding to meet ICD-10 standards. For deaths that occur outside health-care facilities, research is underway to assess the feasibility of introducing verbal autopsy techniques.

As part of ongoing efforts to reduce inequities in registration coverage across populations and ethnic groups, mobile registration units are being set up to periodically visit communities to encourage the registration of both births and deaths. Other activities aimed at enhancing community awareness include a call centre for the public to discuss the issues related to civil registration and a weekly public radio show that takes live questions from the audience. February of each year has been designated as "civil registration month", during which free civil registration services are offered, and local civil registrars and provincial and national governments make an active effort to reach out to the public through campaigns that take on a different theme each year.

Despite many challenges, the concerted actions of government, civil society and development partners to strengthen CRVS stand good chances of success. The ability of the system to respond was demonstrated dramatically when Typhoon Haiyan (locally known as Yolanda) made landfall in Eastern Visayas in the Philippines, causing much destruction. Approximately 14.1 million people were affected; 4.1 million individuals were displaced and over 6,200 people lost their lives. Many people lost their civil registration documents, including birth certificates, which are crucial for enabling family reunifications, obtaining government benefits and accessing basic services. Although many local civil registration offices were destroyed or lost their equipment, the majority were able to recreate their civil registration records thanks to the provincial and central databases. This greatly facilitated the urgent issuance of replacement certificates. In addition, the Department of Social Welfare and Development and the Philippine Statistics Authority launched a mobile registration project to reach 100,000 people in the provinces of Leyte, Samar and Eastern Samar toreplace damaged or lost birth, marriage and death certificates.

Kazakhstan: how strengthening CRSV can contribute to improving maternal and child health

In 2001, Kazakhstan reported to the United Nations Statistics Division that the completeness of birth and death registration was at about 90 per cent each. Since then, the legal framework for CRVS in Kazakhstan has been updated, through laws and regulations, on the health of the country and the health-care system (2009), on national statistics (2010), on marriage and family (2011), and on the official registration of civil status (2012). These legislative revisions, along with administrative and structural changes, have increased the completeness of birth and death registration and enabled the production of reliable natality and mortality indicators on a continuous basis for the whole country and for its administrative subdivisions. According to the 2010/11 Multiple Indicatory Cluster Survey, 99.7 per cent of children under 5 years of age have had their births registered (UNICEF, 2013). However, there are no figures on the completeness of death registration.

Access to registration is available through a widespread network of civil registry offices across the country, and it has been further enhanced through the establishment of electronic gateways for the registration of births and through the removal of financial barriers to registration.

Whereas registration and the issuance of certificates are the responsibility of the Ministry of Justice, the National Statistical Agency, an independent government authority, is responsible for collating and processing vital events data for national demographic estimates, such as birth rates, death rates and population growth. The Agency publishes updated information, including various statistical data on population and on health care, and mortality by causes of death, in its statistical yearbook.

The National Commission for Women's Affairs, Family and Demographic Policy, which was established under the President of Kazakhstan, is the agency responsible for monitoring the demographic situation and initiating actions for the further improvement of demographic and vital statistics.

The health sector plays an important role in the registration system. Health facilities issue notifications of births and deaths (all deaths must have a medically certified cause of death in accordance with the international form of medical certificate of cause of death) and collect statistics on births and deaths through the Unified Health Information Management System. The System is the basis for efficient and evidence-based decision-making and planning in the health sector. An important component of the System is its provision of access to and use of high-quality statistical data on births and deaths, which enables the calculation of mortality rates, both crude and age, and sex-and disease-specific mortality. The calculation of specific mortality ratesis possible within the framework of a mandatory, uninterrupted system of vital events registration.

When a birth or death occurs, the health facility sends a notification of the event to the local civil registration office. Births and deaths are reported electronically on a daily basis using forms that include key characteristics of the event. The electronic forms are part of the MLAD software, which enables online data with real-time monitoring. Each month all health-care facilities compare their data on registered births and deaths with the data of the civil registry offices.

The regulations require that the notification form for a birth or the medical certificate of death provided by the medical facility be submitted to the civil registration office by the parents or declarant within a period of two months. A birth or death may be registered at any civil registration office (either at the place of residence or at the place of occurrence of birth or death).

The registration system underpins the national population register – the National Registry – which is a source of information for all of the other government agencies and organizations that provide the population with services. When a parent or other relative brings in the birth notification form, the event is registered in the official registry system and an individual identification number is assigned to the newborn. When a relative brings in a medical certification of death, the primary information – including the name, date of birth and individual identification number of the decedent – is entered into an electronic system.

At the end of each month, the local registration office sends second copies of certificates and registration acts to the local statistics departments, which then enter data into their information system (Information Computing Center of the National Statistical Agency). The original paper documents are kept in the local civil registry offices for 75 years, and afterwards sent to the national archive.

One of the key principles of the National Statistical Agency is consistency with international standards, as well as having reliable, science-based and available official statistical information. In 2008, Kazakhstan adopted ICD for the registration of live births and stillbirths. However, there remains considerable room for improvement in relation to the quality of cause-of-death reporting. Health workers and health organizations code causes of death using ICD-10, but international reporting is currently being done only by aggregated groups. Kazakhstan recognizes the need for reporting on causes of death to WHO using the detailed, 4-digit codes of ICD-10. Efforts are currently under way to this end, including a training of trainers for better quality of coding of causes of death, which is being organized in 2014. Trainers will train a network of health workers at health organizations who will be coders of causes of death.

The Government of Kazakhstan has given high priority to reducing maternal and neonatal mortality. Maternal, infant and child deaths are monitored on a daily basis at all levels of administrative units. All deaths and near misses (serious complications that did not end in the death of the mother or infant) are reviewed in order to identify deficiencies in the quality of care and to ensure that the appropriate measures are taken to improve practices and to reduce the risk of death for women and newborn infants. The ability to identify maternal and neonatal deaths in a timely way facilitates the introduction of the WHO approaches designed to identify ways in which such deaths can be averted, such as confidential enquiries into maternal and neonatal mortality and facility audits of the quality of care.

Major lessons learned from country experiences

Although the five countries discussed in the present paper face varied, complex challenges, the following common issues of importance to CRVS improvement strategies emerge from the experiences of these and other countries in the Asia-Pacific region.

Legislation and policy: All countries in the region have identified the need to ensure that the legislative underpinnings for their CRVS systems are appropriate and up-to-date. In Afghanistan, Bangladesh, Fiji, Pakistan, the Philippines and Sri Lanka, the initial rapid and comprehensive assessments highlighted the need for the modification of the existing legislation, and in some cases, for extensive legislative change. For example, in Bangladesh, the new Births and Deaths Registration Act was passed in 2004, making the possession of a birth certificate mandatory to receive some services, including the national identity card. In Afghanistan, a new civil registration law, which was introduced in 2013, made birth registration compulsory within three months of occurrence, in accordance with United Nations recommendations (previously, a delay of up to one year was permitted). This is an important improvement as early birth registration is associated with increased service use and with an improved quality of vital statistics. Deaths among unregistered infants are very unlikely to be registered, which means that levels of infant mortality are seriously underestimated.

Cross-sector coordination: Another important lesson is the need to build cross-sectoral links. In Fiji, this was identified as critical to the development of the national CRVS plan (see box). In Afghanistan, an early recommendation following the initial situation assessment was to establish a national coordination body for CRVS that would promote collaboration, particularly between MOPH, which is responsible for the notification of vital events, and MOI, which is responsible for the issuance of birth and death certificates. The coordination committee also involves UNICEF, WHO and the Ministries of Education, Islamic Affairs, Rural Rehabilitation and Development, and Foreign Affairs. However, establishing a coordination committee is only the first step; the committee has to be functional and effective. In India, for example, although interdepartmental committees exist at the state level, they are often ineffectual, adversely affecting the completeness and quality of the CRVS system.

Box: Ten lessons learned from Fiji's approach to strengthening CRVS

The experience of Fiji presents an opportunity for other countries to learn from the success stories, the challenges and the adversities experienced and to apply these lessons to their own set of circumstances.

- Ensure that the process of CRVS strengthening takes place at the central level.
- Identify CRVS champions to drive the process forward and to maintain momentum.
- Conduct a rapid assessment of the CRVS system, being sure to engage the right stakeholders.

- Involve development partners and donors in providing technical support and assistance with planning.
- Engage stakeholders and establish a CRVS committee in order to:
    - Foster collaboration, communication and the documentation of processes.
    - Ensure strong leadership and senior management support.
    - Establish guidelines and processes for sharing data and knowledge between agencies, and ensure data and knowledge are shared.
    - Identify strengths and "quick wins" and build on these.
    - Strengthen technical elements of the CRVS system alongside broader systemic issues.
    - Advocate and increase awareness of the importance of CRVS systems and the relevance and use of the vital statistics they produce.
    - Ensure the information produced by CRVS systems is used for policymaking.

Health sector contribution: Several countries have allocated new responsibilities to the health sector, either for the notification of births and deaths to the registration authorities (Afghanistan and the Philippines) or for the issuance of birth certificates (Bangladesh). In Thailand, health workers at community and facility levels are key agents for the notification of births and deaths to the civil registration authorities, and mobile communication devices are gradually being introduced to facilitate notification. One useful approach is to make more effective use of all points of contact between the health services and individuals, such as immunization sessions. In Bangladesh, community-level immunization workers verify the birth certificate on the occasion of the first immunization session and copy the unique birth registration number onto the immunization card. The information is then transferred electronically to the local registrar.

The health sector has unique responsibilities when it comes to the ascertainment of causes of death. Yet several countries acknowledge deficiencies in the skills and understanding of physicians with regard to the correct reporting of causes of death. In India, Kazakhstan and the Philippines, working with medical training institutions and health professionals to improve cause-of-death ascertainment is a key component in the national improvement plan. Country commitments to reducing maternal and newborn mortality have also stimulated increased health sector involvement in CRVS. In Bangladesh, Kazakhstan and the Philippines, initiatives to improve the tracking of maternal, newborn and child deaths are linked to efforts to enhance the performance of the CRVS system overall.

Innovation and IT: Several countries in the region use new IT to accelerate progress in CRVS improvements. In Bangladesh, the registration of vital events is integrated into the "Digital Bangladesh" e-governance scheme, which involves multiple sectors, ministries and the private sector with leadership and oversight by the Office of the Prime Minister. This "whole-of-government" agenda benefits from high-level political commitment, coordination and the existence of a national system of unique individual identification, which enables interoperability across multiple databases. It also benefits from the availability of field level workers – many of whom work in the health sector – who enter data from digital devices directly in the field.

In the Philippines, a public-private partnership with an IT company has been established to computerize the civil registration system and to facilitate the application, processing and issuance of birth and death certificates. The aim of this initiative is to improve the quality of the registration service for citizens by reducing waiting times for the registration and for the issuance of copies, while at the same time ensuring the maintenance of a complete and accurate database of civil registry documents and information, as well as minimizing falsification. While innovation and information and communications technology solutions are often implemented to support improvements to CRVS systems, it is important to keep in mind that these need to be sustainable, supported by a sound institutional framework and embedded in overall CRVS strategies in order to provide long-term benefits.

Community awareness: Community awareness and mobilization have been identified as essential for success in all countries. In the Indian state of Rajasthan, public awareness campaigns have been carried out alongside efforts to link service provision with the registration of vital events, and NGOs have been engaged in birth registration. At the national level, the Society for Participatory Research in Asia, an NGO, works to document gaps in death and birth registration and to enhance awareness about registration, especially among the poor and marginalized populations. The Philippines has been particularly innovative, establishing both a call centre for the public to discuss issues related to civil registration and a weekly public radio show that takes live questions from the audience.

Conclusions

With the growing regional and global momentum for improvement in CRVS, more countries are conducting CRVS assessments, developing improvement action plans, establishing coordination committees and working to increase public awareness and to mobilize political will and resources. Despite the very different circumstances and capacities available in diverse settings, there is much to be learned from these country efforts. This can only happen, however, if country experiences are documented and shared. Regional partners such as ESCAP can play powerful roles in supporting the exchange of experiences and mutual learning. As noted in the ESCAP Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific, a strong regional platform should be established through which country stakeholders, development partners and technical experts can share experiences, document good practices and propose innovative approaches to tackling CRVS challenges.

References

Abouzahr, C., and others (2010). Mortality statistics: a tool to improve understanding and quality. Working Paper, No. 13.Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland. Available from www.uq.edu.au/hishub/wp13. Accessed 22 August 2012.

____________(2014). A development imperative: civil registration and vital statistics systems in the *Asia-Pacific region. Asia-Pacific Population Journal*, vol. 29, No. 1.

Carter, K., and others (2011). Capture-recapture analysis of all-cause mortality data in Bohol, Philippines. *Population Health Metrics*, vol. 9, No. 9.

James P. Grant School of Public Health (2012). Unpublished progress report for MOVE-IT Bangladesh.

Hufana, L., and others (2009). Assessing the production, quality and use of national vital statistics: a case study of the Philippines. Documentation Note Series, No. 2 (November). Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland.

India, Ministry of Home Affairs (2010). *Annual Health Survey Report 2010/11*. Available from www.censusindia.gov.in/vitalstatistics/annual health survey.

India, Office of the Registrar General (2009). *Report on Medical Certification of Cause of Death*. New Delhi.

__________(2011). *Vital Statistics of India Based on the Civil Registration System.* New Delhi. Available from www.censusindia.gov.in/2011-Documents/CRS_Report/CRS%20Report_2011.pdf.

Kijsanayotin, B., P. Ingun and K. Sumputtanon (2013). *Review of National Civil Registration and Vital Statistics Systems: A Case Study of Thailand*. Bangkok: Thai Health Information Standards Development Center (THIS), Health Systems Research Institute. Available from http://kb.hsri.or.th/dspace/handle/11228/3989?src=%2Fdspace%2Fdiscover%3Fquery%3DCRVS%26filtertype%3Dsubject%26filter_relational_operator%3Dequals%26filter%3DCivil%2Bregistration&offset=1&firstItem=&lastItem= . Accessed 16 June 2014.

Kumar, A., and others, eds. (2007). *Mortality Statistics in India 2006: Status of Mortality Statistics Reporting in India – A Report*. New Delhi: Central Bureau of Health Intelligence.

Mikkelsen, L. (2012). Strategic planning to strengthen civil registration and vital statistics systems: guidance for using findings from a comprehensive assessment. Working Paper Series, No. 23. Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland. Available from www.uq.edu.au/hishub/docs/WP23/HISHUB-WP%2023-02%20OCT.pdf.

Naidu, S., M. Buttsworth and A. Aumua (2013). Strengthening civil registration and vital statistics systems in the Pacific: the Fiji experience. Working Paper Series, No. 35 (August). Herston, Australia: Health Information Systems Knowledge Hub, University of Queensland.

Navaratne, K.V. (2009). Improving vital statistics through the civil registration system in Sri Lanka. Paper presented at the Strengthening Civil Registration Meeting. 9 June. Available from http://siteresources.worldbank.org/INTHSD/Resources/376278-1114111154043/1011834-1247677403598/060909SriLankaPresentation.pdf.Accessed 22 August 2012.

Noman, Z. (2014). Desired legislations and CRVS in-depth review. Paper presented at the Conference on Civil Registration and Vital Statistics. Bhurban, Pakistan, 20 and 21 March.

Philippines, Department of Health (no date). Maternal and neonatal death reporting system.

Philippine National Statistics Office, Philippines Department of Health and World Health Organization (WHO) (2014). The Philippines Civil Registration and Vital Statistics Indicative Investment Plan 2015-2019. Report prepared for the CRVS Investment Planning – Technical Consultation Meeting, Addis Ababa, 28 and 29 April. Available from www.who.int/healthinfo/civil_registration/TechnicalConsultation_April2014/en/.

Society for Participatory Research in Asia (2004). Birth and death registration. PRIA News, vol. 5, No. 2 (July-September).

United Nations Children's Fund (UNICEF) (2006). Birth registration: the picture in India. Available from www.unicef.org/india/child_protection_1629.htm.

____________(2013). *Every Child's Birth Right: Inequities and Trends in Birth Registration.* New York. Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf. Accessed 20 April 2013.

World Bank and World Health Organization (WHO) (2014). Global civil registration and vital statistics: scaling-up investment plan 2014-2025. Draft.

World Health Organization (WHO) (2014). Strengthening civil registration and vital statistics: a case study of the Philippines. Available from www.who.int/entity/healthinfo/civil_registration/phl_crvs_2014.zip?ua=1.Accessed 20 June 2014.

World Health Organization (WHO) and University of Queensland(2010a). *Rapid Assessment of National Civil Registration and Vital Statistics Systems*. Geneva: WHO. Available from http://whqlibdoc.who.int/hq/2010/WHO_IER_HSI_STM_2010.1_eng.pdf.Accessed 22 August 2012.

_________________(2010b). *Improving the Quality and Use of Birth, Death and Cause-of-death Information: Guidance for a Standards-based Review of Country Practices*. Geneva: WHO. Available from http://whqlibdoc.who.int/publications/2010/9789241547970_eng.pdf. Accessed 22 August 2012.

Civil Registration, Human Rights, and Social Protection in Asia and the Pacific[1]

Abstract

In this paper, the impacts of civil registration are examined as they relate to the realization of human rights and access to social protection, using examples from countries in the Asian and Pacific region.

In the paper, it is claimed that civil registration and vital statistics systems are essential to the realization of human rights and the ability of individuals to access basic social protection services. It is also claimed that individuals should not be denied access to such rights and services as health and education on the basis that they are not registered. At the same time, it is acknowledged that legal identity realized through civil registration may be used equally by Governments to define who is entitled to rights and services and who is excluded. It was found that the relationship between civil registration, the realization of rights and access to services is largely dependent on context.

The paper contains recommendations that legislation on civil registration be universal in scope and that it facilitate the registration of vital events of all individuals, regardless of their situation. Further recommendations include the simplification of registration procedures, outreach activities for remote and mobile populations and building social considerations into programme design to increase the coverage and effectiveness of civil registration.

By Lucía González López, Tanja Brøndsted Sejersen, Nicholas Oakeshott, Gaspar Fajth, Taimur Khilji and Nicoleta Panta

Introduction

Civil registration – the administrative recording of vital events, such as births, deaths, adoptions and marital status of individuals – has profound implications for development and the realization of human rights. At the individual level, birth registration is the basis for the provision of official certificates that establish a person's legal identity, a key requirement in modern States for the realization of people's rights and the provision of public services.

---

[1] Lucia Gonzalez Lopez (Social Development Division, ESCAP), Tanja Brøndsted Sejersen (Statistics Division, ESCAP), Nicholas Oakeshott (UNHCR), Gaspar Fajth (UNICEF), Taimur Khilji (UNDP) and Nicoleta Panta (Plan International).

In spite of its importance, in the Asia-Pacific region only 44 per cent of children under age 5 are registered. As of 2013, 135 million children younger than age 5 in Asia and the Pacific had not had their birth registered, and in some South Asian countries, birth registration rates are lower than 27 per cent (UNICEF, 2013). Data on death registration are scarce, but it is known that South-East Asia and sub-Saharan Africa have the highest number of uncounted deaths (WHO, 2012). In India, about 67 per cent of all deaths are registered (Abouzahr and others, 2014a). In Indonesia, in the poorest 30 per cent of households, 55 per cent of couples do not have a marriage certificate (Australia Department of Foreign Affairs and Trade, 2014). Registration coverage rates for other vital events, such as adoption and divorce, rarely exist.

It is argued in this article that civil registration and vital statistics systems are essential to the realization of human rights and the ability to access basic social protection,[2] as evidenced by country examples in Asia and the Pacific. At the same time, it is claimed in this article that legal identity realized through civil registration may be used equally by Governments to define who is entitled to rights and services and who is excluded. The relationship between civil registration, the realization of rights and access to services was found not to be inherent but dependent on context (Apland and others, 2014).

The present article is focused predominantly on the impacts of civil registration at the individual level, with some explanations of the benefits of population registers for the implementation of social policies. The benefits of civil registration for development and society as a whole are explored in greater detail in the first article of the present issue of the *Journal*, entitled "A development imperative: civil registration and vital statistics systems in the Asia-Pacific region" (Abouzahr and others, 2014b).

The scope and role of legal identity

Different studies explored in the following paragraphs have examined legal identity in varying national contexts and its role in development and in facilitating the realization of the human rights of individuals. In those studies, different facets of the relationship between civil registration, the provision of legal documentation, legal identity and access to social protection have been identified but a uniform definition of the concept of legal identity has not been employed.

---

[2] For the purpose of the present article, social protection is defined using the International Labour Organization definition of the social protection floor, that is, encompassing access to basic education and health services, and basic income security for children, individuals of working age unable to earn sufficient income and older persons (International Labour Organization, 2012).

While bearing in mind this absence of a universally accepted and applied definition, legal identity may be defined as the recognition of a person's existence before the law, facilitating the realization of specific rights and corresponding duties. Legal identity, evidenced by legal documentation that is produced on the basis of the registration of vital events, can encompass such characteristics as name, age, place of birth, address, sex, gender, marital status, nationality and, depending on the national context, these are sometimes linked to a personal identification number or/and identity card. This article is focused on the recognition and realization of legal identity in legally accepted documents establishing such individual characteristics.

Legal identity is also guaranteed by a number of provisions of international law to which member States have committed. Under the Universal Declaration on Human Rights, it is recognized that everyone has the right to be recognized before the law, and that all are equal before the law and are entitled without any discrimination to equal protection of the law.[3] Widely ratified international human rights treaties require States parties to register every child immediately after birth.[4] The Convention on the Rights of the Child also guarantees the child's right to preserve his or her identity, including nationality, name and family relations as recognized by law without unlawful interference. If a child is illegally deprived of some or all of the elements of his or her identity, States parties are mandated to provide assistance and protection with a view to re-establishing speedily his or her identity.

International human rights bodies continue to promote the realization of these rights. In 2012, the United Nations Human Rights Council adopted a resolution entitled "Birth registration and the right of everyone to recognition everywhere as a person before the law".[5] This resolution includes a call to States to "identify and remove physical, administrative, procedural and any other barriers that impede access to birth registration, and to pay attention to barriers relating to poverty, disability, gender, nationality, displacement, statelessness, illiteracy and detention contexts, and to persons in vulnerable situations".

In addition, securing an individual's legal identity is being increasingly considered an imperative for development. In the report of the High-level Panel of Eminent Persons on the Post-2015 Development Agenda, entitled *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*,[6] the following was noted:

---

[3] See General Assembly resolution 217A(III).

[4] For details, see United Nations, *Treaty Series*, vol.1577, No.27531 and General Assembly resolution 2200A(XXI), annex.

[5] See United Nations Human Rights Council resolution 22/7.

[6] Available from www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf.

> *Government is responsible for maintaining many of society's central institutions. One of the most basic institutional responsibilities is providing legal identity. Every year, about 50 million births are not registered anywhere, so these children do not have a legal identity. That condemns them to anonymity, and often to being marginalised, because simple activities – from opening a bank account to attending a good school – often require a legal identity.*

As a result, it was recommended that States should adopt a goal to provide free and universal legal identity, such as birth registrations, as part of ensuring good governance and effective institutions (United Nations, 2013).

In a recent large-scale survey in Indonesia the extent to which individuals held birth certificates and other forms of legal identity documentation was examined as well as the impact this situation had on their lives. A number of key conclusions were drawn. First of all, guaranteeing people's access to legal identity through civil registration and documentation is not only essential in order to comply with human rights principles, but it is also a fundamental aspect of good governance and inclusive development. Second, for the poor and the marginalized, for women and children and for persons with disabilities, birth, marriage and divorce certificates play a critical role in their ability to access education, health services, social assistance programmes and legal protection. Finally, it was concluded that legal identity goes beyond providing people with a piece of paper. Birth, marriage and divorce certificates are a critical part of a modern civil registration and statistics system (Australia Department of Foreign Affairs and Trade, 2014).

Persons are considered "undocumented" when they lack the ability to exercise their full rights (protection before the law and social, economic and cultural rights) or to fulfil their duties, such as voting or paying taxes, because they cannot prove their identity. Lack of legal identity can take at least two forms: (a) absolute, which is the case when the person's birth has not been registered, and therefore that person has no birth certificate or identity document; or (b) relative, where the person's birth had been registered but he or she has lost the registration document or did not receive it due to a registration error, and thus never obtained a national identity document (Harbitz and Tamargo, 2009). The failure to register births in a timely fashion is the precursor to problems related to lack of legal identity in adulthood. Within certain national contexts, legal identity can, however, be obtained through other means and forms of proof (Apland and others, 2014). For example, in India, "ration cards", "caste certification" and voter identification cards (IDs) may be used as alternative means of documentation (Apland and others, 2014).

There are different official procedures and requirements for registration and obtaining legal documents across the region. For instance, who is empowered to register an event, timelines, fees, registration access points and documentary requirements vary from country to country – sometimes within countries – and by type of identity document. National systems built around identity management exist in a wide variety of forms across the Asia-Pacific region. Identity management systems are not, however, always linked with civil registration, as these often fall under the responsibility of different government departments.

In a previous multi-country study of States in Asia it was concluded that, while civil registration and the legal documents produced as a result thereof play a key role in the allocation of benefits and access to rights, it does not in itself guarantee the provision of those rights. The role of civil registration in accessing rights and services is most pronounced in cases where laws, policies, or practices make access strictly contingent on the possession of a birth certificate or identity documents derived therefrom, and other more fundamental economic, political and social obstacles do not impede access (Asian Development Bank, 2007).

Regarding the first premise, many countries in the Asia-Pacific region and in the world make access to services contingent on identity verification through the presentation of a birth, marriage or death certificate, depending on the service. While civil registration is important for both individuals and societies, a key danger in making access to rights and benefits strictly contingent on legal identity documentation is that it may lead to the exclusion of unregistered and consequently unrecognized citizens. Unregistered citizens are usually found among already poor and vulnerable groups. In some instances where civil registration coverage is low, States may create alternative mechanisms in the interest of preserving individuals' access to rights.

As for the second premise, civil registration and legal identity do not exist in a vacuum, but in specific political and socioeconomic contexts that can affect the coverage and quality of registration and regulate access to social protection. Armed conflict, weak social protection policies for migrants, obstacles to registration, such as distance, time required, cumbersome processes and high civil registration fees, are some of the factors that may impede the achievement of high registration rates and therefore limit individuals' access to opportunities, whether intentionally or unintentionally. Understanding these obstacles and their consequences is important in order to find alternatives and solutions that promote social inclusion and development. The significance of legal identity varies significantly among countries and is highly dependent on the levels of State management and of formal interaction between a country and its residents (Apland and others, 2014).

Why civil registration matters in accessing rights and services throughout the life course

Civil registration has an impact on people's access to rights and services throughout their life course. For instance, lacking a birth certificate poses problems in childhood when attempting to access educational services, in adulthood when trying to obtain formal employment and access health services, and in old age when endeavouring to claim pension benefits and social allowances. In the following sections, the role of civil registration throughout the life course is described, i.e. how civil registration affects children, the working age population and older persons.

1. Children

Currently, more than 230 million children around the globe have not had their birth registered (UNICEF, 2013). A birth certificate can help protect children against child marriage, child labour, recruitment of child soldiers and trafficking in children. It provides a child with the basis for acquiring a nationality and records parental information. In the event of separation due to a disaster or national emergency, the existence of a birth certificate or the records found in population registries can facilitate tracing families, as there is documentation on the child's origin (Plan International, 2014, UNHCR, 2010a). A birth certificate can prevent abductions and illicit adoptions, and it entitles a child to access the juvenile justice system and claim his or her inheritance rights. Access to education is often given as a reason for obtaining a birth certificate (Apland and others, 2014). Without birth registration and ensuring birth records, it is impossible for Governments to have a complete list of potential school-age children, making the concept of compulsory education meaningless (Powell, 1980). The extent to which a birth certificate is needed for school enrolment is country-specific.

Certain countries, such as India, specifically state that alternative documents to the birth certificate can be used to access education (Apland and others, 2014). According to the 2009 Right of Children to Free and Compulsory Education Act, alternative documents or a declaration of the age of the child should be accepted in lieu of a birth certificate. Interviews conducted by Plan International in India suggest that, despite the lack of a legal requirement for a birth certificate, many children and parents are still under the impression that a birth certificate is necessary for school enrolment (Apland and others, 2014).

In Viet Nam, on the other hand, a birth certificate is legally required for enrolment in both preschool and primary school. Viet Nam has high birth registration coverage (95 per cent), but parents younger than 18 years of age with more than two children[7] or of disputed nationality are less likely to register their children, further disadvantaging such already vulnerable children (Apland and others, 2014).

In countries where social protection includes free or subsidized healthcare, lack of identity documents may also create an obstacle to accessing such services. Often access to free or subsidized healthcare depends on obtaining an identity or health insurance card. A case in point is Viet Nam, where a health insurance card guarantees free healthcare for children under age 6 and reduces the cost of healthcare for other vulnerable groups (Apland and others, 2014).

A recent study by Plan International (Apland and others, 2014) assessed health outcomes and the relationship to birth registration using Demographic and Health Survey data. The study suggested some positive correlation between indicators of child nutrition, medical treatment and birth registration, although the direction of the relationship will remain unclear until further research is conducted (Apland and others, 2014). The positive correlation could be explained by the fact that children born in a health facility are more likely to have their births registered as well as have access to health services than those born at home. According to UNICEF, immunization efforts provide an opportunity for health-care workers to be alerted when no health card or birth certificate is produced for the child, leading vaccination to be viewed as a potential point of entry to registration for a child (UNICEF, 2005).

Although birth registration serves as official proof of age, which can be used to enforce laws relating to minimum age for employment and thus prevent child labour, the link between child labour and birth registration seems to be weak, as child labour is much more dependent on enforcement of labour legislation and other factors than on the ability to prove children's age (Apland and others, 2014).

2. *Working age population*

The lack of civil registration has varied manifestations. For example, a sixth of the South Asian labour force (more than a 100 million people) comprise the working poor,[8] many of whom do not have access to State-

---

[7] Respondents to the study undertaken by Plan International explained that Viet Nam's unofficial two-child policy led some parents to not register the third, fourth or subsequent children because this would imply having to admit to having violated a government policy (Plan International, 2014). Respondents also reported that it is difficult to obtain a birth certificate for a baby when his or her parents are younger than 18 years of age, but it is unclear from the information gathered whether this is a requirement of law or a barrier experienced by some individuals in practice.

[8] Individuals that are vulnerably employed are defined here as those earning less than $1.25 aday.

provided social protection precisely because they lack a legal identity. For women, a lack of legal identity acts as a double deficit, as women are more likely to be unemployed and face discrimination on several other fronts, often being relegated to having to endure a vicious cycle of dependence and exclusion.

Identity documents are a gateway to the full enjoyment of the rights of citizenship, including access to formal employment. In Australia, for instance, the "right to work" is currently granted to Australian and New Zealand citizens who present a passport and birth certificate, and to everyone else holding a visa with work rights. However, many Aboriginal and Torres Strait Islander people are often unable to obtain a birth certificate because their birth was never registered, or they cannot satisfy the identification requirements for births, deaths and marriages (OnemdaVicHealth Koori Health Unit, 2013). The significant gap between the birth registration rates of indigenous and non-indigenous Australians is a factor contributing to the difference in their unemployment rates, estimated at 17 per cent and 5 per cent, respectively, as of 2011 (Australian Bureau of Statistics, 2012).

As previously observed, there is a link between employment and possession of registration documents. In the absence of formal identification documents, workers may turn to other means to access employment. Foreign fishermen and their dependents in Thailand often obtain informal identification documents from provincial authorities in order to protect themselves from arrest by local police. Although these documents are not recognized at the federal level and do not provide access to any services, the fishermen have to pay a monthly fee to maintain these documents (International Labour Organization, 2013).

Informal employment, in particular in the form of informal firms, is particularly related to registration documents. It is often difficult for informal firms to gain formal status, as owners of firms may require several pieces of documentation in order to register their business: at the minimum, a national identity card, birth certificate or other identification documentation. In Sri Lanka, obstacles to obtaining such documents are seen as a reason for not formalizing businesses (De Mel and others, 2012). In countries with contributory social protection schemes, informal workers (in formal or informal establishments) are often excluded from benefits, such as death and disability insurance, health insurance and old age insurance (pensions). While informal employment can play an important role in keeping open economies competitive (through lowering the cost of labour, new hiring and retrenchment), it leaves individuals and their families highly vulnerable to idiosyncratic and covariate shocks.

Citizens living in urban informal settlements may also be denied the legal protection and economic benefits of those in formal settlements. In informal settlements, for instance, if a household or its occupants lack registration, access to a city's water supply network is denied on legal grounds and people are forced to buy water from private vendors at a much higher cost than would be the case otherwise, thereby increasing their level of poverty (United Nations Office of the High Commissioner for Human Rights and others, 2003).

A birth certificate is a prerequisite for obtaining a passport, getting a driver's licence and being granted a tax file number, and it is also frequently required in order to access social security systems and open a bank account (OnemdaVicHealth Koori Health Unit, 2013). In short, being in possession of identity documents is a prerequisite for full participation in society.

3. Older persons

Proof of age, marriage and death is a critical requirement for claiming certain rights and benefits, such as pensions, social allowances and inheritance rights. There is therefore a clear relationship between access to social protection and older persons holding legal documentation of their age and civil status.

Older persons are particularly vulnerable to exclusion from programmes providing income security and other services. Older persons are less likely than people in other age groups to possess proof of their age and identity, as in many countries the current generation of older persons had been born before civil registration systems were introduced, and thus they were unable to obtain identity documentation at birth (HelpAge International, 2011). Geographical and ethnic disadvantages also affect older persons in their ability to enjoy their rights and access services. In Thailand, for instance, several studies have highlighted the difficulties that older people face in accessing the so-called old-age allowance and other government services; this situation also applies to Muslims and people living in remote mountainous areas who lack identity documents and cannot prove their citizenship (United Nations Development Programme, 2012).

Further barriers for older people include the physical and financial costs of navigating bureaucratic procedures, as older persons are particularly affected by poor health, disability and poverty. Low literacy rates and the lack of birth certification can lead to exclusion due to misspelt names and to ages that are approximated or randomly assigned (HelpAge International, 2011). Gaps and inaccuracies in the age or date of birth details in existing documents pose a greater challenge for older women than for older men. This is explained by the general tendency for women to have lower levels of literacy compared with men.

There are various cash transfer programmes throughout the region set up to provide vulnerable older persons with social pensions and allowances. The success and the impact of non-universal cash transfer programmes depend on the accuracy of the targeting process, which in turn essentially depends on the effectiveness of the registration process (HelpAge International, 2011). Age-based cash transfers, such as child grants and social pensions, are being implemented in many countries and tend to be administratively simpler and more effective in minimizing targeting errors than other methods. However, verifying age in countries with weak civil registration systems can prove to be a significant barrier to implementation, with vulnerable people, including older persons, being unable to obtain identity documents, or encountering significant difficulties in doing so (HelpAge International, 2011).

Two important aspects of civil registration policy that affect civil registration records among older persons are the existence of incentives and of institutional efforts. Government campaigns and institutional efforts to elicit higher registration rates from the population tend to target mainly children and their parents, rather than people in the older age groups. In addition, unlike children who need birth certificates to attend school, older persons have fewer incentives and opportunities to seek identity cards or other legal civil registration records (HelpAge International, 2011). Whereas age-based cash transfers and old-age discounts for certain services provide an incentive for the registration of older persons, health and other types of services are provided for independently of proof of the recipient's age. Registering the marriage and death of older persons mainly benefits the deceased person's family members, as it allows them to claim the right to inheritance and life insurance benefits. There are often obstacles to claiming these rights however. Widows in Nepal, for instance, are entitled to a widowhood pension, but only if they can provide proof of their previous relationship, as well as the death and citizenship certificates of their deceased husband (Asian Development Bank, 2007).

Who is in and who is out? Improving civil registration policies and social assistance to promote social inclusion

Civil registration can be a double-edged sword: on one hand, it helps widen opportunities for development at the individual and societal levels, and on the other, it can have exclusionary effects if proper safeguards are not respected. In contexts where regulations around registration are too rigid, citizens or policymakers do not see the benefits of registration, or obstacles to effective registration exist, population groups lacking identity documents will be at risk of exclusion and increased poverty. As observed in an Inter-American Development Bank study of legal identity in Latin America, "the denial—or limitation—in the exercise of full citizenship that derives from not having a legal identity is aggravated when added to other exclusionary factors such as socio-economic condition and discrimination based on gender, ethnicity, or nationality" (Harbitz and Tamargo, 2009). Civil registration policies have the possibility of improving recognition, status and rights, but can equally be applied for the opposite purpose.

As observed in several countries in Asia and the Pacific, social exclusion and discriminatory practices take place on the basis of ethnicity, language, caste, religion, geographic location of residence and sexual orientation. Population groups at particular risk of exclusion from having a legal identity and thus access to rights and services include ethnic and religious minorities, mobile populations and their children, populations living in remote and rural areas, persons with disabilities, transgender persons and other vulnerable groups. Women are also at higher risk of exclusion, particularly in countries with high gender inequality before the law.

In most countries, there is little divergence between the birth registration coverage of men and women (United Nations Children's Fund, 2013). Despite this, women are adversely affected by lack of registration, although examples of registration issues affecting women in particular are often related to marriage registration. In cases where a marriage between a man and a woman was not registered, and where the husband dies, it may be difficult for the widow to prove inheritance rights and register her children. Children from the marriage may be denied their father's name even in the birth certificate, which can prove to be an obstacle to obtaining a nationality. A case in point is Nepal, where it becomes difficult for a child in such a case to obtain legal documentation when the parents' marriage remains unregistered and the father passes away (Himalayan, 2014).

A combination of birth and marriage registration may have positive effects on preventing child marriages. A recent study of child marriage in Bangladesh showed that there was a negative relationship between birth and marriage registration and child marriage. Respondents in that study pointed out that universal birth and marriage registration, as well as enforcing the use of the actual marriage date on marriage certificates, were likely to assist in preventing underage marriage (Haque and others, 2014). Monitoring gender imbalances within the population has been raised by the Government of India as one of the main possible benefits emerging from the use of more reliable demographic indicators, which could be achieved through a well-functioning civil registration and vital statistics (CRVS) system (Apland and others, 2014).

Persons with disabilities, often found among older persons in the population, not only face physical barriers in registering vital events, but are also sometimes denied the basic right to obtain a birth certificate due to discriminatory practices. In addition, persons with disabilities are often not registered at birth, which means that, although they are equal citizens from birth, they are unable to get the documentation that reflects the fact of their citizenship, such as passports, IDs and voting cards.

Migrants, refugees and stateless persons

Key protections guaranteed by international human rights law apply equally to citizens, stateless persons and migrants, including asylum-seekers and refugees. For example, international human rights law mandates that the births of all children ought to be registered and that no qualifications be made in respect of the right of all individuals to be recognized before the law regardless of their nationality status. Many States in Asia and the Pacific include non-nationals within their respective civil registration systems, including Brunei Darussalam, India, Malaysia, the Philippines, Singapore, Thailand and Viet Nam (UNHCR, 2014a; Apland and others, 2014).

The relationship between birth registration and nationality, a key component of legal identity, is complex and often misunderstood. Registering the birth of a child born to a migrant in a foreign country does not automatically confer the nationality of the host State on the child. Nationality is acquired as a result of the operation of a State's nationality law, on the basis of descent, whereby children acquire the nationality of their parents *(jus sanguinis)*, through a child's birth on a country's territory *(jus soli)* or, usually, a combination of these approaches set out in the detailed provisions of the law. The registration of the child's birth is the first step in establishing its legal identity and usually includes key information, such as the identity of the child's parents and the date and place of birth, that will establish the child's nationality under the law of the State where he or she is born or under the law of other States to which the child has a relevant link (UNHCR and Plan International, 2012). Consequently, birth registration can help in realizing the child's right to a nationality and can help to prevent and reduce statelessness. As a matter of policy, some States in the region have chosen to include the evaluation and confirmation of the child's nationality status at the point of registration (UNHCR, 2014a).

Birth registration can also help the children of migrants to establish their legal identity. In 2008, Thailand amended its civil registration law to allow for the births of all children in Thailand to be registered regardless of the nationality or immigration status of the child's parents. As a result, between 2010 and the end of October 2012, 1,922 children of persons living in "temporary shelters" for "displaced persons" on the border between Thailand and Myanmar had their birth registered and were issued with birth certificates. This not only helped to establish the legal identity of the registered children but also provided a documentary link to their country of origin, which may help in the realization of future durable solutions[9] (UNHCR, 2013a and 2014b).

---

[9] The term "durable solutions" is used by UNHCR to refer to solutions aimed at enabling refugees to rebuild their lives in dignity and peace. There are three main types of solution: voluntary repatriation; local integration; or resettlement to a third country in situations where it is impossible for a person to return home or remain in the host country (UNHCR, no date).

At the end of 2013, the Asian and Pacific region hosted more than 1.8 million stateless people out of a global figure of 3.4 million identified as stateless (UNHCR, 2014b). The majority of these people are not migrants but are living in the country in which they were born and in which their parents were born. Stateless children are particularly at risk of not having a legal identity and not being recognized or protected by the State. They can be denied access to healthcare, including immunization programmes, excluded from school and be kept outside social welfare and child protection systems (UNHCR and Plan International, 2012). This is of particular concern because this group includes many who are not recognized as citizens even though they are entitled to citizenship under the nationality law of the State in which they reside.

States in South-East Asia have also taken steps to prevent and reduce statelessness and to better protect stateless persons (UNHCR, 2011). For example, the Government of Malaysia has undertaken registration and documentation campaigns among long-settled communities where levels of legal identity documentation were low. It has encouraged teachers to help school children without civil documentation to acquire documentation to show that they are nationals (UNHCR, 2014a). In the 1990s, large-scale statelessness arose following the break-up of the Union of Soviet Socialist Republics, with many people losing their nationality when the territory in which they had been born undergoing a change in status and being transformed into another State. States in that subregion have taken steps to address this phenomenon. Kyrgyzstan adopted an action plan on the prevention and reduction of statelessness in 2009 and subsequently implemented that plan. The plan includes actions to prevent and reduce statelessness among the affected population and ensure the birth registration and issuance of birth certificates to all children born within the borders of Kyrgyzstan through analysis and improvement of relevant legislation and practice in accordance with the child code of Kyrgyzstan and the Convention on the Rights of the Child (UNHCR, 2010b and 2013b).

The relationship between civil registration and access to services has been described as “context-specific” and “purely a function of government policy and practice” (Apland and others, 2014). This is particularly true for migrants and refugees. For example, for migrants, the barriers to accessing health services can be both institutional and financial. The marginality of migrants means that they are often faced with a double jeopardy situation of being more likely than non-migrants to need health services but less able to access them. This has implications for the rights of migrants as well as public health principles concerning disease transmission, its prevention, mitigation and where possible, eradication (Asia-Pacific Regional Coordination Mechanism Thematic Working Group on International Migration including Human Trafficking, 2012). Measures have been taken to address this challenge in particular national contexts. For example, Thailand established a process to register and regularize irregular low-skilled migrant workers, particularly those from Cambodia, the Lao People's Democratic Republic and Myanmar; that process includes access to health insurance (Chantavanich, Middleton and Ito, 2013). However, that process has taken place separately from the civil registration scheme for the birth, marriage and death of migrants.

The inclusion of migrants, refugees and non-nationals within civil registration systems can help these groups to access social protection, depending on the national context, government policy and practice. However, social protection systems often do not fully integrate migrants, refugees and non-nationals, and gaps can therefore arise regardless of whether or not legal identity has been established. Civil registration also has an important role to play in helping to establish entitlement to nationality under domestic nationality laws. Even though registration itself does not usually confer nationality, it can contribute to the prevention and reduction of statelessness and to establish other key elements of the child's legal identity, including their parents' identity and the child's date and place of birth. Registering the birth of children can help to establish links between the children and their parents' country of origin, which can help in realizing durable solutions for the children of asylum seekers and refugees.

Social assistance and the use of civil registries

States within the region have taken notable steps to improve levels of civil registration, including among previously excluded or hard-to-reach populations (UNHCR, 2014a). Social assistance programmes represent an effort to expand opportunities available to mainstream society to the vulnerable and disadvantaged segments of the population. Social assistance is one of the key pillars of social protection, although entitlement to such programmes is typically less straightforward and more fragile than is the case with education, public health or social insurance. In social assistance programmes, significant emphasis is often put on preventing benefit hoarding (the so-called doubledip) and requiring prospective beneficiaries to present an array of documentation and evidence (national ID cards, proof of residence, employment, family status, living conditions etc.).

Having high-quality registries – complete, up-to-date and/or integrated information going beyond existing beneficiary lists – matters for social assistance. In looking at the issue from the other end, the breadth and depth of social assistance programmes influence the probability that a child or an adult person (or a key life event that happened to them, such as birth or death, marriage or divorce) will be registered by public authorities. Therefore, good registries are highly important for adequate social assistance, and such programmes can play a pivotal role in assisting the completeness of civil registration and vital statistics.

A recent report published by the Asian Development Bank[10] portrays social assistance programmes, mainly social transfers, child welfare and disaster relief, as:

- Rising in importance;
- Covering more individuals than do social insurance or labour market programmes;
- Absorbing less than half of the aggregate public expenditure of social protection on average in the 35 countries in Asia and the Pacific in 2009.[11]

The rising importance of social *assistance* – and shrinking importance of social insurance programmes, including classic social security type benefits and entitlements, such as health or unemployment insurance, maternity and sick leave and old age pension – is closely related to difficulties in expanding civil registration. There are several issues for consideration here.

The first is that *intended programme coverage* among the poor has traditionally been "too low" in Asia and the Pacific. Where social protection programmes focus chiefly on privileged populations, such as civil servants, and where the rest of the programmes are fragmented, small and/or highly targeted, there will be difficulties in having social assistance programmes respond to individual needs (e.g. to smooth consumption or to provide pathways to accessing different social services) or to societal needs (e.g. sustaining aggregate demand, preventing mass impoverishment). Likewise, under such conditions social protection will provide relatively little support for improved civil registration systems. Workers in informal employment will have a high chance of staying unregistered overall together with their families; in times of crisis, Governments will need to launch ad hoc programmes or upgrade existing programmes (e.g. self-targeting public work), a process that takes extra time and involves high cost.

Even if several large conditional cash transfer or other social assistance

---

[10] For details, see The Social Protection Index: Assessing Results for Asia and the Pacific. Available from www.adb.org/publications/social-protection-index-assessing-results-asia-and-pacific.

[11] The methodology of the Social Protection Index does not include price subsidies (mainly food and energy), consideration of which would probably change this conclusion – even if it is clear that these public expenditures also reflect concerns beyond social protection. The Bank's social protection strategy defines social protection as a set of policies and programmes designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people's exposure to risks and enhancing their capacity to protect themselves against hazards and interruption/loss of income (ADB, 2011).

programmes were initiated or enlarged in the wake of the 1997 Asian financial crisis and the so-called 2007/08 great recession, most countries in Asia and the Pacific would still be far from having in place an effective social protection floor and/or a well-integrated social protection system.

Second, the very same characteristics which are built into the programme or system to ensure minimizing inclusion errors – giving benefits to people who are not entitled to them – will in fact often sustain and enlarge *exclusion errors*. People who should get the benefit or service will remain outside the programme or the social protection system. Such exclusion errors, which lead to unintended, "passive" exclusion of beneficiaries, are ubiquitous among narrowly targeted programmes, increasing the risk that birth certificates, IDs and residence cards and other requirement become tools of social exclusion instead of levers of inclusion. In Thailand, an evaluation found that means-testing old-age allowances led to half the underprivileged older persons being unregistered in the programme (United Nations Development Programme, 2012).

Nonetheless, exclusion errors can undermine even the more universal programmes. After Thailand introduced the universal 500-baht[12] pension scheme, including through two enrolment campaigns, the registration rate among the entitled beneficiaries stood at 78 per cent, with an estimated 1.2 million older persons not yet registered for the scheme in late 2010. Similarly, in South Africa, for example, a recent evaluation of the country's flagship child grant programme – which reaches more than 60 per cent of South African children – found nearly 2 million intended beneficiaries excluded from the programme (UNICEF, 2012).

A well-developed civil registration system and population register can form the backbone of a *unified registry for social programmes*. Such a unified registry can then be instrumental in addressing overlapping economic and social vulnerabilities through an effective and efficient social protection system, rather than via a loose patchwork of programmes constantly filling in the gaps in the social protection floor by small-scale, additional interventions.

At the societal level, a sound civil registration system lays the foundation for obtaining reliable vital statistics, i.e. statistics on births, adoptions, deaths and marriages meant to be collected for the entire population on a continuous basis. This information serves as a solid basis to plan for people's needs, among other things, to estimate the number of schools that will be needed in a given area, to understand mortality patterns and reorient the health system accordingly and to adjust budgets to the size and needs of the population in specific geographical areas. Good-quality vital statistics therefore enable researchers and policymakers to better

---

[12] At the current rate of exchange, US$ 1 is equal to about 32 baht.

identify problems in a given population, develop effective programmes and monitor their impact. In addition, the work of civil registers is the backbone for other official registers and provides the infrastructure for good governance. Szreter (2006) maintained that identity registration and the provision of social security laid important foundations for development, noting that "identity registration can also be a multi-faceted institutional mechanism for simultaneously promoting economic growth, population health, and welfare". Unfortunately, as described by Abouzahr and others (2014b), many countries in Asia and the Pacific have systems in dire need of improvement.

Conclusions and recommendations

In this article, the links between access to legal documentation, such as birth, marriage and death certificates, and access to social protection and the often linked realization of human rights have been examined. Owing to non-registration alone, information on unregistered persons is often scarce. Unregistered persons are invisible to the State; therefore, their level of vulnerability and the limitations they face in gaining access to social protection can be difficult to assess.

Various basic social protection provisions, such as education, health care and social assistance programmes, often bypass individuals whose vital events are not registered. Additionally, the lack of registration results in population registers with only limited coverage; in addition, it limits the quality of vital statistics and thus poses a challenge to good governance, hindering evidence-based policymaking and planning. A lack of vital statistics can make it difficult to assess whether universal education and health care are being provided and whether long-term needs for facilities are secured. As the allocation of public resources depends largely on an accurate assessment of gaps, the lack of good-quality vital statistics poses a real challenge in terms of determining needs.

This article also contained a discussion on how the relationship between civil registration and the realization of rights and services varies according to country-specific contexts. However, it is clear that registration is a benefit to the individual in almost all circumstances, and exclusionary effects can be minimized when registration is applied in an inclusive and effective manner. More comprehensive and inclusive civil registration is likely to better align the allocation of resources with real needs, thus improving the effectiveness of social protection schemes and other public investments.

Without a formal identity, it is difficult for an individual to fully participate in society. Some possible benefits of registration are, however, difficult to assess. Due to the "invisibility" of unregistered persons, little data exist on the impact of non-registration on the increase in certain types of vulnerability, such as the recruitment of children for organized crime. However, it is likely that the impacts of low registration, due to their link to realization of rights and access to services, include lower school enrolment, decreased access to formal employment and decreased access to health services.

While noting the high diversity of CRVS and legal contexts within the Asia-Pacific region, there are a number of general recommendations that can be highlighted in order to increase the effectiveness and inclusiveness of CRVS, leading to an increase in individuals' opportunities for full participation in society.

It is essential to ensure that the legislation on civil registration is universal in scope and facilitates the registration of vital events of all individuals, regardless of their situation. Simplifying registration procedures and enhancing user-friendliness of the application process are important steps towards ensuring high coverage of civil registration and minimizing possible exclusionary effects. Outreach activities to include remote and mobile populations, as well as building social considerations (gender, age, disability, cultural, group-specific, area-specific etc.) into programme design would further increase registration coverage.

With regard to the right of children to be registered at birth, registration processes that are separate from the establishment of the marital status of parents and citizenship or origin status can contribute to the confirmation of a child's legal identity by registration, including for the children of undocumented migrants, refugees and non-nationals. Providing a legal identity from birth guarantees that the realization of rights and access to services later on in life will not be denied exclusively on the basis of a person's registration status. Civil registration for non-nationals is distinct from the granting of legal residency. The registration of the births of children includes key information, such as the identity of the child's parents and the date and place of birth, which will establish the child's nationality under the law of the State where he or she is born or under the law of other States to which the child has a relevant link. However, registration itself does not automatically grant nationality or legal residency.

Governments also need to decide how to protect the confidentiality of data while ensuring the right of family members to have access to such information. As indicated by Harbitz and Tamargo (2009), processing information disaggregated by sex and ethnicity should be a sine qua non requirement for the production of information of this type. However, such information is extremely sensitive, and every measure should be taken to protect the information from being used for political or discriminatory purposes, either directly or by function creep.

It is essential to be aware of the potentially negative aspects of civil registration and provide solutions to counter such aspects. Regarding social assistance programmes, countries can consider the potential unintended consequences of incentives and initiatives to promote civil registration and ensure that efforts to increase registration do not have any adverse impacts on the enjoyment of other rights, and address these instances in both advocacy and programming. Some of the actions that have a good record in reducing exclusion errors in social protection programmes are ensuring active links to social work and adequate referral mechanisms; strengthening demand by researching and addressing bottlenecks in access, uptake and adequate use of benefits; planning jointly with sectoral ministries, local governments and civil society making parallel adjustments in the supply side of services; securing adequate complaint and remedial mechanisms; using better digital technology; and evaluating programmes periodically and making sure necessary adjustments are followed through.

Individuals should not be denied access to rights and services, such as health care and education, on the basis that they are not registered. Inclusive and effective civil registration and vital statistics systems would contribute not only to safeguarding individual rights, but to strengthening development in Asia and the Pacific.

References

Abouzahr and others (2014a). Strengthening civil registration and vital statistics in the Asia-Pacific region: learning from country experiences. *Asia-Pacific Population Journal*, vol. 29, No. 1.

___________ (2014b). A development imperative: civil registration and vital statistics systems in the Asia-Pacific region. Asia-Pacific Population Journal, vol. 29, No. 1.

Apland, Kara and others (2014). Birth registration and children's rights: a complex story. Surrey, United Kingdom: Plan International, Coram Children's Legal Centre, and the International Observatory on Statelessness. Available from http://plan-international.org/about-plan/resources/publications/campaigns/birth-registration-research. Accessed 5 June 2014.

Asia-Pacific Regional Coordination Mechanism Thematic Working Group on International Migration including Human Trafficking (2012). *Situation Report on International Migration in South and South-West Asia*. Bangkok.

Asian Development Bank (ADB) (2007). *Legal Identity for Inclusive Development*. Philippines. Available from www.adb.org/sites/default/files/pub/2007/legal-identity.pdf.

_______________ (2011). *The Revised Social Protection Index: Methodology and Handbook*. Mandaluyong City, Philippines. Available from www.adb.org/sites/default/files/spi-handbook.pdf.

Australia, Bureau of Statistics (2012). *Labour Force Characteristics of Aboriginal and Torres Strait Islander Australian: Estimates from the Labour Force Survey*. Available from www.abs.gov.au/ausstats/abs@.nsf/Products/0930C8EA56A14018CA257A460018E3FA?opendocument. Accessed 21 April 2014.

Australia, Department of Foreign Affairs and Trade (2014). *AIPJ Baseline Study on Legal Identity – Indonesia's Missing Millions*. Available from www.aipj.or.id/uploads/reports_publication/8_f_20140227-011003_FA_baseline_report_english.pdf.pdf.Accessed 1 June 2014.

Chantavanich, S., C. Middleton and M. Ito, eds. (2013). *On the Move: Critical Migration Themes in ASEAN*. Bangkok, International Organization for Migration and Chulalongkorn University–Asian Research Center for Migration. Available from www.arcmthailand.com/documents/publications/OntheMoveAllChapter_Cover.pdf. Accessed 17 June 2014.

De Mel, Suresh, David McKenzie and Christopher Woodruff (2012). The demand for, and consequences of, formalization among informal firms in Sri Lanka. Working Paper No. 18019. Cambridge, Massachusetts: National Bureau of Economic Research. Available from www.nber.org/papers/w18019.pdf.Accessed 17 April 2014.

Harbitz, Mia, and Maria del Carmen Tamargo (2009). Identity in situations of poverty and social exclusion: the link between gender, ethnicity, and legal identity. Technical Note. Washington, D.C.: Inter-American Development Bank. Available from http://publications.iadb.org/bitstream/handle/11319/5456/The%20Significance%20of%20Legal%20Identity%20in%20Situations%20of%20Poverty%20and%20Social%20Exclusion.pdf?sequence=1. Accessed 17 June 2014.

Haque, A.K.M. Fahmidul and others (2014). Knowledge, approach and status of early marriage in Bangladesh. *Science Journal of Public Health*, vol. 2, No. 3, pp. 165-168. Available from http://article.sciencepublishinggroup.com/pdf/10.11648.j.sjph.20140203.14.pdf. Accessed 17 June 2014.

HelpAge International (2011). Challenges and opportunities for age verification in low- and middle-income countries. Pension Watch Briefing Series, No. 6. Available from www.pension-watch.net/download/4f059a6904825. Accessed 13 April 2014.

The Himalayan (2014). Marriage not registered by parents, child's future bleak. *The Himalayan*, 27 April 2014. Available from www.thehimalayantimes.com/fullNews.php?headline=Marriage+not+registered+by+parents%26sbquo%3B+child%27s+future+bleak&NewsID=413097. Accessed 30 April 2014.

International Labour Organization (ILO) (2012). *Social Protection Floors Recommendation No. 202*. Adopted 14 Jun 2012 at the 101st Conference of the International Labour Organization, Geneva. Available from www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:3065524. Accessed 15 May 2014.

__________ (2013). *Employment Practices and Working Conditions in Thailand's Fishing Sector*. Geneva. Available from www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_220596.pdf. Accessed 17 April 2014.

OnemdaVicHealth Koori Health Unit (2013). *Project fact sheet, September*. Available from www.onemda.unimelb.edu.au/sites/default/files/docs/Birth%20registrations.pdf.

Powell, Nora P. (1980). Human rights and registration of vital events. Technical Paper No. 7. Bethesda, Maryland: International Institute for Vital Registration and Statistics. Available from www.cdc.gov/nchs/data/isp/007_Human_Rights_and_Registration_of_Vital_Events.pdf.

Plan International (2014). Birth Registration in Emergencies. Surrey, United Kingdom. Available from http://plan-international.org/files/global/publications/campaigns/birth-registration-in-emergencies.pdf.Accessed 5 June 2014.

Szreter, Simon (2006). The right of registration: development, identity registration and social security. *World Development*, vol. 15(1), pp. 67-86. Available from www.sciencedirect.com/science/article/pii/S0305750X06001811.Accessed 15 April 2014.

United Nations (2013). *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*. Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda.Available from www.un.org/en/development/desa/policy/untaskteam_undf/HLP%20P2015%20Report.pdf.

United Nations Children's Fund (UNICEF) (2005). *The "Rights" Start to Life: A Statistical Analysis of Birth Registration*. Available from www.unicef.org/protection/rights_to_life.pdf/.

__________ (2012). *The South African Child Support Grant Impact Assessment: Evidence from a Survey of Children, Adolescents and their Households*. Available from www.unicef.org/southafrica/SAF_resources_csg2012s.pdf.

__________ (2013). *Every Child's Birth Right: Inequities and Trends in Birth Registration*. Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report _low_res.pdf.

United Nations Development Programme (UNDP) (2012). *Accelerating Achievement of MDGs by Ways and Means of Economic and Social Right*. Bangkok. Available from www.snap-undp.org/elibrary/Publications/DG-2012-Accelerating-MDG-Economic-SocialRights.pdf.

United Nations High Commissioner for Refugees (UNHCR) (no date). Durable solutions. Available from www.unhcr.org/pages/49c3646cf8.html.

__________ (2010a). *Birth Registration: A Topic Proposed for an Executive Committee Conclusion on International Protection*, 9 February, EC/61/SC/CRP.5. Available from www.refworld.org/docid/4b97a3242.html.Accessed 18 May 2014.

__________ (2010b). *Small Changes – Big Gains: An Action Plan to Prevent and Reduce Statelessness in the Kyrgyz Republic*. Available from www.refworld.org/docid/51515ac22.html.

__________ (2011). Regional expert roundtable on good practices for the identification, prevention and reduction of statelessness and the protection of stateless persons in South East Asia. Paper presented for discussion on 28 and 29 October, Bangkok. Available from www.refworld.org/docid/4d6e09932.html.

__________ (2013a). *Conclusion on Civil Registration*. 17 October, No.111 (LXIV)-2013. Available from www.refworld.org/docid/525f8ba64.html.

__________ (2013b). *Concluding Statement of the Fourth High-Level Steering Meeting on the Prevention and Reduction of Statelessness in the Kyrgyz Republic*, 13 December. Available from www.refworld.org/docid/52e7c4914.html. Accessed 18 May 2014.

__________ (2014a). *Report on the Regional Workshop on Good Practices in Birth Registration*. 15th meeting of the ASEAN Intergovernmental Commission on Human Rights, 22-27 April.

__________ (2014b) *Global Trends 2013: War's Human Cost*. Available from www.refworld.org/docid/53a3df694.html.

United Nations High Commissioner for Refugees (UNHCR) and Plan International (2012). *Under the Radar and Under Protected: The Urgent Need to Address Stateless Children's Rights*. Available from www.refworld.org/pdfid/514acd3e2.pdf.

United Nations Office of the High Commissioner for Human Rights, United Nations Settlements Programme and World Health Organization (2003). *The Right to Water,* Factsheet No. 35. Available from www.ohchr.org/Documents/Publications/FactSheet35en.pdf.

World Health Organization (2012). *World Health Statistics 2012*. Geneva. Available from http://apps.who.int/iris/bitstream/10665/44844/1/9789241564441_eng.pdf?ua=1&ua=1. Accessed 16 June 2014.

Towards a Research Agenda for Civil Registration and Vital Statistics in the Asia-Pacific Region*†

Abstract

In this paper, first steps in developing a civil registration and vital statistics (CRVS) research agenda are described, and an initial framework is presented for guiding discussion of research priorities. The paper also provides guidance on future CRVS research, including a matrix to identify key research questions for the improvement of CRVS systems.

Based on the findings of the study, it is concluded that research is needed to (a) generate and disseminate evidence about which CRVS strategies work in different contexts and (b) ensure that the potential benefits of innovation are successfully scaled up and possible pitfalls averted. If the potential of research to improve CRVS is to be exploited optimally, the institutional, political and cross-sectoral nature of CRVS systems should be recognized and dealt with, while taking into account rapid advances in knowledge and technologies, shifting expectations and concerns of the public, and increasing needs and changing priorities of decision makers. In addition, research findings need to be compiled and made readily accessible to users for the purposes of policy, programming and practice.

By Carla Abouzahr, Mia Harbitz, Haishan Fu and Raj Gautam Mitra

Introduction

The first three papers in this series have drawn attention to the striking fact that the majority of countries in Asia and the Pacific do not have universal civil registration and millions of people live and die without leaving any formal trace of their existence. The failure to register vital events has serious implications for individuals in terms of their ability to provide documentary evidence of identity, age and family relationships,

---

[*] Carla Abouzahr, CEO CAZ Consulting; Mia Harbitz, Inter-American Development Bank; Haishan Fu, Director of the Development Data Group, World Bank; Raj Gautam Mitra, Chief of Demographic and Social Statistics Section, Statistics Division, United Nations Economic Commission for Africa.

[†] Due to the nature of this paper, and on an exceptional basis, the reference system used differs from that of the standard for the Journal. The endnote system was used rather than text notes to allow for the inclusion of multiple references, thereby shedding light on the research status of CRVS

making it more difficult for them to access government services and participate in political and economic activities. It also means that national authorities and decision makers do not have reliable, timely and complete information on the populations they are there to serve and so cannot formulate evidence-based and informed policy, allocate and distribute resources or effectively monitor social programmes.

In response, countries, development partners, technical experts and academics have come together as part of a growing movement to strengthen country civil registration and vital statistics (CRVS) systems. At the Asia-Pacific regional level, a broad partnership includes government representatives from the registration, statistical, health and other key sectors, along with United Nations agencies and development partners.[1] A similar inclusive mechanism has been established for the Africa region.[2] Such a broad-based coalition offers the basis for a holistic and inclusive approach to improving CRVS, which is essential for country ownership, effectiveness and sustainability.

Why a research agenda is needed

The success of the growing momentum for improving CRVS will depend on the ability of those driving the effort to bring together and use knowledge to guide policy and programme choices. During discussions on the Regional Strategic Plan for CRVS in 2012, as discussed in the first article in the present issue of the Journal, participants affirmed the importance of research and documentation of country experiences. If policymakers are to make the decisions needed to strengthen their CRVS systems, they will want to know whether they are investing resources wisely and well. They need to know what works in which kinds of settings and how lessons learned from other countries are relevant to their own circumstances. Research can help answer questions such as these. Research generates knowledge, enables practitioners to filter and make sense of available information, and supports the translation of knowledge into action. Research thus underpins all effective action.

A case is made in this paper that a strong research effort is essential to support sound policy and practice for CRVS. A broad view is taken of research, encompassing different research methods as well as compilations of experiences and lessons learned. Furthermore, it is argued that research is not only a matter of creating knowledge, but also about how evidence and knowledge are used to influence policy, programming and planning across multiple sectors. The growing demand for improved national statistical systems, as well as more effective use of resources, requires efficient coordination and collaboration at all levels, including for research. In this paper, it is claimed that the contents of a research agenda should be based on a review of existing knowledge, identification of information gaps that research could help address and the selection of the most relevant and appropriate research methods. In addition, a framework is proposed for stimulating action by the research community in response to the requests of ESCAP member States for evidence upon which to base their CRVS improvement efforts. While the call for a research agenda came from the Asia-Pacific region, many of the findings in this article are applicable on a global scale. Examples used in the article are taken from the Asia-Pacific region when available, but other literature has been included when appropriate.

The purpose of a research agenda is to identify the questions that merit particular attention from researchers and the research methods most relevant to the development of an evidence base for CRVS improvement in Asia and the Pacific and beyond. Research is needed that is at once locally relevant and also of broader regional and global utility. Research findings should inform current and future policy, planning and programme actions that will result in higher coverage and efficiency of CRVS. Research can help identify ways of overcoming barriers and bottlenecks and contribute to a shared resource bringing together implementation experiences and lessons learned on which those working to improve CRVS can draw. In the absence of a unifying framework for prioritization, there is the risk that research would remain haphazard and non-strategic, driven by the interests of specific groups, individuals, donors, or technologies and be out of touch with emerging priorities and the needs of countries and communities. A lack of strategic focus will hamper the effective translation of research results into policy and programming.

Defining a research agenda to respond to the needs of any policy community is challenging. The multi-year timeframes for research often are at odds with the policymakers' short-term needs for useful evidence; when the policy community asks for definitive conclusions, researchers may answer with inferences that are heavily qualified – specific to a particular time and place, limited by the need to employ assumptions about factors that cannot be directly observed. Such tensions are not easily resolved. Nonetheless, there is much to be gained from attempts to understand the central policy questions and audiences from the outset of a new initiative or programme.[3]

This paper describes first steps in developing a CRVS research agenda and presents an initial framework for discussion on research priorities. For a CRVS comprehensive research agenda supportive of policy and programming to come to fruition, research groups will need to be brought together and dialogue established with potential funders whose time and material resources will be needed. Furthermore, the public, civil society representatives and non-governmental organizations (NGOs) that have the grass-roots contacts and experiences needed to inform efforts to strengthen CRVS and to provide oversight of the use of CRVS for the public good will have to be consulted.

Methods

The development of the framework comprised three steps. First, a review of published literature and unpublished reports (or grey literature) covering research on various aspects of civil registration and associated vital statistics, excluding, therefore, research on vital statistics derived from other sources, such as censuses or population surveys. The second step consisted of a review of interim findings by the ESCAP working group for CRVS established by the ESCAP secretariat, as shown in the previously mentioned first paper of this issue of the Journal. The working group brings together representatives of development partners whose mandates include the improvement of civil registration and vital statistics in Asia and the Pacific. In the third step, a simple analytical framework or matrix was developed for categorizing evidence gaps and methodologies that can be used in determining research priorities.

One source of information – especially of "grey" literature – on research related to civil registration and vital statistics is the civil registration and vital statistics knowledge base maintained by the Statistics Division of the United Nations Secretariat.[4] The knowledge base brings together documents in a searchable database format, on civil registration and vital statistics guidelines, demographic methods and the development of civil registration and vital statistics in various countries. Some papers comprise analyses of the quality of birth or mortality and cause of death statistics derived from civil registration.[5-6] At the same time, an Internet search was conducted to determine the volume of material and topics addressed in publicly available research (broadly defined to include primary and secondary research and lessons learned as well as primary applied research) on CRVS. Key terms included various combinations of "vital registration", "birth registration", "death registration", "birth certificate", "death certificate"', "vital statistics", "legal identity", "social exclusion", "democracy", "development" and "research". As shown in figure 1, using the MEDLINE[‡] search engine it was found that there has been a significant increase in references to CRVS since 2000. Although the search identified many more references to vital statistics than to civil or vital registration, an interesting finding is that there has been a significant increase in the number of published articles on civil registration over the past decade.

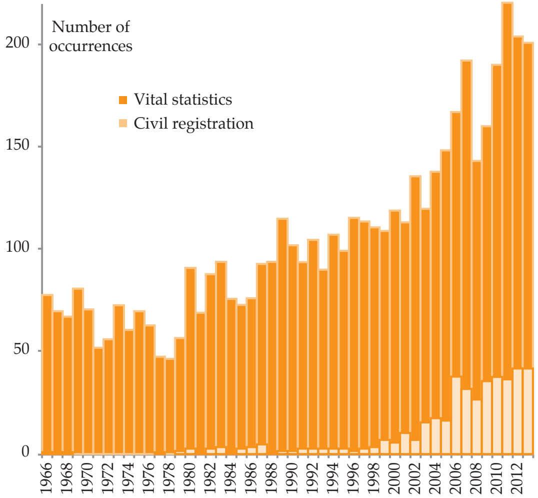
It is significant that the results of country activities to assess the functioning of their CRVS systems, many of which have been supported by ESCAP, the Secretariat of the Pacific Community (SPC) and other partners, are rarely available in the published literature. It is clear that

---

[‡] MEDLINE (Medical Literature Analysis and Retrieval System Online, or MEDLARS Online) is a bibliographic database of life sciences and biomedical information. It includes bibliographic information on articles from academic journals covering medicine, nursing, pharmacy, dentistry, veterinary medicine and health care.

more effective ways of sharing country experiences and lessons learned are required to enable country decision makers to benefit from mutual learning and exchange.

Figure 1. Occurrences of civil registration and vital statistics terms in MEDLINE search, 1966-2013[§]



Source: MEDLINE database.Available from www.nlm.nih.gov/bsd/pmresources.html.

Findings

The findings of the review are summarized in line with the outcomes to which research should contribute, as described in the ESCAP Regional Strategic Plan.[7]

Public awareness

Public awareness of the need for and benefits of registration is a prerequisite for the successful functioning of the registration system. Barriers that impede registration include supply-side constraints, such as distance from registration facilities, cost of registration (direct and indirect as well as opportunity costs), as well as demand-side issues, such as social and cultural barriers related to poverty, ethnicity and social class. Efforts to address the supply side usually involve increasing the availability of registration points, especially in remote and underserved populations. In Latin America, the Inter-American Development Bank (IADB) has financed major efforts to strengthen the institutional capacity

---

[§] The assistance of Aliya Karim of the Swiss Tropical and Public Health Institute in carrying out the bibliometric analysis is gratefully acknowledged.

of the registration agencies. Addressing demand-side issues is usually more complex, requiring multiple interventions. IADB, the United Nations Children's Fund (UNICEF) and Plan International have drawn attention to the particular economic, social and cultural barriers that impede birth registration among indigenous populations in several Latin American countries. A systematic analysis was undertaken to come up with lessons learned and the best practices that can be adapted and adopted more widely.[8] The authors found no evidence in the published literature of similar research in the Asia-Pacific region.

Plan International and UNICEF have worked to increase awareness and stimulate demand for certificates by involving civil society in its campaigns for universal birth registration, acting as a catalyst for birth registration and promoting birth registration at the grass-roots level.[9,10] As far as can be seen from the published literature, there have been no formal evaluations of such efforts, although the case studies themselves are of value. Plan International has compiled case studies in countries in which it has been involved in advocacy and action to strengthen birth registration, and which it had described as examples of best practices.[11,12] More recently, evaluations of birth registration campaigns have started to appear in the published literature.[13] However, evidence of the comparative effectiveness of mass campaigns compared with grass-roots level interpersonal communication techniques is still lacking.

Researchers and institutions have drawn attention to the importance of involving communities in the registration process.[14] The Society for Participatory Research in Asia (PRIA), a civil society NGO based in New Delhi, has conducted community-based research to identify and bring to the attention of decisionmakers the practical issues and concerns faced by people in birth and death registration. Problems encountered were not limited to lack of access and shortages of staff and forms, but also bureaucratic obfuscation and inertia, hidden costs and corruption. [15]

There is not a great deal of evidence with regard to the most effective combinations of incentives for birth and death registration and penalties for failure to do so. United Nations guidance on the matter refers to the need for penalties for non-compliance with registration law or late registration,[16] but the possible unintended negative effects of such penalties are presented mostly as anecdotes. In Latin America, there has been a move away from legal processes to administrative processes for late registration of births, as well as a reduction in the penalties in the light of evidence that the existing procedures were an impediment to the completeness of the registries. However, there is need for additional research on the potential of different kinds of incentives – monetary or other – to significantly improve the completeness of birth and death registration. Increased birth registration has been documented through the use of conditional cash transfers, [17] but more evidence is needed as to the long-term sustainability of such approaches and their potential for extension to the registration of other vital events, notably deaths.

Despite the considerable investments in increasing public awareness, few studies have examined the issue of public distrust of civil registration or vital statistics systems. The exceptions are a few, often historical, studies that address the potential negative impact of civil registration, such as its use for the identification – and subsequent persecution – of religious or ethnic minorities.[18,19,20] Public concerns in relation to the use of information from the registration system need to be addressed as part of efforts to enhance public awareness and cooperation.

Political commitment

Advocacy is also important to generate political commitment and persuade Governments to make CRVS a priority and allocate resources for establishing and improving CRVS systems. The published literature does not include formal evaluation of efforts to generate political commitment but there are good examples of lessons learned from countries in the Asia-Pacific region, including Bangladesh,[21] Fiji,[22] the Philippines[23] and Sri Lanka.[24] Findings from these country experiences include the critical importance of national leadership among government officials in health, statistics and registration or home affairs; the role of academic researchers in providing a strong evidence base for action; the importance of reaching out to community leaders and grass-roots organizations; and the need to work with parliamentarians and legislators to apply an equity lens to the development of policy and legislation. In Bangladesh, high-level political commitment at the level of the Prime Minister's office and the Cabinet was stimulated by the confluence of four key factors:

- National determination to become a middle income country by 2021 and the perception that improved CRVS and a linked population register would contribute to this;

- The positioning of CRVS within the whole-of-government commitment to "Digital Bangladesh" and the rapidly increasing availability and distribution of ICT;

- The existence of a national ID system;

- The availability of field level workers, especially in health, to enter data from digital devices directly from the field.

More policy research is needed on how to seize political moments when conditions align favourably for an issue, presenting opportunities for advocates to influence decisionmakers.

Investments

A gap in the research literature is the absence of research studies on the costs and benefits of CRVS.[25,26] Such information is needed to make the investment case to Governments and donors. Even studies that include detailed descriptions of the functioning of country systems often neglect to mention anything about costs.[27,28] Apart from descriptive analyses of the benefits of civil registration, for example compared with the costs of other sources of vital statistics, there are no examples in the published literature of quantitative cost-benefit analyses of CRVS. Without such analyses it is difficult to make the investment case to Governments which must bear the costs of civil registration systems.

A step forward in this area has been the formulation of a systematic framework to guide investment decisions by donors and Governments on methods of data collection for vital statistics or health information in general.[29] However, the framework now needs to be populated with information on costs from countries. Researchers need to step up to fill this gap and engage country stakeholders in generating the data needed to develop investment cases for vital statistics. With support from the Government of Canada and the World Health Organization, several countries are currently describing their efforts to improve their CRVS systems, including the development of investment cases to support the mobilization of resources. These case studies offer valuable insights from which others can draw.[30]

Policies, legislation and implementation of regulations

In practice, it can be challenging to bring about legal change; fundamental revisions of existing law tend to occur only when countries are engaged in a deep-rooted process of social transformation, as was the case in South Africa when apartheid ended.[31] There are few published examples describing the processes and outcomes of efforts to improve civil registration legislation in countries, but with the increasing recognition that the legal frameworks have to be updated and/or upgraded, this is an area that will require more resources and attention in the short and medium term.

Weaknesses in civil registration law have wide-ranging policy effects. Studies on the social and economic impacts of dysfunctional or inadequate CRVS systems have examined the links between identity, citizenship and justice, and democratic governance.[32,33,34,35,36,37] Research into poverty and economic, cultural and social exclusion in Bolivia, Ecuador and Guatemala found that not having a national identity document had major economic and financial implications and was a determining factor in the cycle of poverty.[38,39] Some studies have described the changing fortunes of CRVS systems associated with political regimes.[40] One paper specifically addressed the question of how better statistics can contribute to advancing human rights.[41]

One study examined the causal impact of the lack of birth registration on schooling outcomes in the Dominican Republic. The research found that, controlling for potential endogeneity and standard socioeconomic determinants of education, children without birth registration documents did not face lower chances of entering the schooling system; however, the absence of birth registration was a critical obstacle to graduating from primary school and translated into fewer years of overall educational attainment.[42]

A study in Brazil found that, due to the economic and social policies of the 1970s and 1980s, broad segments of the population were socially excluded and saw little immediate reason to surmount the many obstacles to obtaining legal documents. However, since the 1990s and in the 2000s, policies that direct benefits to low income individuals in the informal sector have both exposed the number of undocumented people in the population and provided a strong incentive for them to acquire identity documents. In turn, the State has had to respond by making registration more accessible, especially for remote and marginalized populations.[43] One study examined how a relatively good system of birth registration in the Democratic Republic of the Congo could be used to ensure the effectiveness of cash transfers, including universal and targeted child allowances, old age pensions and disability benefits.[44]

Legal documentation

Together with the macro-level, societal benefits, functioning civil registration systems are associated with multiple benefits at the individual level if essential safeguards are maintained as described above. There is a substantial body of research on the role of civil registration in enabling the realization of human rights.[45] Many papers are focused on the way in which legal documentation facilitates access to health services, education, employment and social protection. For example, it was concluded in a legal study in Indonesia that legalizing marriage and divorce and the provision of birth certificates (requiring a legal marriage certificate) are particularly important for female heads of household and the families they support in terms of accessing broader public services, such as education and health.[46] An innovative research effort involves studying the potential of CRVS as a tool for decreasing structural violence and promoting social inclusion.[47] Some studies have identified the importance of civil registration in order to be able to access services in cases of conflict or disasters. Surviving women and children face particular challenges in proving their identity when legal identity is largely processed through male family members.[48]

Research commissioned by Plan International identified discriminatory laws that prevent a woman from registering her child alone or from conferring her nationality to her son or daughter.[49] Research found that discrimination against women was a major barrier to birth registration in several countries, including Brazil, the Dominican Republic, Ecuador, India, the Lao People's Democratic Republic, Nepal, Pakistan and Sudan. In some cases this is because the law states that, if a birth takes place at home, the primary responsibility for the registration of a child lies with the head of the household. In most cases this will be the husband or, for a single woman, her father or another male relative: women not recognized as household heads may have difficulties in registering their own child.[50] Further research is needed on the impact of gender-based discrimination in perpetuating the cycle of exclusion.

The primary legal document is the issuance of a birth certificate that establishes the identity of an individual by recording biographical data. An increasing number of initiatives are now adding attributes, such as unique identification numbers and biometrics, to determine the unique, secure legal identity of the individual for use in identification cards and machine-readable passports.[51] Lessons learned from these experiences in countries need to be brought together to create a repository of good practices in modernizing civil registries and ensuring links with civil identification in order to ensure trustworthy and certifiable legal documentation.

Statistics on vital events

The largest volume of research has been on the ability of the registration system to generate statistics on vital events. A significant proportion of published studies consists of a critical evaluation of the completeness and quality of vital statistics – most commonly on mortality and cause of death – derived from civil registration.[52,53,54,55,56,57,58,59,60,61,62,63,64,65,66,67,68,69]

Other studies consist of secondary analyses of vital statistics (sometimes with statistical modelling) in order to identify disparities in life expectancies and mortality rates across small areas and ethnicities.[70] Recent research relates to the development of methods – algorithms or automated methods – for improving the availability and quality of cause of death statistics derived from civil registration.[71,72,73,74] There are several examples of research on the development and evaluation of methods of ascertaining cause of death in settings where medical certification is not available.[75,76] Further implementation research is needed on how these new methods could be integrated into routine civil registration systems. One study suggested that informal traditional systems for the reporting of vital events at the village level could offer an interim solution for accelerating the production and use of district-level vital statistics for legal, administrative and statistical purposes while waiting for more comprehensive national systems to become a reality.[77]

Statistics on registration coverage can also be derived by including questions on birth registration in household surveys, such as the Demographic and Health Surveys sponsored by the United States

Agency for International Development and the Multiple Indicator Cluster Surveys sponsored by the United Nations Children's Fund.[78] This type of approach is of particular value in settings where, although births and other vital events are registered by the civil registration authorities, the individual information is not compiled into aggregate statistics nor disseminated.

Population registers are a logical extension of civil registration and include data on place of residence, migration and other characteristics. In response to the growing interest in establishing population registers in low- and lower-middle income countries, research and documentation are needed on how to do so effectively and the associated costs, benefits and risks, in particular with regard to privacy and confidentiality.

Coordination among key stakeholders

A prerequisite for a sound, efficient and effective vital statistics system is that there be close collaboration among all the agencies involved, including the civil registration office, the national statistical office, the health ministry, doctors, birth attendants and local government officials. In practice, given the legal and institutional frameworks, each entity tends to function independently and there is often duplication of efforts coupled with gaps in key areas. There have been some recent efforts to address the issue of cross-sectorial links needed to ensure the effective functioning of CRVS, for example to integrate birth registration into the health sector at the local level.[79,80,81,82] Several demonstration projects are underway consisting of combinations of legislative change, training and improvement of statistical analysis.[83] No results are yet available however on the effectiveness, scalability and sustainability of such interventions.

Use of vital statistics

Vital statistics are not ends in themselves but are intended to support national and local decision-making across a range of social and economic sectors to facilitate the formulation of evidence-based policy. The contribution of vital statistics to evidence-based decision-making is dependent upon timely dissemination to and appropriate uptake by the relevant decisionmakers. However, there is a surprising shortage of published literature on the effective use of vital statistics from the civil registration system to support policy and programme decision-making. A valuable exception to this rule is from Cape Town, South Africa, where the detailed analysis of data from the registration system was used to identify the leading causes of premature death and the subpopulations suffering the highest levels of premature mortality. User-friendly summaries of the findings and widespread dissemination to local communities and decisionmakers led to changes in health planning and policymaking, particularly for poor urban communities.[84] In countries such as the United States of America, with well-established CRVS systems, vital statistics generated at the local level have proven to be of great value to policymakers for identifying regional inequities in health status.[85] In Australia, vital statistics data are used to identify local areas of population growth or decline and have a direct impact on government resource allocation.[86]

Researchers have made good use of vital statistics, for example in producing estimates of the global burden of disease[87] and of cause-specific mortality.[88] A striking proportion of the published research has focused on cohort studies on various aspects of health and mortality using data derived from the Danish population registration system, which links information from the civil registration system with other administrative databases, such as place of residence, so that up-to-date information on the whole population is readily available.[89] This has permitted researchers to undertake analyses of twinning rates,[90] impact of smoking on foetal and neonatal survival,[91] socioeconomic determinants of adult mortality[92] and risk factors for suicide in young people.[93] Detailed population-based information of this kind furnishes benefits beyond the health sector; it also results in better planning and governance across all sectors.

Innovation for CRVS

There is great interest in the potential of new information technologies (IT), including hand-held electronic devices, to facilitate the notification of vital events, speed up the process of delivery of certificates to individuals and improve the availability and quality of vital statistics.[94,95,96,97,98,99]

A significant research effort was initiated in 2010 by the Health Metrics Network, a partnership hosted by the World Health Organization.[100] In Kenya, the MOVEIT (Monitoring of Vital Events using Information Technology) project is examining the feasibility of using mobile phone technology (short message service or SMS) by community health workers to send notifications of vital events to an automated system, which would then trigger notifications to the registration officials who would then follow up to register the births or deaths on electronic birth/death notification forms.[101] A project in Rwanda also involves low-end phones and RapidSMS technology to transmit information on births and deaths by SMS.[102] An important early lesson learned is that legal processes need to be established whereby SMS can be treated as a formal notification, something that is not currently in place.

In Bangladesh, the MOVEIT project is aimed at registering all pregnant mothers and their children in a unified electronic information system.[103] An early decision was made to build upon the nascent unified identification system of the Prime Minister's Office that will become the de facto standard for all national identification documents (ID). This involves two existing IDs: the national ID (NID) that is managed by the Election Commission and the birth registration number (BRN) that is managed by the local government departments concerned. As previously noted, this is an illuminating example of the power of high-level political commitment.

The MOVEIT project in Ghana is focused on the use of community volunteers in order to (a) produce real time, continuous data on births and deaths (by age and sex) in a limited number of districts in northern Ghana; (b) generate evidence about the feasibility of reinforcing vital registration in rural communities using existing volunteer structures and appropriate innovative technologies in data transfer and dissemination of results to expand coverage of vital registration; and (c) estimate the cost of scale-up and sustained implementation of reporting of vital events by community volunteers.[104]

The Philippines MOVEIT project brings together two existing monitoring tools: the Barangay Civil Registration System (BCRS) and the Watching Over Mothers and Babies, an ongoing project of the Department of Health to enable registration and processing of maternal and child vital events, and for the generation and utilization of vital statistics at the local level.[105] BCRS supports the civil registration process by bringing it closer to the communities, trying thus to transcend physical, economical and geographical barriers experienced by the population.

Other studies have focused on using IT to improve the recording and ascertainment of causes of death. In Mozambique, the project is focused on hospitals and consists of training on the coding of International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10) and classification of causes of death for the clinical staff and users of the system.[106,107] The Indonesia project was designed around the development and implementation of software solutions for data entry, management and processing of vital registration data – mainly mortality data.[108]

A review of the MOVEIT projects concluded that strong programme logic should drive the system by strengthening efforts rather than simply the availability of a new technology.[109] In recent research on 58 studies on so-called eCRVS or mCRVS[**] interventions, it was concluded that a rigorous evaluation component was often absent from the projects, rendering them of limited usefulness.[110] Many projects were implemented on a small scale at the local level and issues of scalability were rarely addressed. Moreover, they generally related only to one aspect of the CRVS system, such as using mobile phones for notification of births (or, less commonly, deaths). Whereas several interventions were

---

[**] These terms refer to "electronic computer technologies for CRVS" and "mobile phone technologies for CRVS", respectively.

focused on using mobile phones to increase the notification of births or deaths, very few investigated how such notification could be used to increase the issuance of certificates by the registration authorities. One study that addressed this issue found that the SMS intervention resulted in significant improvements in the notification step and modest improvements in the registration step but that both notifications and registrations still fell short of the vital events identified in the local demographic surveillance system.[111]

The application of ICT to achieve improvements across all components of CRVS – from notification and registration of vital events to the issuance of certificates, the compilation and dissemination of vital statistics and archiving of civil registration records – has not been systematically addressed through research. This research gap is particularly striking given the burgeoning interest in using digital biometric identification technology, such as fingerprints or iris scans, in order to help "leapfrog" traditional paper-based identity systems based on civil registration.[112] There are many examples of the use of such systems but limited evidence of research on how they should or can be integrated into existing civil registration or vital statistics infrastructure. Very often, the private sector and IT companies play a significant role and there is a lack of understanding about the need to link identity management to civil registration, which provides the first "breeder" document for subsequent identity management.

Research is also needed on the extent to which these systems are indeed effective in widening inclusion rather than further excluding the poor and vulnerable.[113] Moreover, the driver for many of these initiatives is a desire to limit benefit fraud and ensure that welfare programmes are accurately targeted, and concerns have been raised regarding the confidentiality of personal data and on the potential for increased surveillance and erosion of privacy.[114] Although many biometrics projects in developing countries are implemented through the health sector, they mostly relate to verification of insurance coverage or benefits, maintaining electronic health records and linking data and records.[115] Research and case studies are needed on ways of linking these fragmented efforts into broader initiatives to improve the broader CRVS systems, enabling the targeting of health programmes and the generation of data on health and mortality through birth and death registration.

United Nations standards draw attention to the ethical dimensions and data security needs of civil registration.[116] However, few contemporary studies have addressed such issues as how to strike a balance between the importance of good information about marginalized subpopulations and the risks of collecting information about religion or ethnicity. The increased use of electronic systems for collating and compiling individual data has highlighted the need to assure public and democratic oversight and confidentiality while simultaneously permitting the aggregation of data for the purposes of statistical analysis of social conditions and population health. There is an urgent need to update and harmonize legislation that governs both civil registration and the management of vital statistics. Few developing countries have provisions for electronic transfer, storage of personal information, nor the proper systems for validation and verification.

Cross-cutting research on CRVS

While most research projects are narrowly delineated in terms of the interventions, some research efforts have addressed CRVS improvement in a more systemic way. System-wide efforts to improve CRVS in ways that cut across these distinct outcomes have been published with reference to Albania,[117,118] Brazil,[119] Fiji,[120] South Africa,[121] and Sri Lanka.[122] A major finding is that, even in settings where such activities have been carried out, they have not been well documented, with the result that the experiences are not available to others treading a similar path. Several studies describe critical evaluations of the functioning of country CRVS.[123,124,125,126,127,128] However, there is a high degree of fragmentation of research along agency and institutional lines. For example, in one country, research has been conducted or is underway on governance aspects of CRVS, on using community volunteers for CRVS,[129] on linking civil registration, verbal autopsy and electronic medical records,[130] on campaigns for birth registration, and on innovation and mobile technologies for CRVS. Such findings make the search for a coherent research agenda for CRVS all the more urgent.

Proposed strategic framework to guide the CRVS research agenda

Research categories

The present paper makes the case that there is a continuing need for research on how to strengthen CRVS systems in countries. However, there are a number of different kinds of research, not all of which are equally relevant to the needs of CRVS. Research can be categorized using three primary characteristics: the focus of the research, the users of the research outputs and the utility of the research outputs.[131] This categorization results in a fourfold classification of types of applied research: operational, implementation, systems-wide and policy research, as described below:

Operational research is primarily, though not exclusively, concerned with operational issues of concern to national and local levels of action, such as at a local registration office or in a local health facility where birth and deaths occur, but also how the system is interoperable on a national level. The findings of operational research studies are predominantly of use to those working on aspects of civil registration and vital statistics at local and national levels. Because operational research generally addresses practical problems, taking into account the particular context in which they occur, the research utility of the outputs would not be readily applicable to other settings without careful and considerable adaptation. Even though the core elements of CRVS systems are common across settings, the practical implementation mechanisms will differ depending on local circumstances. Thus, incentives for registration that work well in one setting will not necessarily be effective elsewhere.

Implementation research is predominantly of use to higher-level managers of civil registration and vital statistics, especially when considering how to rollout a large-scale improvement effort. While contextual factors remain important, the utility of findings from implementation research can often be generalized to other settings within the country or even for other countries. Particular challenges in the ability to generalize the results lie in the variability in data availability and quality in different settings.

Systems-wide research is aimed at remedying failings in CRVS systems as a whole and is of most use to those who manage or need to design policies, programmes and business processes for CRVS. While all systems-wide research is context-specific, careful consideration of study design and reporting of context-specific factors generally improves the application of this type of research to other settings. Systems-wide research requires a high degree of cross-sectoral collaboration and use of interdisciplinary methods. Because it involves complex interventions in real-life settings, it tends to generate evidence of plausibility rather than of cause and effect.

Policy research is designed to increase understanding and improve how institutions and societies organize themselves in achieving collective goals, and how different actors interact in the policy and implementation processes to contribute to policy outcomes. By nature, it is interdisciplinary, a blend of economics, sociology, anthropology, political science, public health and epidemiology, and takes social norms and practices into account. It encompasses research on and is concerned with how policies are developed. Policy research has utility beyond the specific location in which it is conducted and can be used to influence national, regional and global-level advocacy and policymaking.

Strategic matrix

To guide the development of a CRVS research agenda, a strategic matrix is proposed that brings together desired outcomes of research in terms of improved knowledge to guide country and regional action and types of research questions (annex). This can be used to identify gaps in types and topics of research and to rebalance the types of research and respond to the needs of practitioners who implement the national plans.

The way forward

This review is only the first step in the development of a research agenda. Next steps include the following:

(a) Solicit inputs from other global and regional partners, notably the United Nations system agencies, multilateral development banks and NGOs working in civil registration;

(b) Reach out to academic institutions and think tanks as potential partners in identifying research gaps and conducting the needed research. Develop partnerships with researchers working in demographic and health surveillance sites to promote closer links between research-based surveillance and routine civil registration and vital statistics systems;[132]

(c) Consider approaching a range of journals across the development spectrum – statistics, governance, development, planning, health, human rights – to solicit possible interest in CRVS studies, either on an individual basis or as part of a series on CRVS;

(d) Approach the organizers of upcoming major academic conferences and propose special sessions, calls for papers and posters on CRVS. Possibilities include meetings of the International Union for the Scientific Study of Populations,[133] World Statistics Congress of the International Statistical Institute,[134] International Epidemiological Association[135] and Population Association of America;[136]

(e) Approach donors and development partners potentially able and interested in funding research and in supporting the development of global and regional repositories of research findings that can be accessed by CRVS practitioners.

Conclusions

Research can make a critical contribution to the gathering momentum for action to strengthen CRVS. For the research to be applicable and contribute to strengthening CRVS systems, it is imperative to recognize and deal with the institutional, political and cross-sectoral nature of civil registration and vital statistics systems, while taking into account rapid advances in knowledge and technologies, shifting expectations and concerns of the public and the increasing needs and changing priorities of decisionmakers. If the potential of research to improve CRVS is to be exploited optimally, it will be important to create synergies and complementarities across national, regional and global research efforts and support the kind of research that is most relevant and needed.

A considerable body of research and experience in relation to CRVS is available. While a lot of this information is based on descriptive research and analysis, it nonetheless offers a foundation upon which to build improvement efforts. Moreover, globally, there is an accumulating body of knowledge on strengthening weak or dysfunctional CRVS that needs to be widely shared so that countries can learn from the experience of others. To date, much of this knowledge is derived from experience rather than from formal evaluation or systems-wide research. Furthermore, the contribution of countries and researchers in the Asia-Pacific region to the published literature on CRVS is limited.

Many operational and implementation research studies have been confined to narrowly defined components of CRVS – for example improving medical certification of cause of death and introducing mobile phones for notification of vital events – few of which have addressed the challenge of scaling-up. On the other hand, there are lessons to be learned from innovative approaches to strengthening CRVS in challenging circumstances, such as in refugee and displaced populations, and in remote and marginalized populations.

An important gap is research on how to influence the many actors in policy and implementation processes and how to position CRVS as part of national policy. Policy research on the overarching value of CRVS remains rare, and there is a need to establish an econometric research agenda to support policy and financial decisionmakers.

A large proportion of the available evidence on improving CRVS is fragmented along sectorial lines with the result that within any single country, research projects on aspects of CRVS may be happening in different sectors but are not brought together to harness potential synergies. Bringing all this together in a systematic way would provide important evidence on which other countries could draw.

The paucity of published research on key barriers to functioning CRVS needs to be addressed through applied research. For example, although community involvement in and trust of civil registration is widely acknowledged to be critically important, behavioural research and lessons learned on how to do so is limited. Little research has been published about what kinds of incentives work and do not work for improving birth and death registration. There is also a lack of published research on the costs and benefits of establishing universal civil registration and complete vital statistics, although recently more work is being carried out in this regard.

The growing interest in the potential of information technologies and biometrics to rapidly scale up and accelerate the registration of vital events and assure legal identity presents important opportunities for strengthening CRVS but also a number of risks. Research is needed on how to maximise the benefits of these technologies while ensuring that the core principles of civil registration and vital statistics systems – universality, continuity, completeness, confidentiality and dissemination – are respected.

The lessons learned from operational, implementation and policy research – both successes and failures – need to be documented and shared. The potential for South-South and peer-to-peer sharing of experiences has not yet been adequately harnessed for CRVS. Research on CRVS needs to be compiled and made readily accessible to users for the purposes of policy, programming and practice. This implies the development of a knowledge translation facility to ensure that the findings of research and lessons learned from countries are brought together and analysed for the benefit of those working to build CRVS at the country level.

In the final analysis, research alone will be insufficient to move the CRVS agenda in countries. Alongside research, it is essential to bring together and document country lessons about what worked and to bring decision makers and stakeholders together to learn from such experiences as they move forward to improve CRVS in their own settings.

Annex

Matrix for identifying research questions: an illustrative approach

	Type of research			
Outcomes	**Operational research** (of local relevance in specific settings)	**Implementation research** (relevant for scaling up promising interventions)	**Systems-wide research** (systemic research with relevance to other settings)	**Policy research** (how policies are developed and implemented)
Enhanced public awareness of the value of civil registration and vital statistics (CRVS).	Cost effectiveness and security of use of ICT and mobile devices in remote areas.	Scale-up of information, education and communication campaign on awareness of and compliance with civil registration, especially among marginalized groups.	Lessons learned from interventions to improve community involvement in CRVS.	Potential of improved registration of vital event among poor, remote and marginalized groups to reduce inequities and enable better targeting of programmes.
Actions taken to remove barriers to registration at all levels.	Definition of incentives vs. effects of penalties for failure to comply with registration of vital events.			
Actions taken to ensure public and democratic oversight of CRVS systems.	Use of vital statistics as decision-making tools at the local level (in communities and municipalities).	Implementation of strategies to involve civil society organizations in promoting civil registration.		Role and responsibilities of government and civil society in ensuring confidentiality and appropriate use of CRVS information.

		Development of consensus on public oversight mechanisms. Involvement of the health sector in supporting registration of vital events, for example through facility reporting, community health workers, immunization services.		
Political commitment to support improvement of CRVS.	Use of local media to raise awareness of CRVS barriers and benefits.	Enhancing awareness of policymakers and parliamentarians concerning value of CRVS. Assessment of different ways of reaching out to community and most effective advocacy techniques.	Impact of national CRVS assessments and action plans on political commitment. Evaluation of role of municipal leaders in improving CRVS systems.	Identification of drivers for policymaking and how can these be leveraged for CRVS.

Sustainable investments for CRVS.	Evaluation of benefits and risks with regard to fees for services to help finance local registration services. Linkages with social programmes and administrative registries.	Strategies for generating CRVS resources at the local level.	Use of business processes to demonstrate cost-effectiveness and stimulate allocation of national resources to CRVS.	Costs and benefits of CRVS for national development and returns on investment.
Improved policies, legislation and implementation of regulations for CRVS systems.	Assessment of strategies for drafting and promoting new legislation.	Evaluation of local and national government initiatives to strengthen CRVS.	Changes in CRVS legal and administrative structures to improve completeness and quality. Constraints and benefits of closer linkages between civil registration and civil identification systems.	Effective ways of communicating CRVS challenges and solutions to policymakers.

Improved availability and quality of legal documentation.	Targeted training of local registrars to improve the timeliness, completeness and overall quality of registration.	Evaluation of interventions to improve the capacity of the registration system to issue verifiable legal identity documents. Cost-effective approaches for assuring confidentiality and security of civil registration records.	Strategies for improving behaviours and practices of CRVS system actors. Evaluation of improved legal documentation on access to services and economic activities.	Role of improved registration documentation in promoting human rights. Impact of quality legal documentation from civil registration on overcoming inequities.

Increased country capacity to record, compile, analyze and disseminate complete and reliable vital statistics.	Evaluation of training to improve vital events recording, reporting compilation, archiving and analysis. Effectiveness of training to improve the quality of cause-of-death certification by medical professionals.	Evaluation of strategies to involve hospitals, health centres, religious institutions and schools in vital events registration. Impact of electronic registration of vital events on data compilation and transfer. Feasibility of introducing verbal autopsy to determine cause of death in settings without qualified medical personnel. Evaluation of automated coding for improving quality of data on cause of death.	Lessons learned on the potential of automated methods for improving coding on cause of death.	Role of health professionals and educational institutions in improving the quality of cause of death certification and coding.

Effective coordination mechanisms among key CRVS stakeholders.	Overcoming barriers to effective coordination between health and civil registration authorities.	Evaluation of the impact of establishing local level CRVS coordination committees. Lessons learned from country experiences in integrating CRVS into national strategies for the development of statistics, social development strategies and sectoral plans.	Impact of multisectoral CRVS committee on CRVS coverage, completeness and quality.	Lessons learned on challenges of establishing effective CRVS coordination mechanisms. Lessons learned on the benefits of functional CRVS in disaster risk reduction and in the provision of government services following emergencies.
Increased capacity of countries to effectively use vital statistics.	Innovative methods for encouraging the use of vital statistics for local level/municipal decision-making.	Strategies for capacity development in the analysis and use of vital statistics.	Impact of improved vital statistics on national decision-making processes.	Role of improved CRVS in implementing and monitoring social protection and access to universal health care. Use of improved cause of death data to guide health policy and resource allocation.

References

[1] C. Abouzahr and others, “A development imperative: civil registration and vital statistics systems in the Asia-Pacific region”, *Asia-Pacific Population Journal*, vol. 29, No. 1 (United Nations publication, Sales No. E.14.II.F.99).

[2] *Africa Programme on Accelerated Improvement of Civil Registration and Vital Statistics*, Second Conference of African Ministers Responsible for Civil Registration Durban, South Africa, September 2012. Accessed 15 September 2013 from www.uneca.org/crmc2.

[3] Population and Development Working Group of the Center for Global Development. *Population Dynamics and Economic Development: Elements of a Research Agenda Population Dynamics and Economic Development – Elements of a Research Agenda Final Working Group Report 28 July 2005*. Available from http://poppov.org/Portals/1/documents/CGDworkingGroupReportJuly2005English.pdf.

[4] United Nations Department of Economic and Social Affairs, Statistics Division. Civil Registration and Vital Statistics Knowledge Base. Accessed 8 July 2013 at http://unstats.un.org/unsd/demographic/CRVS/default.htm.

[5] Li Shuzhuo, “Birth registration in China: practices, problems and policies”, Institute for Population and Development Studies, School of Public Policy and Administration, Xi’an Jiaotong University, Xi’an, Shaanxi Province, China.

[6] V. Tangcharoensathien and others, “A critical assessment of mortality statistics in Thailand: potential for improvements”, *Bulletin of the World Health Organization*, vol. 84, No. 3, pp. 233–238. Accessed 22 August 2012 from www.who.int/bulletin/volumes/84/3/233.pdf.

[7] ESCAP, “Regional Strategic Plan for the Improvement of Civil Registration and Vital Statistics in Asia and the Pacific”. Available from www.unescap.org/stat/crvs/high-level/Regional-Strategic-Plan-031212.pdf.

[8] UNICEF and Plan International, “ Sistematización de las experiencias sobre derecho a la identidad y registro de nacimiento de niños y niñas indígenas en Bolivia, Ecuador, Guatemala y Panamá” (ISBN: 978-92-806-4465-4, 2009).

[9] C. Cody, “Count every child: the right to birth registration”(Woking, United Kingdom, Plan Ltd., 2009). Accessed 22 August 2012 from: http://plan-international.org/birthregistration/files/count-every-child-2009.

[10] United Nations Children’s Fund, A Passport to Protection: *A Guide to Birth Registration Programming* (New York, 2013).

[11] http://plan-international.org/birthregistration/resources/country-case-studies/

[12] Plan International, "Count every child: birth registration in India".

[13] S. Fagernäs and J. Odame, "Birth registration and access to health care: an assessment of Ghana's campaign success", *Bulletin of the World Health Organization*, vol. 91, pp. 459-464). Available from http://dx.doi.org/10.2471/BLT.12.111351.

[14] R. Jewkes and K. Wood, "Competing discourses of vital registration and personhood: perspectives from rural South Africa", Social Science and Medicine, vol. 46, No. 8, pp.1043–1056. Abstract accessed 22 August 2012 from www.ncbi.nlm.nih.gov/pubmed/9579756.

[15] K.K. Bandyopadhyay, S. Grover and N.Ghose, *Promoting Birth Registration with Municipal Engagement*, Occasional Papers Series No. 1. Urban Governance (New Delhi, 2007). Society for Participatory Research in Asia. Accessed 22 August 2012 from www.pria.org/docs/resources_pdf/paper_1.pdf.

[16] United Nations Department of Economic and Social Affairs, United Nations Principles and Recommendations for a Vital Statistics System Revision 3, Draft (New York, April 2013) Available from http://unstats.un.org/unsd/Demographic/standmeth/principles/M19Rev3en.pdf.

[17] L. Robertson and others, "Effects of unconditional and conditional cash transfers on child health and development in Zimbabwe: a cluster-randomised trial", Lancet, vol. 381, No. 9874, pp. 1283-1292.

[18] K. Breckenridge and S. Szreter (eds.), *Registration and Recognition: Documenting the Person in World History* (Oxford, Oxford University Press/British Academy, 2012).

[19] B. Moore, *Victims and Survivors: The Nazi Persecution of the Jews in the Netherlands 1940–1945* (London, Arnold, 1997).

[20] T. Longman, "Identity cards, ethnic self-perception and genocide in Rwanda", in J. Caplan and J. Torpey, eds., *Documenting Individual Identity*. The Development of State Practices in the Modern World (Princeton, New Jersey, Princeton University Press, 2001), pp. 345–357.

[21] "Investing in the potential of Bangladesh's Civil Registration and Vital Statistics System", draft investment plan presented at the Civil Registration and Vital Statistics Investment Planning Technical Consultation, Addis Ababa, 28-29 April 2014. Available at: http://www.who.int/healthinfo/civil_registration/TechnicalConsultation_April2014/en/. Accessed 30 October 2014.

[22] S. Naidu, M. Buttsworth and A. Aumua,"Strengthening civil registration and vital statistics systems in the Pacific: the Fijian experience", unpublished draft. Health Information Systems Knowledge Hub, School of Population Health, University of Queensland, Brisbane, Australia, 2013.

[23] L. Hufana and others, "Assessing the production, quality and use of national vital statistics: a case study of the Philippines", University of Queensland Health Information Systems Knowledge Hub, Documentation Note Series No. 2, November 2009.

[24] K.V. Navaratne, "Improving vital statistics through the civil registration system in Sri Lanka", paper presented at Health Sector Development Project Meeting, 2009, Accessed 22 August 2012 from: http://siteresources.worldbank.org/INTHSD/Resources/376278-1114111154043/1011834-1247677403598/060909SriLankaPresentation.pdf.

[25] V. Rommelmann and others, "Cost and results of information systems for health and poverty indicators in the United Republic of Tanzania", *Bulletin of World Health Organization*, vol. 83, No. 8, pp. 569–577.

[26] Cambridge Economic Policy Associates, "Estimating the cost of the civil registration and vital statistics system in South Africa", unpublished draft report presented at the Health Metrics Network in 2013.

[27] Economic Commission for Africa, *The Status of Civil Registration and Vital Statistics in South Africa*, country report presented at the Second Conference of African Ministers Responsible for Civil Registration and Vital Statistics, Durban, South Africa, 6-7 September 2012.

[28] Economic Commission for Africa, *Mauritius Report on Civil Registration and Vital Statistics*, report presented at the Second Conference of African Ministers Responsible for Civil Registration and Vital Statistics, Durban, South Africa, 6-7 September 2012.

[29] E. Jimenez Soto, "An economic evaluation of data collection methods", Working Paper Series No. 28, June 2013, Health Information Systems Knowledge Hub, University of Queensland, Brisbane, Australia, 2013.

[30] World Bank and World Health Organization, Global civil registration and vital statistics: Scaling-up investment plan 2014-2025. Draft unpublished document, 2014.

[31] S. Bah, "Multiple forces working in unison: the case of rapid improvement of vital statistics in South Africa post-1996", *World Health and Population*, vol. 11, No.1, pp. 50-59. Abstract accessed 22 August 2012 from http://ncbi.nlm.nih.gov/pubmed/20039594.

[32] B. Boekle and M.Harbitz, “Democratic governance, citizenship and legal identity: linking theoretical discussion and operational reality”, International Capacity and Finance Sector Working Paper (Washington, D.C., Inter-American Development Bank, 2009).

[33] C. Vandenabeele and C.V. Lao (eds.), *Legal Identity for Inclusive Development: Law and Policy Reform at the Asian Development Bank 2007* (Manila, Asian Development Bank, 2007).

[34] A.M. Abdellatif, “Good governance and its relationship to democracy and economic development”, paper presented at the Global Forum III on Fighting Corruption and Safeguarding Integrity, Seoul, 20-31 May 2003 (GF3/WS/IV-3/S1).

[35] J.M. Barendrecht and M. de Langen, “Legal empowerment of the poor: innovating access to justice”, in: *The State of Access: Success and Failure of Democracies to Create Equal Opportunities* (Washington, D.C., Brookings Institution Press, 2008).

[36] Commission on Legal Empowerment of the Poor and UNDP, *Making the Law Work for Everyone* (New York, Commission on Legal Empowerment of the Poor and UNDP, 2008).

[37] M. Harbitz and I.A. Axt, “Identification and governance policies: the legal, technical, and institutional foundations that influence the relations and interactions of the citizen with the government and society”, Inter-American Development Bank Technical Notes series, No. IBD-TN-196, September 2011. Accessed 6 May 2014 from http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=36400828.

[38] M. Harbitz and M. del C.Tamargo, “The significance of legal identity in situations of poverty and social exclusion: the link between gender, ethnicity, and legal identity”, Inter-American Development Bank Technical Notes series, November 2009.

[39] P. Thomas, “Ending child poverty and securing child rights: the role of social protection”, Briefing Paper (Plan International, 2005).

[40] K. Breckenridge, “No will to know: the rise and fall of African civil registration in twentieth-century South Africa”, in *Registration and Recognition: Documenting the Person in World History*, K. Breckenridge and S. Szreter, eds. (Oxford, Oxford University Press/British Academy, 2012), pp. 357-383.

[41] T.B. Jabine and R.P. Claude (eds.), Human Rights and Statistics: Getting the Records Straight (Philadelphia, University of Pennsylvania Press, 1992).

[42] A. Corbacho, S. Brito and R. Osorio Rivas, "Birth registration and the impact on educational attainment", Inter-American Development Bank Working Paper Series No. IDB-WP-345, August 2012. Accessed 10 October 2013 at http://www.iadb.org/en/publications/publication-detail,7101.html?id=56606&dcLanguage=en&dcType=Working%20Papers&doctype=&docTypeID=AllPublic&searchLang=&keyword=corbacho&selectList=All&topicDetail=0&tagDetail=0&jelcodeDetail=0&publicationCover=0.

[43] W. Hunter and N. Borges Sugiyama, "Documenting citizenship: contemporary efforts toward social inclusion in Brazil", paper presented at the 2011 American Political Science Association Annual Meeting, Seattle, Washington, 1-4 September 2011.

[44] A. Hodges, C. O'Brien and L. Ganga, "Strengthening social protection for families and children in the Republic of Congo", Social and Economic Policy Working Paper November 2012 (New York, United Nations Children's Fund, 2012).

[45] C. Summer, *Access to Justice: Empowering Female Heads of Household in Indonesia*. PEKKA and AusAID, 2010. Available from http://familycourt.gov.au/wps/wcm/resources/file/eb679c0e09a39da/Access_to_Justice_July2010.pdf.

[46] C. Sumner and T. Lindsey, "Courting reform: Indonesia's Islamic courts and justice for the poor", *The International Journal for Court Administration*, December 2011.

[47] A.S. Tzoneva, "Civil registration and vital statistics as a tool for decreasing structural violence and promoting social inclusion", dissertation.

[48] A.M. Azarian and M.Pelling, "Social resilience of post-earthquake Bam". Available from https://kclpure.kcl.ac.uk/portal/en/theses/social-resilience-of-postearthquake-bam(f02f6d46-5646-4634-9f9a-45a7cedb62bf).html.

[49] R.M.M. Wallace and others, "Mother to Child: How Discrimination Prevents Women Registering the Birth of their Child", Plan International, the University of the Highlands and Centre for Rural Childhood, Perth College, Scotland. Available from http://plan-international.org/files/global/publications/campaigns/mother-to-child-how-discrimination-english. Accessed 18 July 2013.

[50] R.M.M. Wallace and others, op. cit., 2009.

[51] www.icao.int/Security/mrtd/Pages/24-NOV-2015.aspx.

[52] I.M. Moriyama, "Measurement of birth and death registration completeness", IIVRS Technical Paper No. 43. Abstracted article accessed 22 August 2012 from http://unstats.un.org/unsd/demographic/CRVS/IIVRS%20papers/IIVRS_paper43.pdf.

[53] C. Rao and others, “Evaluating national cause-of-death statistics: principles and application to the case of China”, *Bulletin of the World Health Organization*, vol. 83, No. 8, pp. 618–625. Accessed 22 August 2012 from www.who.int/bulletin/volumes/83/8/618.pdf.

[54] J. Joubert and others, “Evaluating the quality of national mortality statistics from civil registration in South Africa, 1997–2007”. *PLoS ONE*, vol. 8, No. 5.

[55] G. Yang and others, “Mortality registration and surveillance in China: history, current situation and challenges”, *Population Health Metrics*, vol. 3, No. 3. Accessed 22 August 2012 from www.pophealthmetrics.com/content/3/1/3.

[56] C. Rao and others, “Validation of cause-of-death statistics in urban China”, *International Journal of Epidemiology*, vol. 36, No. 3, pp. 642–651. Abstract accessed 22 August 2012 from www.ncbi.nlm.nih.gov/pubmed/17329316.

[57] C. Rao, D. Bradshaw and C. Mathers, “Improving death registration and statistics in developing countries: lessons from sub-Saharan Africa”, *Journal of Demography*, vol. 9, No. 2, pp. 81-99. Accessed 22 August 2012 from http://unstats.un.org/unsd/vitalstatkb/Attachment167.aspx.

[58] J. Pattaraarchachai and others, “Cause-specific mortality patterns among hospital deaths in Thailand: validating routine death certification”, *Population Health Metrics*, vol. 8, No. 1, p.12. Accessed 22 August 2012 from www.pophealthmetrics.com/content/pdf/1478-7954-8-12.pdf.

[59] R. Rampatige and others, “Promoting the periodic assessment of the quality of medical records and cause-of-death data: lessons learned from a medical records study in Sri Lanka”. Working Paper No. 14 (Brisbane, University of Queensland, School of Population Health, Health Information Systems Knowledge Hub, 2009). Accessed 22 August 2012 from www.uq.edu.au/hishub/all-publications.

[60] T.H. Lu and others, “Factors associated with errors in death certificate completion: a national study in Taiwan”, *Journal of Clinical Epidemiology*, vol. 54, No. 3, pp. 232-238. Abstract accessed 22 August 2012 from www.ncbi.nlm.nih.gov/pubmed/11223320.

[61] T. Lu, M. Lee and M. Chou, “Accuracy of cause-of-death coding in Taiwan: types of miscoding and effects on mortality statistics”, *International Journal of Epidemiology,* vol. 29, No. 2, pp.336-343. Accessed 22 August 2012 from http://ije.oxfordjournals.org/content/29/2/336.full.pdf+html.

[62] H. Wang and others, “Age-specific and sex-specific mortality in 187 countries, 1970-2010: a systematic analysis for the Global Burden of Disease Study 2010”, *The Lancet*, vol. 380, No. 9859, pp. 2071-2094.

[63] C.J.L. Murray and others, "What can we conclude from death registration? improved methods for evaluating completeness". *PLoS Medicine*, vol. 7, No. 4.

[64] D.M. Lloyd-Jones and others, "Accuracy of death certificates for coding coronary heart disease as the cause of death". *Annals of Internal Medicine*, vol.129, No. 12, pp. 10206.

[65] R. Lahti and A. Penttilä, "The validity of death certificates: routine validation of death certification and its effects on mortality statistics", *Forensic Science International*, vol. 115, Nos. 1-2, pp. 15-32.

[66] C. Gourbin and G. Masuy-Stroobant, "Registration of vital data: are live births and stillbirths comparable all over Europe? *Bulletin of World Health Organization*,vol. 73, No. 4, pp. 449-460.

[67] K. Carter and others, "An assessment of mortality estimates for Fiji, 1949-2008: findings and life tables, Documentation Note Series, No. 12, November 2010 (University of Queensland Health Information Systems Knowledge Hub, Queensland, Australia).

[68] K. Carter and others, "Routine mortality and cause-of-death reporting and analysis systems in seven Pacific island countries, Documentation Notes Series, No. 8, 2010 (University of Queensland Health Information Systems Knowledge Hub, Queensland, Australia).

[69] A.B. El gendy, "System of official statistics in Egypt: situation assessment and strategic objectives", Central Agency for Public Mobilization and Statistics, Cairo, 2010. Available from http://unstats.un.org/unsd/statcom/statcom_seminar/Egypt.pdf.

[70] S.C. Kulkarni and others, "Falling behind: life expectancy in US counties from 2000 to 2007 in an international context", *Population Health* Metrics, vol.9, No. 16.

[71] M. Naghavi and others, "Algorithms for enhancing public health utility of national causes-of-death data", *Population Health Metrics*, vol. 8 No. 9.

[72] C.J.L. Murray and others, "Estimating population cause-specific mortality fractions from in-hospital mortality: validation of a new method", *PLoS Medicine, vol. 4*, No. 11.

[73] K. Foreman and others, "Modeling causes of death: an integrated approach using CODEm", *Population Health Metrics*, vol. 10, No. 1.

[74] C. Rao and others, "Mortality in Central Java: results from the Indonesian mortality registration system strengthening project", BioMedical Central Research Notes, vol. 3, 2010. Available from www.biomedcentral.com/1756-0500/3/325.

[75] A.D. Lopez and others, "Verbal autopsy: innovations, applications, opportunities – improving cause of death measurement" (title of entire issue), Population Health Metrics, vol. 9, August 2011. Available from www.healthmetricsandevaluation.org/publications/verbal-autopsy-series, accessed 28 July 2013.

[76] E. França and others, "Use of verbal autopsy in a national health information system: effects of the investigation of ill-defined causes of death on proportional mortality due to injury in small municipalities in Brazil", *Population Health Metrics.*, vol. 9, p. 153.

[77] R. Zachariah and others, "Vital registration in rural Africa: is there a way forward to report on health targets of the Millennium Development Goals? *Transactions of the Royal Society of Tropical Medicine and Hygiene*, Vol. 105, No. 6, pp. 301-309. Available from http://dx.doi.org/10.1016/j.trstmh.2011.03.002.

[78] United Nations Children's Fund, *Every Child's Birth Right: Inequities and Trends in Birth Registration* (New York, UNICEF, 2013). Available from www.unicef.org/media/files/Embargoed_11_Dec_Birth_Registration_report_low_res.pdf.

[79] M. Muzzi, "UNICEF good practices in integrating birth registration into health systems (2000–2009): case studies – Bangladesh, Brazil, The Gambia and Delhi, India". Working Paper, January 2010 (New York, United Nations Children's Fund, 2009). Accessed 22 August 2012 from www.unicef.org/protection/files/Birth_Registration_Working_Paper.pdf.

[80] C. Ngoma, S.C. Marlen, and J. Herstad, E-Infrastuctures and *E-Services for Developing Countries* (Cape Town, South Africa, Springer Berlin Heidelberg, 2011).

[81] I. Adams, "Volunteers vital for counting births and deaths in Ghana", *Bulletin of the World Health Organization*, vol. 89, No. 5, pp. 322-323.

[82] M. Harbitz and others, "Uruguay Plan of Operations: Interconnection and modernization of civil registration and identification processes and generation of information for vital statistics in Uruguay", Document of the Inter-American Development Bank (UT T-1041).

[83] Centers for Disease Control and Prevention, *Global Program for Civil Registration and Vital Statistics (CRVS) Improvement*. Available from www.cdc.gov/nchs/isp/isp_crvs.htm. Accessed July 2013.

[84] P. Groenewald and others, "Local-level mortality surveillance in resource-limited settings: a case study of Cape Town highlights disparities in health", *Bulletin of the World Health Organization*, vol. 88, No. 6, pp. 444-451.

[85] Institute for Health Metrics and Evaluation, "United States adult life expectancy by county 1987–2007", Institute for Health Metrics and Evaluation, Seattle, United States". Accessed 22 August 2012 from www.healthmetricsandevaluation.org/ghdx/record/united-states-adult-life-expectancy-county-1987-2007.

[86] Australian Bureau of Statistics, *Regional Population Growth, Australia 2009–10*. ABS catalogue no. 3218.0. Retrieved 22 August 2012 from www.abs.gov.au/ausstats/abs@.nsf/ Products/3218.0~2009-10~Main+Features~Main+Features?OpenDocument#PARALINK17.

[87] Institute for Health Metrics and Evaluation, *"The Global Burden of Disease: Generating Evidence, Guiding Policy"* (Seattle, Washington, Institute for Health Metrics and Evaluation, 2013).

[88] R. Lozano and others, "Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010". *The Lancet*, 15 December 2012, vol. 380, No. 9859, pp. 2095–2128.

[89] C.B. Pedersen and others, "The Danish Civil Registration System: a cohort of eight million persons", *Danish Medical Bulletin*, 2006, vol. 53, pp. 441-449.

[90] K.O. Kyvik, A. Green and H. Beck-Nielsen, "The new Danish twin register: establishment and analysis of twinning rates", *International Journal of Epidemiology*, vol. 24, No. 3, pp. 589-596.

[91] K. Wisborg and others, "Exposure to tobacco smoke in utero and the risk of stillbirth and death in the first year of life", *American Journal of Epidemiology*, 2001, vol. 154, No. 4, pp. 322-327.

[92] M. Osler and others, "Socioeconomic position in early life, birth weight, childhood cognitive function, and adult mortality: a longitudinal study of Danish men born in 1953", *Journal of Epidemiology and Community Health*, vol. 57, No. 9, pp. 681-686.

[93] E. Agerbo, M. Nordentoft and P.B. Mortensen, "Familial, psychiatric, and socioeconomic risk factors for suicide in young people: nested case-control study", *BMJ*, vol. 325.

[94] C. Taylor, "Mobile system in Uganda for civil registration: Civil Registration and Vital Statistics Conference Newsletter No 2". Economic Commission for Africa. 2012. Available from: http://new.uneca.org/Portals/crmc/2012/documents/crvs_newsletter2.pdf. Accessed 5 July 2013.

[95] C. Taylor, "Innovations in civil registration system in Namibia. Civil registration and vital statistics conference", Newsletter no 2. UN Economic Commission for Africa. 2012. Available from: http://new.uneca.org/Portals/crmc/2012/documents/crvs_newsletter2.pdf. Accessed 5 July 2013.

[96] C. Taylor, "Interventions in civil registration system in Botswana. Civil Registration and Vital Statistics Conference Newsletter No. 2. Economic Commission for Africa. 2012. Available from http://new.uneca.org/Portals/crmc/2012/documents/crvs_newsletter2.pdf. Accessed 11 January 2013.

[97] H. Toivanen, J. Hyvönen and M. Wevelsiep, " Mobile birth registration in Liberia. VTT Technical Research Centre of Finland. 2011. Available from www.vtt.fi/inf/pdf/workingpapers/2011/W159.pdf. Accessed 11 January 2013.

[98] E.B. Magbity, "Proposal: national birth registration system – Sierra Leone". 2012 July. E-Technologies Inc., 3 Cole Street Cole Farm, Off Wilkinson Road, Sierra Leone.

[99] C. Ngoma, S.C. Marlen and J. Herstad, E-Infrastuctures and *E-Services for Developing Countries* (Cape Town, South Africa, Springer Berlin Heidelberg, 2011).

[100] *Health Metrics Network Corporate Plan 2012-2013* (WHO/IER/HMN/12.1). Available from www.who.int/healthmetrics/news/roadmap.pdf. Accessed July 2013.

[101] World Health Organization, Government of Kenya, Ministry of Public Health and Sanitation, and Department of Civil Registration. MOVEIT project implementation report (unpublished).

[102] Partners In Health/Inshuti Mu Buzim. MOVEIT Rwanda. Monitoring of vital events through the use of information technology (unpublished draft report).

[103] James P. Grant School of Public Health, BRAC University. MOVEIT Bangladesh (unpublished progress report).

[104] Johns Hopkins Bloomberg School of Public Health. MOVEIT: vital registration in communities in northern Ghana (unpublished technical report).

[105] "The Philippines Civil Registration and Vital Statistics Indicative Investment Plan 2015-2019." Draft for consultation at CRVS technical consultation meeting, Addis Ababa, 28-29 April 2014. A CRVS project sponsored by Canadian DFATD and World Bank

[106] Jembi Health Systems. Improve the coverage and the quality of the National Mortality System of Mozambique (unpublished project report).

[107] A. Campione and others, "Use of appropriate technology in the development of ICD-10 based informatics systems for hospital mortality notification in resource limited settings: Mozambican team experience". Available from www.moasis.org.mz/wp-content/uploads/2011/09/Use-of-appropriate-technology-in-the-development-of-ICD-10-based-informatics-systems.pdf. Accessed 11 Jan 2013.

[108] C. Rao, "Using information technology to improve the management and processing of vital registration data: a case study in Indonesia" (unpublished technical report, 2012).

[109] Health Metrics Network. A report on MOVEIT assessment. University of Oslo and HISP India (unpublished draft paper).

[110] University of Oslo, HISP India, Health Metrics Network, "Systematic Review of eCRVS and mCRVS Interventions in LMICs"(unpublished document).

[111] Ifakara Health Institute and Swiss Tropical and Public Health Institute, "The MOVEIT pilot project: innovations in monitoring vital event – mobile phone SMS to improve coverage of birth and death registration: a scalable solution" (unpublished paper). Health Information Systems Knowledge Hub, University of Queensland, Australia.

[112] A. Gelb and J. Clark, "Identification for development: the biometrics revolution", CGD Working Paper 315 (Washington, D.C., Center for Global Development, 2013). Available from www.cgdev.org/content/publications/detail/1426862. Accessed 18 July 2013.

[113] K. Breckenridge and S. Szreter, eds., *Registration and Recognition: Documenting the Person in World History* (Oxford, Oxford University Press/British Academy, 2012).

[114] R. Ramakumar, "The huge UID project in India: a sceptical note", in *Ethics and Policy of Biometrics: Third International Conference on Ethics and Policy of Biometrics and International Data Sharing, IECB 2010, Hong Kong, January 2010, Revised Selected Papers*, A. Kumar and D. Zhang, eds. (Springer, 2010).

[115] T. Lewis and others, "E-health in low- and middle-income countries: findings from the Center for Health Market Innovations", *Bulletin of the World Health Organization*, 2012, vol. 90, pp. 332–340.

[116] *Handbook on Civil Registration and Vital Statistics Systems: Policies and Protocols for the Release and Archiving of Individual Records* (United Nations publication, Sales No. E.98.XVII.6).

[117] H. Skiriand others, "How to modernise a civil registration system: the case of Albania". Notater Documents No. 32/2012, Oslo, Statistics Norway. Accessed 22 August 2012 from www.ssb.no/english/subjects/00/90/doc_201232_en/doc_201232_en.pdf.

[118] Statistics Norway Department of Social Statistics and the Albanian Ministry of Local Government and Decentralisation. *Selected Documents on the Modernisation of the Civil Registration System in Albania, vol. II*. Retrieved 22 August 2012 from www.ssb.no/english/subjects/02/90/doc_200402_en/doc_200402_en.pdf.

[119] C.L. Szwarcwald, "Strategies for improving the monitoring of vital events in Brazil", *International Journal of Epidemiology*, vol. 37, No. 4, pp. 738-744.

[120] S. Naidu, M. Buttsworth and A. Aumua, "Strengthening civil registration and vital statistics systems in the Pacific: the Fijian experience" (unpublished draft). Health Information Systems Knowledge Hub School of Population Health, University of Queensland.

[121] D. Bradshaw and M. Schneider, "Vital registration and statistics in South Africa: case study Metropolitan Cape Town", Cape Town, Medical Research Council.

[122] K.V. Navaratne, "Improving vital statistics through the civil registration system in Sri Lanka. Health Sector Development Project", meeting presentation. Accessed 22 August 2012 from http://siteresources.worldbank.org/INTHSD/Resources/376278-1114111154043/1011834-1247677403598/060909SriLankaPresentation.pdf.

[123] I. Danel and M. Bortman, "An assessment of LAC's vital statistics system: the foundation of maternal and infant mortality monitoring". Health, Nutrition and Population Discussion Paper, May 2008, Washington, D.C., World Bank. Accessed 22 August 2012 from http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/LACVitalStat.pdf.

[124] B. Salawu, "Strengthening vital registration systems as a source of demographic data of effective socio-economic development planning in Nigeria", *Pakistan Journal of Social Sciences*, vol. 6, No. 4, pp. 200-206.

[125] L. Hufana and others, "Assessing the production, quality and use of national vital statistics: a case study of the Philippines", Documentation Note Series, No. 2, November 2009 University of Queensland, Health Information Systems Knowledge Hub.

[126] S. Gamage and others, "Assessing the production, quality and use of national vital statistics: a case study of Sri Lanka", Documentation Note Series, No. 1, 2009, University of Queensland Health Information Systems Knowledge Hub.

[127] L. Mikkelsen, "Rapid Assessment of vital statistics systems: evaluation of the application of the World Health Organization/Health Information Systems Knowledge Hub tool in 26 countries in the Asia-Pacific region", Working Paper Series, No. 10, 2010, University of Queensland Health Information Systems Knowledge Hub.

[128] L. Mikkelsen, "Improving civil registration and vital statistics systems: lessons learnt from the application of health information tools in Asia and the Pacific", Working Paper Series, No. 24, 2012, University of Queensland Health Information Systems Knowledge Hub.

[129] I. Adams, "Volunteers vital for counting births and deaths in Ghana", *Bulletin of the World Health Organization*, vol. 89, No. 5, pp. 322-323.

[130] S. Ohemeng-Dapaah and others, "Combining vital events registration, verbal autopsy and electronic medical records in rural Ghana for improved health services delivery", *Studies in Health Technology and Informatics*, 2010, vol. 160, Part 1, pp. 416-420.

[131] J.H.F. Remme and others, "Defining research to improve health systems", *PLoS Medicine*, vol. 7, No. 11.

[132] www.indepth-network.org.

[133] www.iussp.org/en/about/mission.

[134] www.isi-web.org/isi-wscs/isi-world-statistics-congresses.

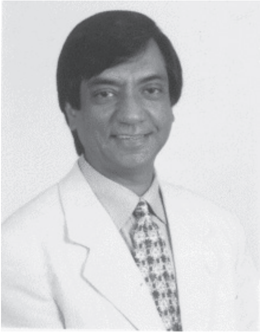
[135] http://ieaweb.org.

[136] www.populationassociation.org.

Obituary

Wasim Alimuz Zaman, Ph.D.

1948-2014



Dr. Wasim Alimuz Zaman, Executive Director of the International Council on Management of Population Programmes (ICOMP), passed away under tragic circumstances on 20 March 2014 while on mission in Kabul to advance the agenda of the International Conference on Population and Development (ICPD). Dr. Zaman was one of nine civilians killed in the attack in the Serena Hotel by four gunmen. Although Dr. Zaman was a victim of this attack, his spirit and passion about better governance and universal access to health services in developing countries will live on.

Dr. Zaman served as a member of the Editorial Board of the *Asia-Pacific Population Journal* and worked closely with ESCAP in the area of population and development, including serving on the Steering Committee for the Sixth Asian and Pacific Population Conference, held in September 2013. Dr. Zaman played a leading role in catalysing parliamentarians and engaging civil society in preparation for, and in making their voices heard at, the Conference.

Dr. Zaman commenced his career as a journalist at several newspapers and television stations in Bangladesh and Pakistan. After obtaining his doctoral degree in population sciences from Harvard University in the United States of America, he performed academic research and was a teaching fellow at the John F. Kennedy School of Government at Harvard University, at the Lincoln Institute of Land Policy in Cambridge, Massachusetts, and at the Harvard Center for Population and Development Studies.

In 1988, Dr. Zaman joined the United Nations Population Fund (UNFPA) in New York, and went on to serve the United Nations for more than two decades. He held several high-level positions at the central, regional and national levels, including as UNFPA representative for Bhutan and India (1995-1998); chairperson of the United Nations theme group for HIV and AIDS (India) (1996-1998 and 2000-2003); director of the UNFPA Country Technical Services Team for South and West Asia, Kathmandu (1998-2008); and Special Representative of UNFPA to Palestine (2008).

Following his retirement from UNFPA, Dr. Zaman's passion and dedication to population and development activities, and more specifically to the ICPD agenda, inspired him to join ICOMP Malaysia as executive director in 2009. He continued to play a strong leadership role in promoting and advocating for reproductive health and population issues, gender equality, the empowerment of women and girls, and universal access to health care.

The following words of a colleague highlight the generosity, humility and humanity that all of us admired in him:

> *As for those who had the privilege of working closely with him, he will be remembered not only for his work and contributions, but for his great spirit and humour, and ability to touch the lives of many. He inspired those he worked with and drove the vision of UNFPA with passion. The impact of his loss is profound and heartfelt as he was a true leader and gentleman with a vision.*

Dr. Zaman's selfless spirit will always remain in us and will encourage us to continue his fight and passion for a better life for all. He has left behind his wife, three daughters and one granddaughter.

May his soul rest in peace.

International Council on Management of Population Programmes
534 Jalan Lima Taman Ampang Utama, 68000 Selangor, Malaysia

Editorial management

Editor-in-Chief: Srinivas Tata
Editor: Vanessa Steinmayer
Advisers: Jerrold W. Huguet,
Bhakta Gubhaju and
Ghazy Mujahid

Asia-Pacific Population Journal

Guidelines for contributors

Original contributions are invited, especially papers by authors from or familiar with the Asian and Pacific region. Ideally, such papers would discuss the policy and/or programme implications of population issues and solutions to problems, reporting on experiences from which others could benefit

All material submitted for the consideration of the Editorial Board should be in the English language. Manuscripts should not exceed 6,000 words, including tables, figures, references and other material. Consideration will also be given to shorter technical and policy papers and notes on areas of specific policy interest and value. Manuscripts should include a short abstract (100-200 words) of the issues addressed and the most important policy-related findings. The manuscript should be prepared in one of the major word-processing programs and be double-spaced. The margins should be at least 3 cm (roughly 1 inch) wide, preferably more for the left-hand margin. If possible, please submit the manuscript as an e-mail attachment to the address given below. If e-mail attachment is not possible, send a hard copy (a single-sided print copy on A4-sized paper), together with an e-file of the text on CD-ROM or floppy disc.

A complete list of references arranged alphabetically by author should also be included at the end of the manuscript together with a few keywords. Please refer to examples in any issue of the *Journal* or contact the Editor for a copy of the editorial guidelines. Figures and tables should be supplied separately either as e-mail attachments or in the e-file, preferably in Microsoft® Excel® or any major spreadsheet program.

Manuscripts are accepted on the understanding that they may be edited. Contributors should submit only material that has not previously been published or submitted for publication elsewhere; and they should so state in their covering letter.

A brief introduction about the author(s), including title and affiliations, should also be submitted.

All manuscripts will be submitted to double-blind peer review. The name(s) of the author(s) or other identifying information should therefore be placed only on the title page in order to preserve anonymity.

Manuscripts may be sent by e-mail to the Editor, *APPJ,* at escap-population@un.org; or by airmail post to: Editor, *APPJ*, Social Development Division, ESCAP, United Nations Building, Rajadamnern Nok Avenue, Bangkok 10200, Thailand.

ESCAP is the regional development arm of the United Nations and serves as the main economic and social development centre for the United Nations in Asia and the Pacific. Its mandate is to foster cooperation between its 53 members and 9 associate members. ESCAP provides the strategic link between global and country-level programmes and issues. It supports Governments of countries in the region in consolidating regional positions and advocates regional approaches to meeting the region's unique socioeconomic challenges in a globalizing world. The ESCAP office is located in Bangkok. Please visit the ESCAP website at www.unescap.org for further information.

The shaded areas of the map indicate ESCAP members and associate members.

UNITED NATIONS PUBLICATION
Sales No. E.14.II.F.99

Manufactured in Thailand
ISBN: 978-92-1-120680-7
e-ISBN: 978-92-1-057073-2
ST/ESCAP/2696

Copies of this publication may be obtained from:

Social Development Division
Economic and Social Commission
for Asia and the Pacific (ESCAP)
United Nations Building
Rajadamnern Nok Avenue
Bangkok 10200, Thailand
E-mail: escap-sdd@un.org

United Nations publications may be obtained from bookstores and distributors throughout the world. Please consult your bookstore or write to any of the following:

Customers in: America, Asia and the Pacific

Email: order@un.org
Web: un.org/publications
Tel: +1 703 661 1571
Fax: +1 703 996 1010

Mail Orders to:
United Nations Publications
PO Box 960
Herndon, Virginia 20172
United States of America

Customers in: Europe, Africa and the Middle East

United Nations Publication
c/oEurospan Group
Email: info@eurospangroup.com
Web: un.org/publications
Tel: +44 (0) 1767 604972
Fax: +44 (0) 1767 601640

Mail Orders to:
United Nations Publications
Pegasus Drive, Stratton Business Park
Biggleswade, Bedfordshire SG18 8TQ
United Kingdom

For further information on this publication,
please address your enquiries to:

Chief
Conference and Documentation Service Section
Office of the Executive Secretary
Economic and Social Commission for Asia and the Pacific (ESCAP)
United Nations Building, RajadamnernNok Avenue
Bangkok 10200, Thailand
Tel: 66 2 288-1110
Fax: 66 2 288-3018
E-mail: escap-cdss@un.org

UNITED NATIONS
ESCAP

Published since 1986 by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the *Asia-Pacific Population Journal* (APPJ) brings out high-quality, evidence-based and forward-looking articles on a wide rage of population and development issues in Asia and the Pacific.

This issue of the *Asia-Pacific Population Journal* contains the following articles:

A development imperative: civil registration and vital statistics systems in the Asia-Pacific region
By Carla Abouzahr, Claudia Stein, Nigel Chapman, Daniel Toole, Christophe LeFranc, Kaushal Joshi and Rikke Munk Hansen

Strengthening civil registration and vital statistics in the Asia-Pacific region:learning from country experiences
By Carla Abouzahr, Said Yaqoob Azimi, Lisa Grace S. Bersales, Chandrasekaran Chandramouli, Lourdes Hufana, Khalid Khan, Gulnara Kulkayeva, Jonathan Marskell, and Lyaziza Sauyekenova

Civil registration, human rights and social protection in Asia and the Pacific
By Lucía González López, Tanja Brøndsted Sejersen, Nicholas Oakeshott, Gaspar Fajth, Taimur Khilji and Nicoleta Panta

Towards a research agenda for civil registration and vital statistics in the Asia-Pacific region
By Carla Abouzahr, Mia Harbitz, Haishan Fu and Raj Gautam Mitra

ISBN 978-92-1-120680-7

9 789211 206807

United Nations publication
Printed in Thailand

November 2014 – 700