CRVS COUNTRY PERSPECTIVES

Bangladesh:
A successful journey towards CRVS system improvement

March 2018

Applying country experiences and knowledge

Resources available from the University of Melbourne, Bloomberg Philanthropies Data for Health Initiative

CRVS development series

The CRVS development series, generated through the Initiative, form a lasting archive of concise and easily accessible evidence and knowledge on strengthening CRVS systems. The content is based on a combination of technical knowledge and country experiences, as well as the scientific literature. The series is intended to stimulate debate and ideas for in-country CRVS policy, planning and capacity building, and promote the adoption of best practice to strengthen CRVS systems worldwide.

CRVS technical outcome series

This series focuses on filling a range of scientific knowledge gaps and offering new tools, methods, findings and approaches for CRVS systems and data improvement. The series has a strong empirical focus. It reports on works in progress, particularly for large or complex technical initiatives, and on specific components of projects that may be of more immediate relevance to stakeholders.

CRVS resources and tools

Capacity-building resources and tools are designed to influence and align CRVS processes with established international or best-practice standards and to help countries improve their systems. These resources, which are used extensively in the Initiative's training courses, aim to change practice and ensure countries benefit from such changes by developing critical CRVS capacity among technical officers and ministries.

CRVS country perspectives

CRVS country perspectives describe the capacity-building experiences and successes of strengthening CRVS systems in partner countries, including fellowship reports. The series describes the state of CRVS systems improvement in partner countries and lessons learnt, and provides a baseline for comparison over time and between countries.

CRVS action guides and summaries

Many papers from the development and technical outcome series have accompanying action guides or summaries, which provide a succinct overview of key points and, in the case of action guides, a suggested way forward for countries.

Suggested citation

Bangladesh Implementation Working Group. *Bangladesh: A successful journey towards CRVS system improvement.* CRVS country perspectives. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.

Acknowledgements

Figure 1: Participants at the Bloomberg Data for Health Initiative's midterm evaluation meeting, Dhaka, Bangladesh, July 2017

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Abbreviations

BD4H	Bloomberg Philanthropies Data for Health Initiative
COD	cause of death
CRVS	civil registration and vital statistics
DGHS	Director General of Health Services
DFAT	Department of Foreign Affairs and Trade (Australian Government)
EPI	Expanded Program on Immunization
FWA	family welfare assistant
HA	health assistant
ID	identification
IT	information technology
MCCOD	medical certification of cause of death
ODK	open-source data kit
VA	verbal autopsy

Key terms

Process map:	is a visual snapshot of the end-to-end activities, stakeholders and requirements of a system. Process mapping is becoming an essential early step in the comprehensive assessment of any CRVS system.
Union Parishad:	is the local birth and death registry office in Bangladesh.
Upazila:	(Bengali, or subdistrict, pronounced: upojela) functions as an administrative sub-unit within a larger district. Bangladesh presently has 491 upazilas.
Verbal autopsy:	is a method for collecting information about a deceased individual's signs and symptoms before their death from their family or next of kin and interpreting these to diagnose the likely or most probable cause of death.

Applying country experiences and knowledge

Bangladesh: A successful journey towards CRVS system improvement

This *CRVS country perspective* highlights three successful technical interventions implemented by the Government of Bangladesh and its civil registration and vital statistics (CRVS) stakeholders to strengthen the country's CRVS system. Led by the National CRVS Implementation Committee under the Cabinet Division, the interventions form part of the Committee's larger project on Technical Support for CRVS System Improvement in Bangladesh.

The three pilot interventions were rolled out between 2016 and 2017 with the support of CRVS specialist technicians from the Bloomberg Philanthropies Data for Health (D4H) Initiative, and focused on:

1. Improving the timeliness and completeness of birth and death registration, particularly ensuring that registration of the vital event occurs within the 45 day period required under Bangladesh's *Births and Death Registration Act 2004*

2. Introducing verbal autopsies to collect information on cause of death for community deaths

3. Introducing medical certification of cause of death in four hospitals, based on international best-practice standards.

The interventions have been highly successful, significantly increasing the data being collected on births and deaths and helping the community to understand the importance of these data. The pilot interventions are now being expanded into other regions.

- **The status of CRVS in Bangladesh**
- **Advancing the CRVS systems-strengthening agenda**
- **The Kaliganj Model: improving birth and death registration**
- **Implementing VA for community deaths**
- **Medical certification of cause of death in hospitals**

Civil registration and vital statistics in Bangladesh

Bangladesh has prioritised strengthening its CRVS system to ensure everyone is counted and included in planning and policy decisions.

With just under 163 million people,[1] Bangladesh is one of the most densely populated countries in the world (**Figure 2**). To achieve the country's aspiration to become a middle-income country by its 50th birthday in 2021,[2] Bangladesh aims to transform its richest asset – its huge population – into a human resource for building a better future. To do this, Bangladesh is prioritising strengthening its civil registration and vital statistics (CRVS) system.

Civil registration is the process through which major vital events that occur in a population – including births, deaths, marriages, divorces and adoptions – are officially recorded. Registration should be continuous, permanent, compulsory and universal, in accordance with the law.[3]   Using the information contained in individual civil registration records, CRVS systems generate vital statistics. Such statistics include:

- numbers and rates of births
- key characteristics of births, such as births by sex, location and maternal age
- numbers and rates of deaths, and
- deaths by key characteristics such as age, sex, location and cause of death (COD).

1   World Bank. Bangladesh: Data. Available at: https://data.worldbank.org/country/bangladesh (accessed 5 September 2017).
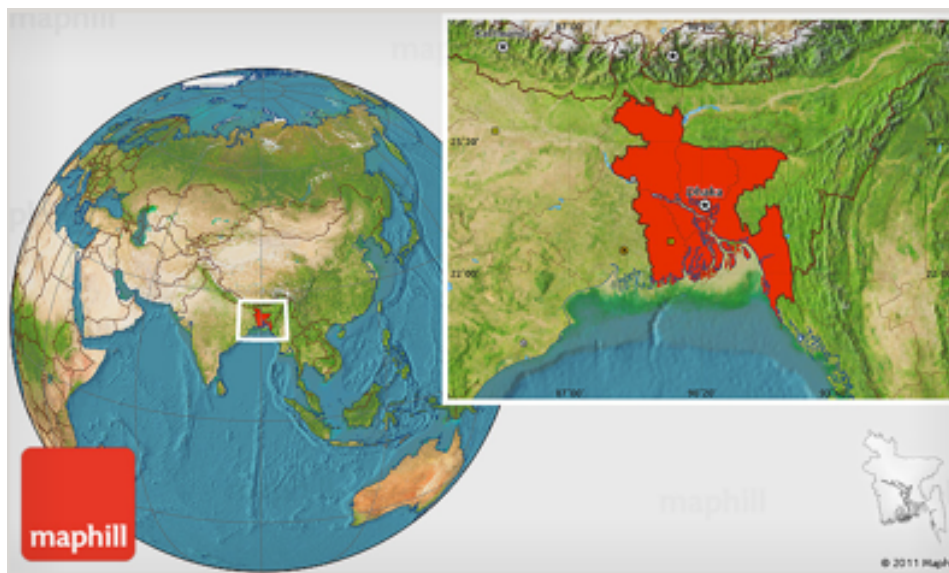2   World Bank. Bangladesh: Overview. Available at: worldbank.org/en/country/bangladesh/overview (accessed 5 September 2017).
3   UN Department of Economic and Social Affairs (Statistical Division). *Principles and recommendations for a vital statistics system,* revision 3. New York, USA: UNSD; 2014.

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Figure 2: Map of Bangladesh

Source: Adapted from World Atlas, available at worldatlas.com/webimage/countrys/asia/lgcolor/bd-color.htm and Maphil, available at http://www.maphill.com/bangladesh/location-maps/satellite-map/

CRVS history

Bangladesh officially came into being in 1971, but its CRVS journey began almost a century earlier in 1873 when the Birth and Death Registration Act was enacted under British rule of the subcontinent (**Figure 3**). Following positive legislative and policy reform, the country renewed its CRVS practice by repealing the long-standing Act of 1873 and enacting the nation's Births and Deaths Registration Act 2004. This Act brought a major shift in increasing birth registration rates, as well as better enforcement of death registration.[4] The new Act, which came into force in 2006, made birth and death registration compulsory within 45 days of the vital event, and made the birth and death registration of every Bangladeshi citizen a matter of law and an individual legal right.

The *Births and Deaths Registration Act 2004* also ushered in a new identification (ID) number system. Each Bangladeshi citizen has a unique ID number, issued by the Bangladeshi government, from birth until death. Use of a single, unique ID number streamlines and standardises ID collection and avoids duplicate or multiple IDs being attributed to an individual. This increases the accuracy and quality of Bangladesh's vital statistics data, which can then be used to support reliable evidenced-based population health policy and planning.

> Registering births and deaths within 45 days of the event became law in 2006.

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4   UNICEF. *Birth registration in Bangladesh* (updated April 2010). Available at: https://www.unicef.org/bangladesh/Birth_Registration(1).pdf (accessed 5 September 2017).

Figure 3: Key events in strengthening the CRVS system of Bangladesh
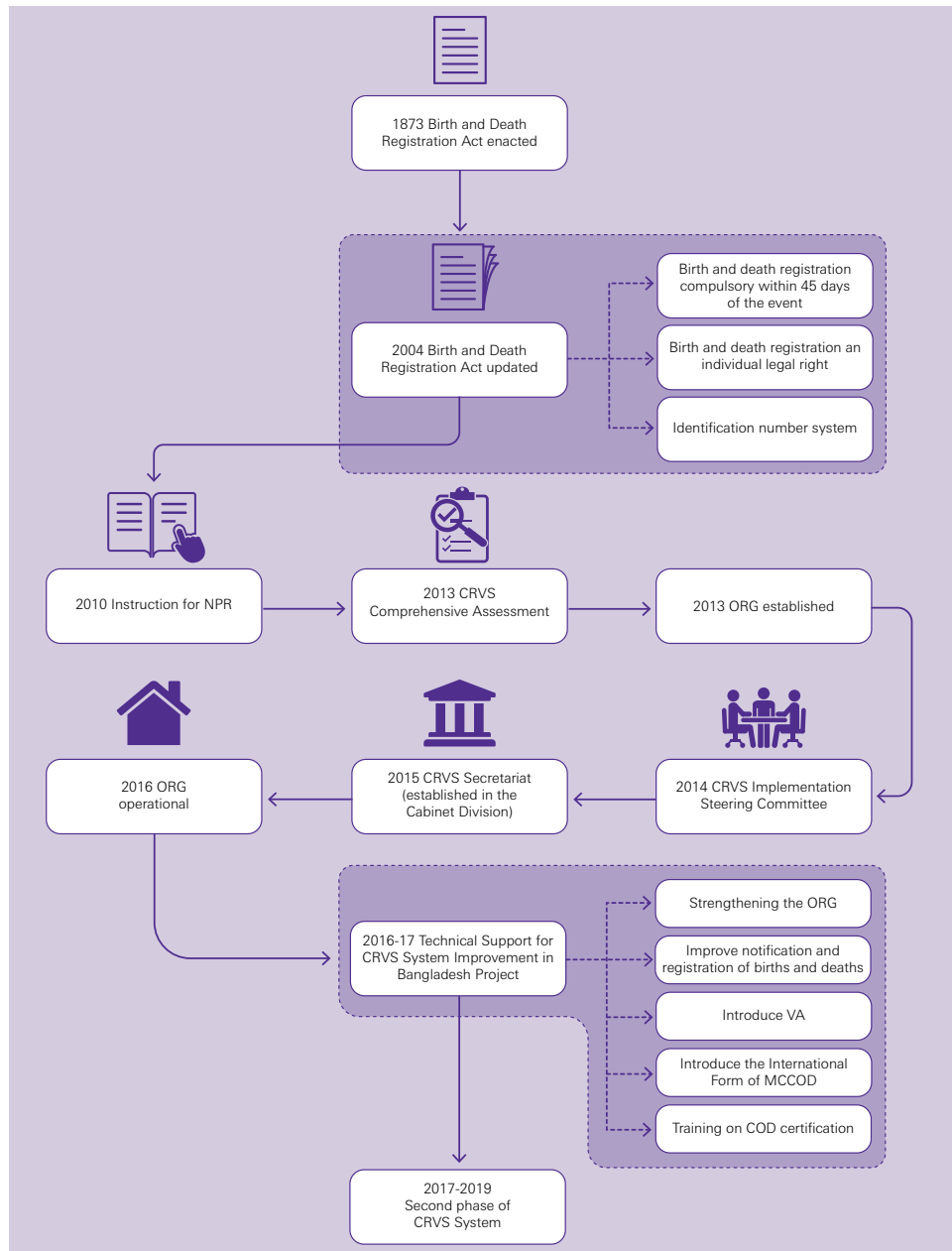
COD = cause of death; CRVS = civil registration and vital statistics; MCCOD = medical certificate of cause of death; NPR = national population register; ORG = organisation

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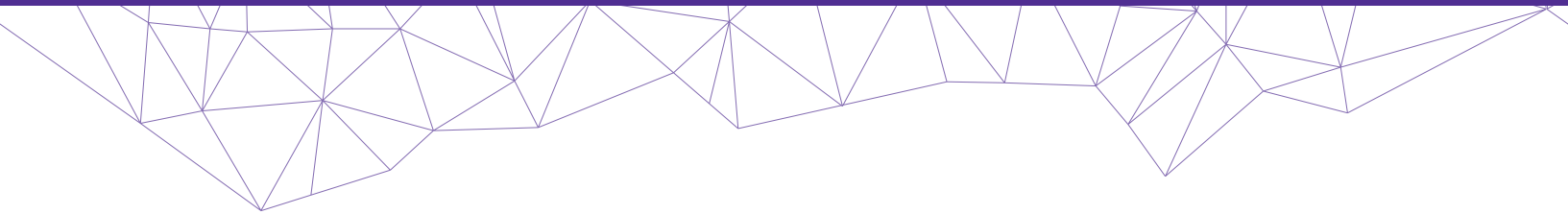
The Office of the Registrar General of Birth and Death Registration was established in 2016: a critical event in CRVS strengthening activities in Bangladesh.

Amendments to the Births and Deaths Registration Act 2004 in 2013 resulted in the establishment of the Office of the Registrar General of Birth and Death Registration in 2016.[5] This was followed in 2017 by the country's update of the *Birth and Death Registration Rules 2006.* The updated rules detailed the responsibilities of the concerned authorities to ensure smooth implementation of CRVS in Bangladesh in the future.

Current focus

Bangladesh acknowledges that it will be unable to fully and effectively manage the momentum for positive development that can be derived from its population unless everyone is counted and included through CRVS improvement.[6] Bangladesh has therefore established high-level political support for this improvement.

In 2014, the Bangladeshi government established a CRVS Steering Committee, headed by the cabinet secretary, to improve the Bangladesh CRVS system. This high-level committee consists of 22 members, including 17 secretaries of ministries for policy support. The CRVS Steering Committee is further supported by a 14-member CRVS Implementation Committee, headed by the secretary for Coordination and Reforms in the Cabinet Division. The Cabinet Division sits directly under the Prime Minister of Bangladesh.

Figure 4: CRVS project steering committee meeting and CRVS project implementation committee meeting, 2017

Bangladesh has high-level political commitment for improving its CRVS system.

Also, in 2014, the ministers and representatives of members and associate members of the United Nations Economic and Social Commission for Asia and the Pacific assembled at the Ministerial Conference on Civil Registration and Vital Statistics in Asia and the Pacific. They made a Ministerial Declaration that reaffirmed 'the human right of everyone to be recognized everywhere as a person before the law'.[7] The Declaration to 'get everyone in the picture' proclaimed the 'Asian and Pacific CRVS Decade' for 2015–2024. Bangladesh's CRVS vision and mission marries with this visionary 'get everyone in the picture' goal.

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5   Government of Bangladesh. *Office of the Registrar General, Birth and Death Registration, Local Government Division*. Available at: br.lgd.gov.bd/english.html (accessed 5 September 2017).

6   Lo S & Horton R (2015). Everyone counts – so count everyone. *The Lancet* 386:1313–1315.

7   Ministerial Declaration to 'Get everyone in the picture' in Asia and the Pacific; adopted by the Ministerial Conference on Civil Registration and Vital Statistics in Asia and Pacific on 28 November 2014 in Bangkok, Thailand. Available at: getinthepicture.org/sites/default/files/resources/Ministerial.Declaration.English.final_.pdf (accessed 8 February 2018).

Figure 5: Bangladesh CRVS vision and mission

UID = universal identification
*Source: Adapted from Civil Registration and Vital Statistics in Asia and the Pacific. Available at
(*getinthepicture.org/country/bangladesh *(accessed 8 February 2018).*

The project: How Bangladesh advancing its CRVS system-strengthening agenda

The Technical Support Project for CRVS System Improvement in Bangladesh was established
in April 2016 by the CRVS Implementation Committee, located in the Cabinet Division. There
were five major interventions facilitated by the project:

1. Strengthening the Office of the Registrar General for Birth and Death Registration,
   including:

   ■ helping the Office of the Registrar General to review existing CRVS laws and
   regulations to best legally embed CRVS systems improvement practices[8]

   ■ process mapping existing CRVS systems for birth and death registration for improved
   stakeholder integration and data flow.

2. Improving the completeness of notification and registration of births and deaths within
   the 45-day specified period. This included:

   ■ a pilot roll-out of the 'Kaliganj Model' for birth and death registration and notification
   in the Gazipur District, led by community-based health assistants (HAs) and family
   welfare assistants (FWAs).

3. Introducing verbal autopsy (VA) for determining COD for community-level deaths (ie for
   the deaths that occur outside of hospitals and other health facilities). This entailed:

   ■ a pilot roll-out of a VA data collection program in the Gazipur District, led by
   community-based HAs.

The Technical Support
Program for CRVS
System Improvement in
Bangladesh focussed on
five major interventions.

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8   University of Melbourne. Strengthening *CRVS systems through effective legislation.* CRVS development series. Melbourne,
     Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University
     of Melbourne; 2018.

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4. Introducing the International Form of Medical Certificate of Cause of Death in four major Bangladeshi hospitals.

5. Training appropriate staff on the topics of medical certification of cause of death (MCCOD), VA, information technology (IT) and data management to build capacity for quality analysis of Bangladesh's vital statistics data.

With technical support from BD4H, most of the project's first phase of activities was completed by June 2017. Three interventions (the Kaliganj Model for birth and death registration, introduction of VA, and introduction of the MCCOD) are discussed in detail below, including key factors that led to their success.

Figure 6: Pre-training workshop on SmartVA, Dhaka, Bangladesh, 2016

Intervention: Improving birth and death registration

A comprehensive pilot model for improving birth and death notification and registration was rolled out in 2017 after intense community discussion, planning and local government staff training.

The purpose of the pilot was to develop an optimal model to ensure notification and registration of births and deaths within 45 days of occurrence as required by Bangladesh civil registration law. Fewer than 3% of births and 1% of deaths were registered within this time frame. The model was based on raising community awareness and supporting families, and ensuring the local registry offices were strengthened to cope with increased demand.

The pilot was undertaken at Kaliganj Upazila in the Gazipur District of the Dhaka Division (**Figure 7**). Kaliganj Upazila spans an area of 218 square kilometres and has a population of 288 670 people. It is estimated that each year some 7000 births and 1800 deaths occur in the area.

> At the start of the intervention, less than 3% of births and 1% of deaths were registered within 45 days of the event.

Figure 7: Location of Gazipur, Dhaka Division, Bangladesh

Gazipur
গাজীপুর জেলা

District

Location of Gazipur in Bangladesh
Coordinates: 24.00°N 90.43°E

The 'Kaliganj Model' for birth and death notification and registration

The initiative was delivered by a team of community-based workers, comprising local-level HAs and FWAs from the Kaliganj Upazila Health Complex, under the leadership of the Upazila health and family planning officer, who is also the chief executive health officer of the complex.[9] Team members live and work within their communities and are therefore well-positioned to identify births and deaths in the community. HAs and FWAs have many duties, including:

- Conducting routine immunisations as part of Bangladesh's Expanded Program on Immunization (EPI), including ensuring the immunisation of newborns in their community within the recommended period after birth.

- Keeping records of vital events (births and deaths).

- Coordinating satellite health clinics.

- Providing health promotion and preventive health education and family planning.

- Supporting healthcare referrals, especially for pregnant women, newborns and their mothers.

- Collecting health and population data from the field when required by government.

> Two key components of the Kaliganj model were the use of local health workers and links with the successful EPI.

As part of the pilot initiative, the HAs and FWAs kept track of the number of pregnancies and expected dates of delivery, the women accessing antenatal or postnatal healthcare, and the number of deaths in their communities. They provided this information, along with data on local birth and death notifications and registrations, twice a month in a written report to their supervisors. They integrated these activities into their routine duties related to EPI, which is the most effective and successful community-level health program in Bangladesh.

The HAs and FWAs also ensured that families registered the birth of newborn babies within 45 days of the date of birth. Newborn registration is imperative because the

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9   The Upazila Health Complex is a 50-bed subdistrict level hospital. There are 421 such types of hospitals in Bangladesh.

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baby's unique birth registration number must also be included on the baby's EPI card to facilitate access to early childhood vaccinations.

As part of the pilot scheme, HAs and FWAs supported families' engagement and smooth interaction with the CRVS system in their local communities. Health workers helped parents with completing and submitting the documents for birth registration.

As part of the model, birth registration is linked with children's immunisation cards.

They explained to pregnant women, mothers of newborns, family and community members the importance of birth registration of children. HAs and FWAs highlighted to parents that birth registration is especially important to enable their child to access the EPI, and that having a unique ID number gives children access to public education and other services later in life (**Box 1**).

HAs and FWAs provided parents with printed birth registration application forms, or helped parents collect these from the Union Parishad (the local birth and death registry office). They helped parents to complete the application forms, and to return and lodge the completed forms at the local registry office. Pilot team members could then verify the birth registration application with local CRVS authorities in their twice-monthly reports.

Under the pilot, HAs and FWAs also ensured that all currently unregistered children were registered with the Union Parishad when they were issued an EPI card on receipt of their childhood vaccinations.

Figure 8: A health assistant in Kaliganj Upazila briefing a mother about the importance of birth registration within 45 days of the birth occurring (used with permission)

Box 1: A mother benefiting from the registration of her baby's birth

'I did not think about the importance of birth registration of the children. The health worker who works at my village made me conscious about the matter. After the birth of my child she informed me that I would have to collect EPI [Expanded Program on Immunization] card for the vaccination of my baby. The baby would get vaccinated at the EPI centre. For that, the baby would have to get birth registration at the Office of the Birth and Death Registrar, because the birth registration number of the baby must be included in the EPI card.

'I thought that it was troublesome. But she immediately gave me a printed birth registration application form supplied by the Union Parishad and helped me to fill out the form. Not only that, she brought it with her to submit to the Union Parishad.

'She then told me, after one week, either my husband or I would collect the birth certificate of my child and I should bring that with me to the EPI centre for the next vaccination.

'After a week, when I went to collect my child's birth certificate, the Union Parishad chairman handed over the birth certificate and said, "Preserve this certificate carefully. It is a valuable document; it will be useful for the [entire] life of the child." I was surprised at what he said. He explained, "To get him admitted into school, prove his age, get a passport and many other services like these in the baby's life, it [the birth certificate] would be necessary. Most important[ly] … a baby achieves the first-time state recognition with his birth registration number."

'Now I can understand the benefits as well as importance of the birth registration of a baby'.

Key factors to success

The Kaliganj Model resulted in a much-improved rate of total birth and death registration and notifications within the 45-day period. This is shown by the significant increase in timely birth and death registration at the local registry office between 2015–16 and 2016–17. **After introduction of the Kaliganj Model in August 2016, the rate of births registered within 45 days improved by 33% compared with the previous year.**

The Kaliganj Model was a collaborative initiative involving many stakeholders: community members, local leaders, HAs and FWAs, the local birth and death registrar and Union Parishad staff, as well as other key health and family planning officials. In many respects, the pilot model was successful because of community ownership and intensive pre-planning. From the outset, it was agreed among stakeholders that to successfully introduce the new model, two factors would be very important:

1. Motivating and training the community health workers (ie the HAs and FWAs) on implementing the new birth and death notification and registration system, and raising community awareness of the importance of birth and death registration

2. Streamlining work processes and procedures within the local birth and death registry to ensure accurate, timely and complete birth and death notification and registration practices at the local registry level (**Box 2**). These were then optimally integrated into the national CRVS system.

Before commencing the pilot, the HAs and FWAs were trained in a series of motivational workshops on the overall aims and objectives of the Kaliganj Model, why birth and death registration is important and how timely and complete birth and death registration and notification would bring both short and long-term benefits for the local people and the country. The motivational workshops also involved engaging with the HAs and FWAs on the best way to work with concerned family members, and how the HAs and FWAs could optimally motivate local community members to register a birth or death within the 45-day time frame. Training sessions involved upskilling HAs and FWAs on how to correctly fill in the birth or death registration application forms.

Not only were the HAs and FWAs trained and motivated around the birth and death registration process, so too were the local leaders of Kaliganj Upazila. Motivational workshops were held on the importance of birth and death registration with local leaders, including with the municipality's mayor, local councillors and community members. High-level officials were also present, such as the Civil Surgeon and Deputy Director of Family Planning for the Gazipur District. Such officials added much value and legitimacy by addressing the workshop's attendees on the importance of birth and death registration.

Figure 9: Family members from Kaliganj with a death certificate of a deceased family member (used with permission)
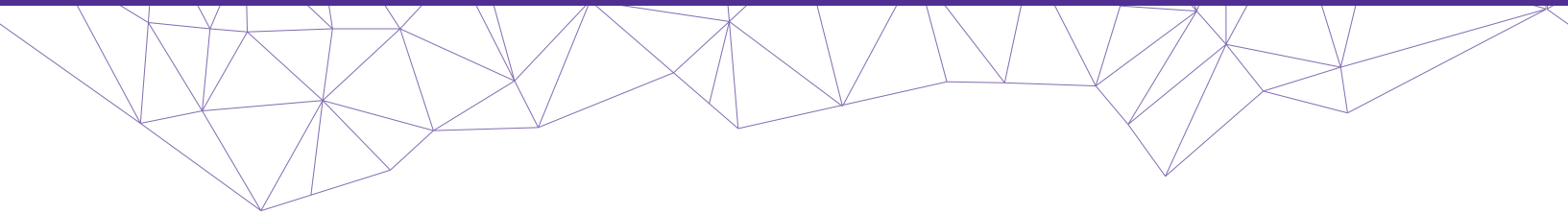
Intervention: Introducing VA at the community level to determine cause of death

The majority of deaths are not registered; those that are registered often have poor-quality certification of COD.

In Bangladesh, only 15% of deaths occur in health facilities, such as hospitals, and even these are not necessarily registered. This means that 85% of deaths occur in the community, and most of these deaths are not officially registered by the Office of the Registrar General on Births and Deaths. Even when deaths are officially registered, if the COD was not certified by a physician according to international standards (ie MCCOD to ICD-10 standards), the quality of the information on COD is likely to be of limited or no value from a statistical and public health perspective. This is highly problematic: high-quality reliable COD data are crucial for evidence-based policy and practice. COD information is critical for countries and their partners for effective health policy, planning and resource allocation. Gaps in mortality data create major obstacles to understanding and addressing public health concerns.[10]

In Bangladesh, where most deaths occur in the community and are not medically certified by a physician, VA becomes an important method for producing policy-relevant statistics on the distribution of COD in a population (**Box 3**). A VA pilot intervention was introduced at Kaliganj Upazila in the Gazipur District in Bangladesh in January 2017. This pilot initiative was part of the Technical Support Project for CRVS System Improvement in Bangladesh that began in mid-2016 and is overseen by the National CRVS Implementation Committee. VA is a method for collecting information about a deceased individual's signs and symptoms prior to death from their family or next of kin, and interpreting these to diagnose the likely or most probable COD.[11] The VA process consists of three basic steps:

1. Setting up an interview by a trained VA staff member at the household (or another appropriate place).

2. Conducting a structured interview to collect information on signs and symptoms of illnesses/events that the deceased suffered before death.

3. Interpreting the interview data to diagnose the most probable COD.[12]

10 AbouZahr C. Verbal autopsy: who needs it? *Population Health Metrics* 2011; 9:19.

11 Solemon N, Chandramohan D, Shibuya K. Verbal Autopsy: current practices and challenges. *Bulletin of the World Health Organization* 2006; 84:239-245.

12 de Savigny D, Riley I, Chandramohan D, et al. Integrating community based verbal autopsy into civil registration and vital statistics (CRVS): system-level considerations. *Global Health Action* 2017; 10: 1272882.

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Box 3: The importance of verbal autopsies

Accurate medical certification of cause of death (MCCOD) is key for producing reliable mortality data, which health departments need for evidence-based policy and planning efforts.

In many countries, including Bangladesh, most deaths occur outside hospitals – that is, in the home or in areas without physicians – or in health facilities with limited diagnostic capacity. It is important that countries ensure these deaths are captured and do not go unregistered and unreported.

When people die outside of hospitals, it can be difficult to know what they died from. To help overcome this information gap, verbal autopsy (VA) can be implemented.

VA is a method for determining the most likely COD based on information collected from caregivers or family members about the signs and symptoms experienced by the deceased in the period before they died. VA is an important means to support generation of policy-relevant information on cause-specific mortality fractions in a population and is the only viable method of doing so when MCCOD is not an option.

Countries can use VA to categorise causes of death and to identify social and health system failures related to these causes. VA is a cost-effective tool for filling the gaps in mortality data.[13]

The VA intervention piloted in Kaliganj Upazila

VA training included questionnaire content, sensitivity, how the data can be used, and managing IT.

The VA pilot was to be delivered by HAs, the domiciliary community-level health workers in the Upazila Health and Family Planning Office of the Kaliganj Upazila, which falls under the jurisdiction of the Director General of Health Services (DGHS). The project therefore began with HA training, with technical support provided by BD4H. Training sessions focused on defining VA and explaining why VA data are important in healthcare policy and planning, VA questionnaire content, and how to sensitively administer and manage a VA interview with potentially grieving community members. Training sessions also involved a digital component; HAs learnt how to use tablets to collect responses to the VA questionnaire and how to transmit the data to the Management Information System (located in the DGHS) and to the open-source data kit (ODK) server.[14] HAs were also involved in field testing of their tablets to identify challenges with use of the tablet and/or VA questionnaire.

The VA pilot was rolled out in Kaliganj Upazila between January and June 2017. Similar to the HAs involvement in the Kaliganj Model for birth and death registration, the HAs helped families to apply for registration of the death of the deceased by obtaining the death registration application form, helping families fill this in, and supporting the submission of the form to the civil registrar within 45 days of occurrence of the vital event. The death would subsequently be officially registered, and the certificate issued by the chairperson of the Union Parishad.

Under the pilot, the registrar of the local Union Parishad provided the designated HA with the decedent's unique death registration ID number and address for the interviewer

13   Hernández B, Ramírez-Villalobos D, Romero M, et al. Assessing quality of medical death certification: concordance between gold standard diagnosis and underlying cause of death in selected Mexican hospitals. *Population Health Metrics* 2011; 9:38.

14   For more information on ODK technologies, please see: https://opendatakit.org/about/.

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to conduct a VA interview. All community deaths in Kaliganj Upazila registered from July 2016 to June 2017 were reviewed by VA interview. To achieve this, the HA contacted family members or caretakers of the deceased. After explaining the purpose of the VA interview, and on successfully encouraging the next of kin to engage in the VA interview process, the HA would attend the decedent's home at the scheduled interview time and sensitively conduct the VA interview, using the tablet to which the VA questionnaire had been uploaded.[15] Afterwards, the HA would transmit the VA questionnaire data to the ODK server. Trained data management teams in the Management Information System department subsequently downloaded the VA data and analysed the information using SmartVA software.

> Each registered death was allocated a unique death registration ID number before a VA interview could take place.

For quality assurance purposes, HA interviewers were randomly accompanied into the field by their supervisors, a health inspector or assistant health inspector. In addition, periodically the COD information digitally collected by the HAs would be randomly checked and verified by physicians from the Kaliganj Health Complex.

Key factors to success

> Findings from the VA pilot revealed patterns of COD in the community for the first time.

The VA pilot resulted in 1728 VA interviews being completed during the six-month roll-out. Findings from the VA pilot revealed, for the first time, the main causes of death in the Kaliganj Upazila community for different age groups. The COD data generated from the VA interviews found the main causes of death in the community, among all age groups, are non-communicable diseases and injury. For instance, in the adult population, the highest proportion of total deaths was due to stroke and ischaemic heart disease, whereas for children it was drowning, and the dominant COD among neonates was meningitis or sepsis. This information is crucial for helping local and regional health managers and planners to deliver better, targeted and cost-effective healthcare and preventive healthcare services to the community.

The findings in the pilot were so impressive that the VA interview process, led by HAs, will be introduced and replicated in the whole Gazipur District in coming years. The CRVS Technical Support Project will ensure that while the VA process in scaled up in Gazipur, its effectiveness and efficiency is closely monitored by way of ongoing examination of plausibility of COD distribution, phase-by-phase evaluation and costing analyses.

The key factor for success in the pilot was the training and involvement of HAs, who could then drive the engagement and involvement of families in the community. In addition, the use of new technology in the form of tablets allowed data to be easily collected and uploaded to the CRVS system.

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Figure 10: A health assistant conducting a verbal autopsy interview with family members of the deceased (used with permission)

Intervention: Introduction of medical certification of cause of death in four hospitals

Another intervention that formed part of the Technical Support Project was the introduction in major hospitals – for the first time in Bangladesh – of the World Health Organization (WHO) International Form of Medical Certification of Cause of Death. This was in conjunction with the Ministry of Health and Family Welfare's policy decision to implement the WHO Form for MCCOD in health facilities throughout Bangladesh. Introducing MCCOD into Bangladesh has institutionalised an important, internationally recognised system (based on the ICD-10) for determining causes of deaths in health facilities where physicians are available.

Introduction and pilot roll-out of the certificates occurred in January 2017. MCCOD was subsequently piloted in four hospitals in the Dhaka area, with the strong support of hospital administrators and physicians. MCCOD training, supported by BD4H, upskilled 1350 Bangladeshi physicians in MCCOD, including 20 physicians trained as MCCOD 'master trainers'. In addition, training in ICD-10 mortality coding was provided as part of an initiative to develop a new cadre of statistical coders for cause of death analysis. So far, close to 2000 medical certificates of COD have been completed in all four pilot hospitals, and the certificates are currently with the Management Information System department in the DGHS undergoing quality review and data analysis.

Figure 11: Physicians attending the 'master trainers' session on medical certification of cause of death (used with permission)

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Next steps: Moving forward

The achievements of the Technical Support Project for CRVS System Improvement in Bangladesh, particularly in such a short amount of time, are highly encouraging: CRVS system improvement can already be seen.

A second phase of CRVS systems improvement is already being undertaken by the Technical Support Project, with ongoing support from the D4H and DFAT. The second phase of CRVS systems improvement will involve:

- Expanding the successful blueprint of the Kaliganj Model to improve completeness and timeliness of birth and death notification and registration within 45 days into other parts of the country

- Expanding the introduction of VA for community deaths into other areas in the Gazipur District

- Embedding the practice of MCCOD into more Bangladeshi health services and tertiary health institutions.

In moving forward, Bangladesh acknowledges it will need additional IT technical knowledge and expertise to meet the growing IT-related challenges for secure, digitised CRVS systems.

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Related resources and products

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Library
https://crvsgateway.info/library

Action guide on improving the quality of cause of death data in hospitals. CRVS summaries.

CRVS country overview: Bangladesh. CRVS summaries.

CRVS systems need well-functioning civil-registry offices. CRVS summaries.

Intervention: Automated verbal autopsy. CRVS summaries.

Intervention: Improving registration practices. CRVS summaries.

Intervention: Medical certification of cause of death. CRVS summaries.

SmartVA: Interviewer's manual. CRVS resources and tools.

SmartVA: Technical user guide (V1.0). CRVS resources and tools.

Strategies for improving the quality of cause of death data in hospitals. CRVS development series.

Strengthening CRVS systems through effective legislation. CRVS development series.

The importance of routinely measuring birth and death registration completeness. CRVS summaries.

Understanding CRVS systems: The importance of process mapping. CRVS development series.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Learning Centre
https://crvsgateway.info/learningcentre

Topic 3: CRVS processes.

Topic 4: Cause of death in CRVS.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Courses
https://crvsgateway.info/courses

Medical certification of cause of death.

SmartVA.

Further reading

AbouZahr C. Verbal autopsy: who needs it? *Population Health Metrics* 2011; 9:19.

de Savigny D, Riley I, Chandramohan D, Odhiambo F, et al. Integrating community based verbal autopsy into civil registration and vital statistics (CRVS): system-level considerations. *Global Health Action* 2017; 10(1): 1272882.

Gouda HN, Flaxman AD, Brolan CE, Joshi R, et al. New challenges for verbal autopsy: Considering the ethical and social implications of verbal autopsy methods in routine health information systems. *Social Science and Medicine* 2017; 184: 65-74.

Soleman N, Chandramohan, Shibuya K. Verbal autopsy: current practices and challenges. *Bulletin of the World Health Organization* 2006; 84: 239-245.

Notes

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Applying country experiences and knowledge

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

Civil Registration and Vital Statistics partners:

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