



**Bloomberg
Philanthropies**  **DATA FOR
HEALTH INITIATIVE**

CRVS country report

Sri Lanka: Strengthening
the quality and availability
of mortality statistics

July 2018





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

CRVS course prospectuses

These resources outline the context, training approach, course content and course objectives for the suite of CRVS trainings delivered through the Bloomberg Philanthropies Data for Health Initiative. Each course focuses on a specific CRVS intervention or concept, and is designed to support countries to strengthen their CRVS systems and data.

CRVS Fellowship reports and profiles

The CRVS Fellowship Program aims to build technical capacity in both individuals and institutions to enhance the quality, sustainability and health policy utility of CRVS systems in Fellows' home countries. *Fellowship reports* are written by Fellows as a component of the program, and document, in detail, the research outcomes of their Fellowship. *Fellowship profiles* provide a summary of Fellows' country context in relation to CRVS, an overview of the Fellowship experiences, the research topic and the projected impact of findings.

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These analytical and evaluative resources, generated through the Initiative, form a concise and accessible knowledge-base of outcomes and lessons learnt from CRVS initiatives and interventions. They report 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. These resources have a strong empirical focus, and are intended to provide evidence to assist planning and monitoring of in-country CRVS technical initiatives and other projects

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CRVS country reports

CRVS country reports describe the capacity-building experiences and successes of strengthening CRVS systems in partner countries. These resources describe the state of CRVS systems-improvement and lessons learnt, and provide a baseline for comparison over time and between countries.

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Specific, technical and instructive resources in the form of *quick reference guides*, *user guides* and *action guides*. These guides provide a succinct overview and/or instructions for the implementation or operation of a specific CRVS-related intervention or tool.

CRVS tools

Interactive and practical resources designed to influence and align CRVS processes with established international or best-practice standards. 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.

Published by the University of Melbourne, Civil Registration and Vital Statistics Improvement, Bloomberg Philanthropies Data for Health Initiative.

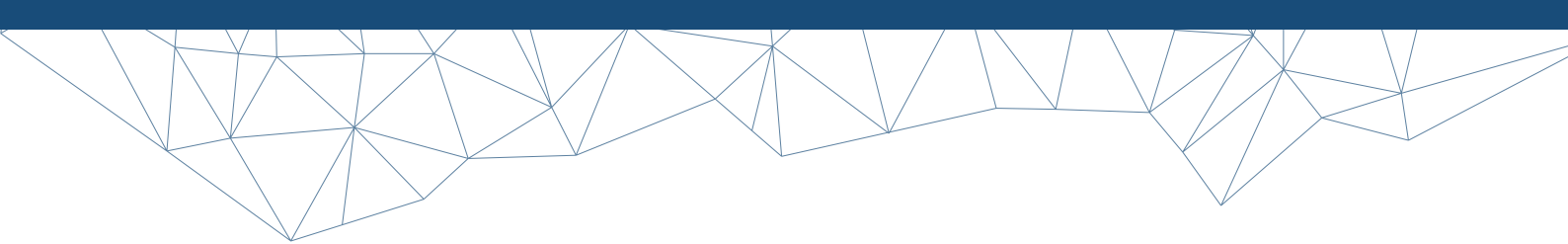
Melbourne School of Population and Global Health
Building 379
207 Bouverie Street
Carlton, VIC 3053
Australia

CRVS-info@unimelb.edu.au
www.mspgh.unimelb.edu.au/dataforhealth

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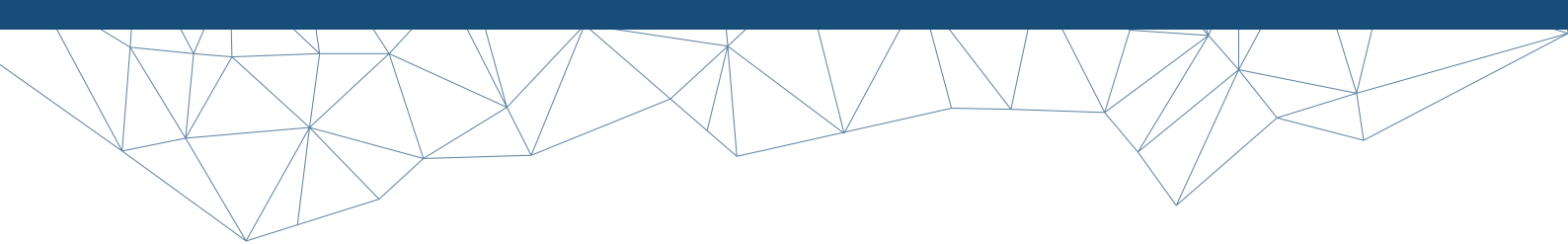
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Contents

Acknowledgements	2
Abbreviations	4
Key terms	4
Civil registration and vital statistics in Sri Lanka	5
System for the registration of deaths	7
CRVS strengthening activities occurring in Sri Lanka	8
Improving the quality of mortality statistics	8
Medical certification of cause of death	9
Automated verbal autopsy	11
Next steps: Maintaining the momentum for CRVS system improvement	15
Related resources and products	16
University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Library	16
University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Learning Centre	16
University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Courses	16
Further reading	17



Abbreviations

ANACONDA	Analysis of Causes of (National) Deaths for Action
ADR	Additional Death Registrar
D4H	Data for Health
COD	cause of death
CRVS	civil registration and vital statistics
HISL	Health Information Society of Sri Lanka
ICD	International Statistical Classification of Diseases and Related Health Problems
MOH	Ministry of Health
PHM	public health midwife
SDG	Sustainable Development Goal
UoM	University of Melbourne
VA	verbal autopsy

Key terms

Cause of death:	refers to 'all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstance of the accident or violence which produced any such injuries' (Twentieth World Health Assembly, 1967).
Community deaths:	refer to those deaths that take place outside of a formal health facility (such as at home, at the workplace, while in transit) and as such, are not attended by a medical physician.
Unusable code:	(also referred to as 'garbage code'). Any code that cannot or should not be an underlying cause of death, such as septicaemia, senility, or headache; a cause that belongs in some other part of the morbid sequence of events leading to death; or a cause of death that is insufficiently specified.
Underlying cause of death:	is 'the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury' (World Health Organization, 1994).
Verbal autopsy:	is a structured interview carried out with family members and/or caregivers of the deceased to elicit signs and symptoms and other important information which can be used to assign a probable underlying cause of death.



Sri Lanka: Strengthening the quality and availability of mortality statistics

This *CRVS country report* outlines the strategy for improving the quality and availability of mortality statistics in Sri Lanka, which is built on two main pillars: improving the quality of medical certification of cause of death for facility deaths; and implementing automated verbal autopsy to ascertain probable cause of death for community deaths. Through these prioritised interventions, a significant shift in the quality of vital statistics produced through the civil registration system is expected.

-
- **Civil registration and vital statistics in Sri Lanka**
 - **Registration of deaths**
 - **CRVS system-strengthening activities**
 - **Medical certification of cause of death**
 - **Automated verbal autopsy**
 - **Next steps: maintaining momentum**
-

Sri Lanka has a well-established CRVS system with very high completeness rates for births and deaths.

Civil registration and vital statistics in Sri Lanka

Sri Lanka is an island-nation located in the Indian Ocean, with a population of approximately 20 million people (**Figure 1**). The country has promising health statistics, with a maternal mortality rate of 26.8 per 100,000 live births; infant mortality rate of 8.2 per 1,000 live births; and a neonatal mortality rate of 5.8 per 1,000 live births.¹ Positively, Sri Lanka's universal health care system extends free healthcare to all citizens at the point of delivery, which has brought the country's health indicators up to the level of developed countries in the Asian region.² Sri Lanka also has a well-established civil registration and vital statistics (CRVS) system resulting from its British colonial legacy, with the registration of births, deaths and marriages a firmly established practice in the country.³ In fact, the country's civil registration system has very high completeness rates for both births (97%) and deaths (100%).⁴

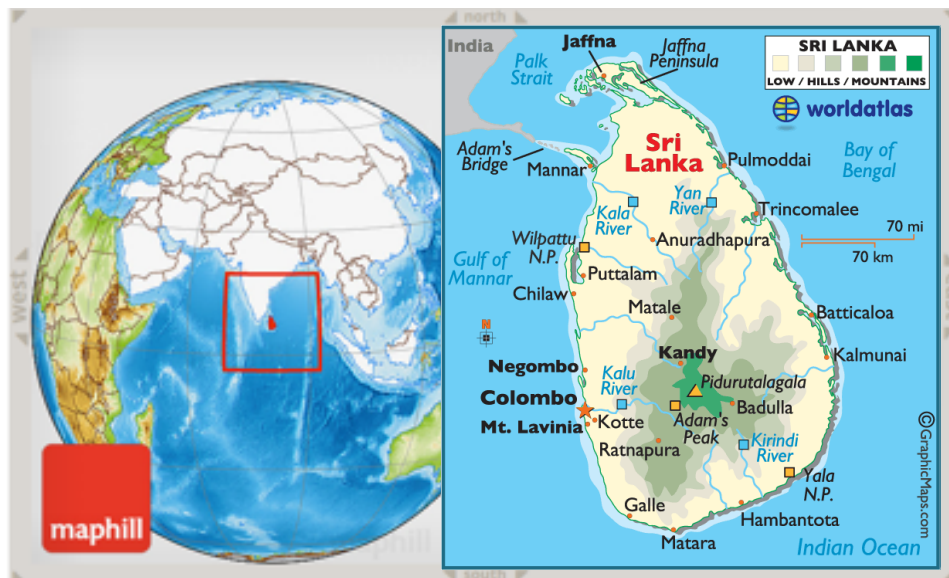
1 Ministry of Health Sri Lanka. *Annual Health bulletin Sri Lanka* 2015. Colombo, Sri Lanka: Ministry of Health; 2017.

2 World Health Organization. *WHO Country Cooperation Strategy Sri Lanka, 2012-2017*. Geneva, Switzerland: WHO; 2017.

3 Gaminirathna KHW. *Trends in Causes of deaths in Sri Lanka: 1971-1979*. Colombo, Sri Lanka: Population Information Centre, Ministry of Plan Implementation; 1984.

4 Ministry of Health, Nutrition and Indigenous Medicine and Registrar General's Department. *Bloomberg Data for Health (D4H) Initiative CRVS Work Plan*. Unpublished; 2016.

Figure 1: Map of Sri Lanka

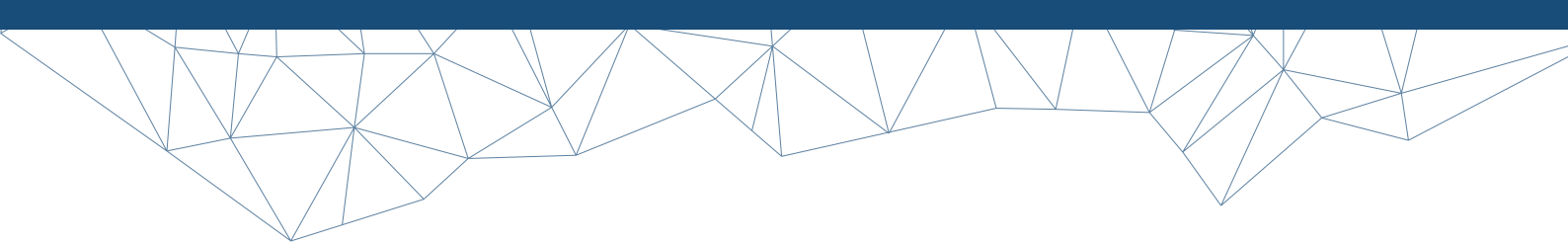


Source: Adapted from World Atlas, available at worldatlas.com/webimage/countrys/asia/lgcolor/lkcolor.htmpe, and Maphil, available at maphill.com/sri-lanka/location-maps/physical-map/highlighted-continent/entire-continent

The quality of mortality statistics produced by the civil registration system is low.

Despite the country’s excellent level of registration completeness, the quality of Sri Lanka’s mortality statistics produced by the civil registration system is low and this has resulted in the nation having a weaker CRVS system than expected, as reflected in the country’s low Vital Statistics Performance Index (0.356 in 2006) (**Box 1**).⁵ This compromises the Sri Lankan Ministry of Health’s access to accurate and reliable cause of death data for informed, evidence-based health policy and planning purposes. Encouragingly, both the Ministry of Health and the Registrar General’s Department are aware of this and are taking steps to rectify the situation, as demand for accurate and timely mortality data by age, sex, and cause both nationally and sub-nationally are on the rise.

⁵ United Nations Children’s Fund. Sri Lanka Statistics. Available at: nicef.org/infobycountry/sri_lanka_statistics.html#118



Box 1: The Vital Statistics Performance Index

The Vital Statistics Performance Index (VSPI) is a summary measure of the performance of vital statistics systems in generating reliable mortality data. VSPI scores range from 1 (excellent) to 0 (very poor). It includes six dimensions of system performance as measured through:

- Quality of cause of death reporting.
- Quality of age and sex reporting.
- Internal consistency.
- Completeness of death reporting.
- Level of cause-specific detail.
- Data availability/timeliness.⁶

The registration of vital events is decentralised, with many access points throughout the country

System for the registration of deaths

Sri Lanka's CRVS history spans some 150 years. In 1867 the Registrar General's Office was established under the Ministry of Public Administration and Home Affairs to register vital events.⁷ The Birth and Death Registration Act was formulated sometime later in 1951, coming into force in 1954. The Birth and Death Registration Act charged Sri Lanka's Registrar General with responsibility for the registration of births, deaths and stillbirths in Sri Lanka and to oversee all delegated government personnel engaged in carrying out the provisions of the Act. Importantly, the law directed Sri Lankan citizens to register the death event before a burial could lawfully take place. Government-managed cemeteries also request that families provide them with a death certificate that includes a stated cause of death to progress lawful disposal of the deceased's body.

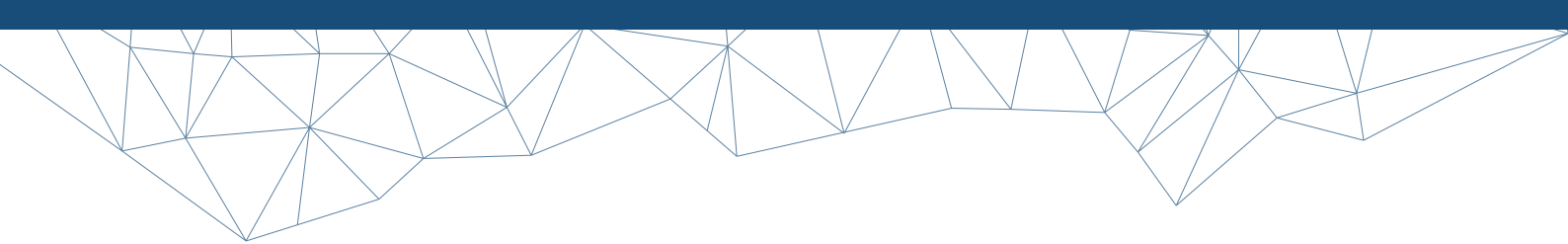
Currently, because the registration of vital events has become decentralised and is now under the control of district and divisional authorities, families can obtain the death certificate (at no cost) from the Registrar of Births and Deaths in their village. The death certificate is provided to the family by the local Registrar of Births and Deaths when the family provides proof of death, in the form of a death declaration from the hospital for health facility deaths, or a death notification completed by the Village Officer ("Grama Niladhari") for community deaths.⁸ The Additional District Registrars at district level are then further tasked by the Registrar General to closely monitor that all deaths in their district (both hospital and community deaths) are registered with the local Registrar of Births and Deaths.

The availability and accessibility of the Registrar of Births and Deaths throughout the country, the ability for families to obtain the death certificate at no cost, combined with law directing that a burial or cremation cannot occur without a death certificate (enforced by government-run cemeteries), have all contributed to the impressive high level of death registration completeness in Sri Lanka.

6 Phillips DE, Lozano, R, Naghavi M, et al. A composite metric for assessing data on mortality and causes of death: the vital statistics performance index. *Population Health Metrics* 2014; 12:14.

7 Gaminirathna KHW. *Trends in Causes of deaths in Sri Lanka: 1971-1979*. Colombo, Sri Lanka: Population Information Centre, Ministry of Plan Implementation; 1984.

8 Sri Lanka Birth and Death Registration Act of 1954. An act to amend and consolidate the law relating to the registration of births, deaths and still-births. Part V Registration of Deaths and Still-births in certain areas.



CRVS strengthening activities occurring in Sri Lanka

The D4H Initiative is working with 16 countries and two cities to improve CRVS systems.

High-level political support for CRVS improvement in Sri Lanka is a key reason for the country’s drive to achieve its commitments under the CRVS Decade in Asia and the Pacific 2015-2024,⁹ and to achieve the Sustainable Development Goal (SDG) 2030 Agenda. To achieve the SDGs, especially the health goal (SDG 3: Ensure healthy lives and promote wellbeing for all at all ages), accurate mortality data are needed from the country’s CRVS system.¹⁰

Sri Lanka’s commitment to CRVS system strengthening is significantly enhanced by its involvement in the Data for Health (D4H) Initiative, a sixteen-country and two-city initiative for CRVS systems strengthening and capacity building. On joining D4H in 2015, a Technical Working Group was formed to guide the implementation of the selected improvement activities. This high-level Technical Working Group comprises staff with diverse experience and knowledge on CRVS from the Ministry of Health and Registrar General’s Department, including consultant community physicians, consultant surgeons, consultant forensic pathologists, statisticians, as well as the Assistant Registrar General.

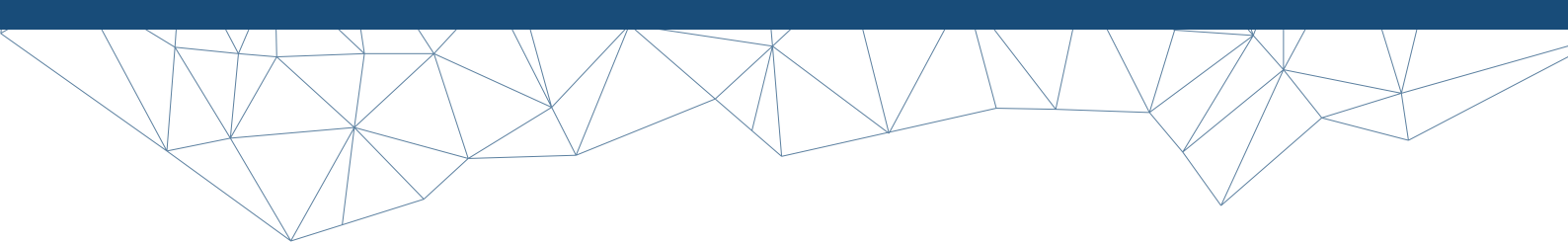
Figure 2: The Director General of Health Services addressing CRVS stakeholders, and CRVS Technical Working Group meeting (used with permission)



Improving the quality of mortality statistics

There are two main challenges in regard to the quality of cause of death data in Sri Lanka. Firstly, all deaths that occur outside of hospital settings (ie deaths that occur at home or in the community) are not medically certified by doctors but by non-medically trained staff (such as coroners and Registrars of Births and Deaths), and over half of all deaths in Sri Lanka occur outside of hospitals.¹¹ Secondly, the underlying cause of death is not accurately recorded for many of the deaths certified in health facilities by doctors. For instance, one study found that 16% of doctors at a Sri Lankan hospital used “cardiac arrest” and other ill-defined or poorly specified causes, which cannot be coded (and thus used) for statistical purposes.¹² The poor quality of medical certification (**Box 2**) - in Sri Lanka and in many countries, elsewhere in the world - is usually owing to the fact doctors do not receive any training either in medical school or as part of their continuing professional medical education on medical certification.¹³

9 Ministerial Declaration to ‘get everyone in the picture’ proclaimed the ‘Asian and Pacific CRVS Decade’ for 2015–2024, and was adopted by the Ministerial Conference on CRVS in Asia and Pacific on 28 November 2014 in Bangkok, Thailand.
10 Department of Census and Statistics. Status of Sustainable Development Goals Indicators in Sri Lanka: 2017. Colombo, Sri Lanka: Department of Census and Statistics; 2017.
11 Dharmaratne SD, Jayasuriya R L, Perera BY, et al. Opportunities and Challenges for Verbal Autopsy in the National Death Registration System in Sri Lanka: Past and future. *Population Health Metrics* 2011; 9:21.
12 Fonseka W. A Study in the Quality and Coverage of Death Registration in a District of Sri Lanka. MD dissertation in Community Medicine, University of Colombo, Sri Lanka; 1996.
13 University of Melbourne. *Reducing barriers to the accurate medical certification of cause of death*. CRVS development series. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.



Box 2: What is medical certification?

Certification is the process physicians use to determine the underlying cause of death, that is, ‘the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury’.¹⁴ To correctly complete a medical certificate of death, the physician must identify the disease directly causing the death, and then trace the sequence of events back to the underlying cause of death. The physician must also enter other diseases or conditions contributing to the death.

Sri Lanka’s Technical Working Group on CRVS decided to improve the quality of mortality data through two main steps: first, by up-skilling Sri Lankan doctors in correct medical certification to improve the accuracy and overall quality of cause of death data generated in Sri Lanka’s hospitals; and second, to reduce the unusable cause of death data (for community deaths, or deaths that occur outside of hospitals) by introducing automated verbal autopsy (VA) to ascertain probable causes for these deaths.

Training in medical certification of cause of death was carried-out to improve the accuracy and quality of mortality statistics.

Medical certification of cause of death

Five hospitals in Sri Lanka’s western province that used the new death declaration form (Form B33) were selected to field-test hospital-based training in medical certification. In collaboration with D4H, this resulted in:

- Eighteen ‘Master Trainers’ and close to 300 doctors across the five pilot hospitals trained in medical certification.
- Six months after the training, the content and accuracy of a selection of medical certificates in the five pilot hospitals were evaluated. Encouragingly, the evaluation results found a 30% improvement on average in certificates without errors in all five hospitals.
- After this pilot and evaluation activity, further revisions were made to the electronic medical certificate assessment tool,¹⁵ to provide more specific guidance on the areas in need of review as part of refresher training.

14 University of Melbourne. *Handbook for doctors on cause of death certification*. CRVS resources and tools. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.

15 Rampatige R, Gamage S, Richards N, et al. *Assessing the quality of death certificates: Guidance for the rapid tool*. CRVS resources and tools. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2018.

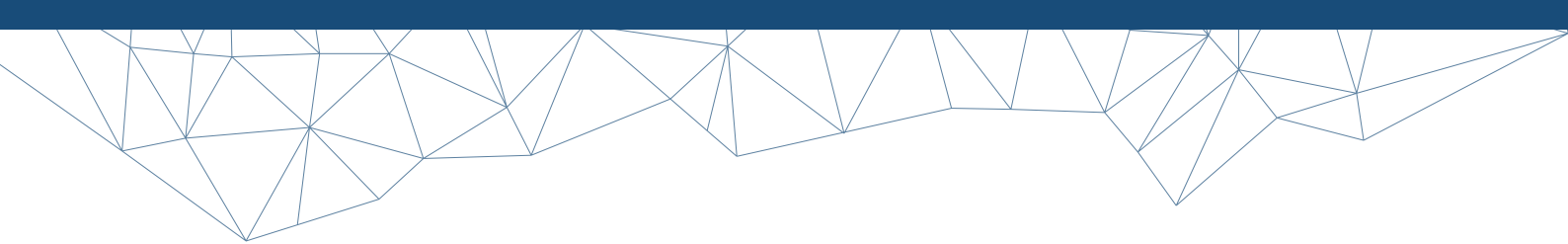


Figure 3 Sri Lankan doctors receive training on medical certification of cause of death (image used with permission)



A cause of death app was developed to assist doctors when certifying.

In addition to physician training on medical certification, fifteen mortality coders from the Vital Statistics Unit in the Registrar General's Department were trained in ICD-10 coding. A 'how to' manual on correctly certifying deaths to ICD-10 standards using the new B33 Form was subsequently developed by D4H together with the Ministry of Health and the Registrar General's Department. This manual was published and disseminated by the Sri Lankan Government in 2018.

An interactive educational mobile phone application, or "COD App", was also developed by the Ministry of Health, Health Informatics Society of Sri Lanka with support of D4H. This new app is compatible with all Android devices. The purpose of the COD App is to improve the accuracy of medical certification by doctors. The key features of the new COD App are that:

- It is an easy-to-use tool that doctors can refer to when they are in doubt certifying the causes of death.
- It is an innovative and practical solution given the large number of practicing doctors in Sri Lanka, their extensive geographic spread, and the wide use of smart phones among them.
- The COD App will be cost free for doctors to download from the Ministry of Health's website.
- Once downloaded, internet connection is not necessary for the COD App to be accessed and re-used.

Figure 4 The COD App won first place at the Health Education and Health Promotion category at the Second Commonwealth Digital Health Conference and Awards held in Colombo, Sri Lanka, 2017 (image used with permission)



Automated verbal autopsy

The second aim of Sri Lanka’s Technical Working Group on CRVS is to improve quality of mortality statistics by reducing the amount of unusable cause of death data for community deaths (excluding those referred to the Coroner) through introducing automated verbal autopsy (VA) (SmartVA) to ascertain the probable cause of death (**Box 3**).

Box 3: What is automated verbal autopsy?

Verbal autopsy is a method for collecting information about an individual’s signs and symptoms prior to their death from their family or next of kin, and interpreting these to diagnose the likely or most probable cause of death (COD).¹⁶ The principal purpose of a VA is to describe the cause composition of mortality through the estimation of cause-specific mortality fractions (CSMFs). Verbal autopsy also serves as a cost-effective tool for filling the gaps in mortality data. Studies suggest that VA can provide population-level COD data similar in quality and reliability to MCCOD in hospitals.¹⁷

The VA process consists of three basic steps:

1. Setting up an interview by a trained VA staff member at the household level (or another appropriate place).
2. Conducting a structured interview to collect information on signs and symptoms of illnesses, and events that the deceased suffered before death.
3. Interpreting the interview data to diagnose the most probable COD (historically, this was done by physicians, however automated methods are now widely available).

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

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

Three Sri Lankan districts of Colombo, Kurunegala and Jaffna were selected to test the proposed new automated VA tool (Figure 5). These three districts were chosen because of their differing sociodemographic characteristics, and anticipated differing mortality profile (Table 1).

Data collection was performed by VA interviewers in seven selected MOH areas in the three districts. Public health midwives (PHMs) were selected by Sri Lanka's Technical Working Group as best-placed to be the VA interviewers and therefore pilot the automated VA roll-out. PHMs in Sri Lanka play an important role in the primary health care system covering every village in the country. Their home visits and community knowledge make them ideally suited for VA interviews with the family. They work under the supervision of a doctor acting as the Medical Officer of Health.

Figure 5 Map of Sri Lanka with districts

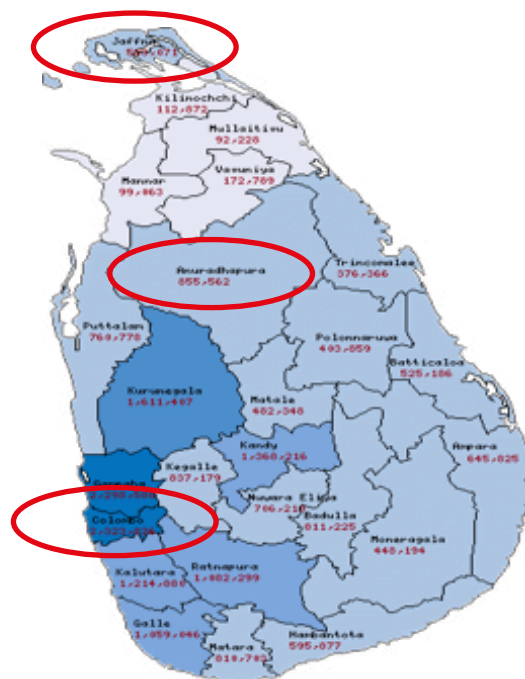


Table 1 Population characteristics of the three districts selected for VA pre-test

District	Selected MOH areas	Population (2015)	Expected number of deaths per year*	Expected number of community deaths per year*	Main language spoken
Colombo	Ratmalana Piliyandala	1,820,445	11,287	5,643	Sinhalese
Kurunegala	Ridigama Ibbagamuwa	1,223,322	7,585	3,792	Sinhalese
Jaffna	Nallur Kopai Uduwil	440,680	2,732	1,366	Tamil

*Note: Expected number of deaths were calculated based on estimated mid-year population of districts and the crude death rate (6.2 per 1000 population) of Sri Lanka for the year 2015. It was assumed that half of all the deaths would be community deaths.

Before the pilot VA interviews began in late 2016, the PHMs were trained in conducting VA interviews, using SmartVA.¹⁸ VA training was run at various local training centres by D4H technical personnel from the University of Melbourne, with intensive support from the Health Information Society of Sri Lanka (Table 2). Close to 150 PHMs were subsequently trained in VA data collection using SmartVA (Figure 6). The PHMs were supported and monitored in the field by public health nursing sisters and supervising PHMs. In addition, the SmartVA questionnaire were translated and tested in Sri Lanka's two main languages, Sinhalese and Tamil.

Figure 6 PHMs being trained in using tablets for VA data collection (image used with permission)



Table 2 Overview of training locations and number of PHMs trained, Sri Lanka

Training location	MOH areas covered by training	Number of PHMs trained	Date of training
Ratmalana	Ratmalana Piliyandala	18	December 2016
Ibbagamuwa	Ibbagamuwa Ridigama	26	December 2016
Kilinochchi*	Nallur Kopai Uduwil	85	January and February 2017
Dambulla*	Dambulla	18	December 2017
	Total	147	

*Note: PHMs from Kilinochchi and Dambulla did not participate in data collection.

18 University of Melbourne. *SmartVA*: Interviewer's manual. CRVS resources and tools. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2017.

Through verbal autopsy interviews, reliable data on the causes of community death were generated.

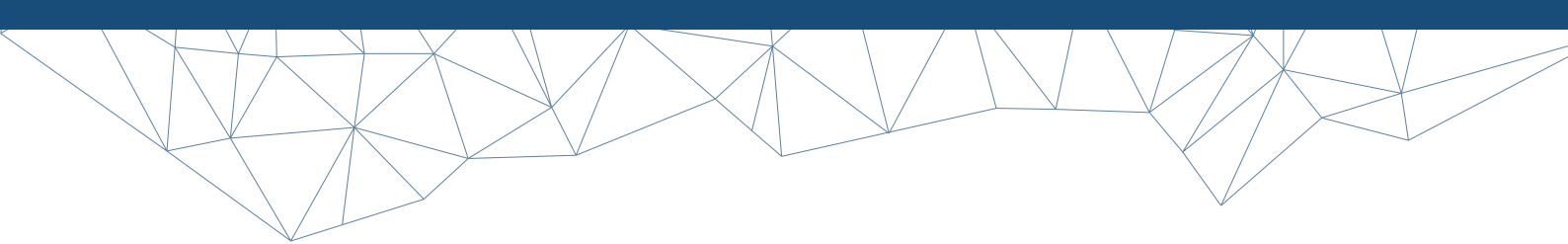
As part of the pre-test, a new link had to be established between the Additional District Registrars and the MOH to transfer, monthly, the name of the local households with deaths to facilitate the VA interviews. Obtaining the list of deaths from the Additional District Registrars, allocating the deaths to the PHMs for VA follow-up, as well as verification of administrative data and the completed VAs became the responsibility of the Development Officer at the office of the MOH.

Encouragingly, a total of 286 SmartVA interviews were completed in the three test-districts and sent to a central server at the Post Graduate Institute of Medicine, Colombo. Analyses of the VA data resulted in reliable, quality data generated on the disease profile for community deaths for the first time in Sri Lanka's history. Stroke, cancer, ischaemic heart disease, chronic respiratory diseases and diabetes were identified as the leading causes of deaths in the three districts. Surprisingly, the analyses also showed that most of community deaths occurred in decedents aged 70 years or above; much older than the average age of those who die in hospital. This finding is significant: Sri Lanka has an aging population, and health and social services need to be in place and of high quality to appropriately respond to emerging issues relating to older persons who die at home.

By conducting VAs on both prospective deaths and those that had taken place in the previous six months, it was possible to conduct a higher number of VA interviews as part of the pre-test phase. The evaluation meeting that took place three months after the pre-test showed that the process of using automated VA had worked, and that using the PHM as interviewers had been a good choice. The cause of death distribution obtained from the VAs looked plausible and the number of unknown causes acceptable.

Figure 7 Discussing the implementation of VA in Sri Lanka (image used with permission)





As part of the second phase of activities, a formal evaluation of the impact of the interventions will be carried-out.

Next steps: Maintaining the momentum for CRVS system improvement

The support of Sri Lanka's Technical Working Group for medical certification and VA was crucial in providing insight and advice on local circumstances and setting the path for improved cause of death data from hospital and community settings.

A second phase of CRVS systems improvement has now been planned based on formal evaluation of both the medical certification and SmartVA pilot activities. The second phase of CRVS systems improvement will continue to target improving cause of death data quality by scaling-up both activities and monitoring their impact. Sri Lanka's Technical Working Group, in collaboration with D4H, specifically plans to:

- Expand medical certification training for Sri Lankan doctors from five to 25 hospitals. This will occur by training a cadre of national 'Master Trainers'.
- Rapidly expand automated VA (SmartVA) beyond the three pilot-test districts.
- Institutionalise the training of PHMs on automated VA by training a cadre of VA 'Master Trainers'.
- Establish a national level monitoring mechanism for automated VA implementation in the Ministry of Health.



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: Sri Lanka. CRVS summaries.

Intervention: Automated verbal autopsy. 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.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Learning Centre

<https://crvsgateway.info/learningcentre>

Topic 4: Cause of death in CRVS. The value of cause of death data; Medical certification of cause of death; Automated verbal autopsy; Incorporating verbal autopsy into the civil registration and vital statistics system.

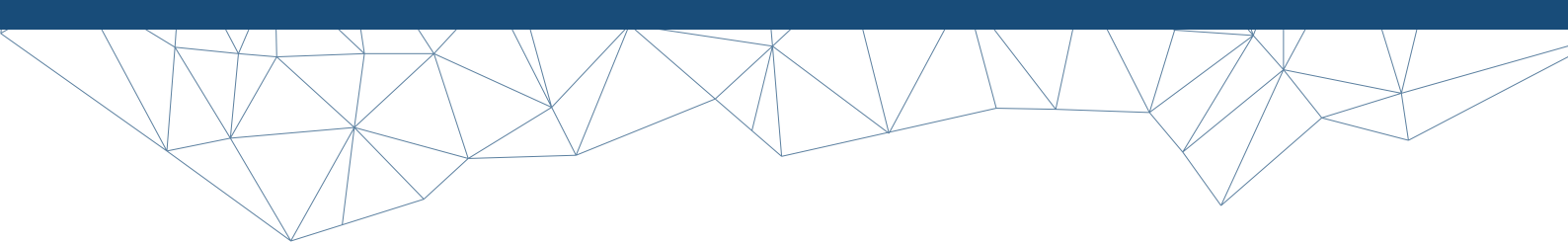
Topic 6: CRVS tools. Medical certificate of cause of death assessment tool; Automated verbal autopsy tools.

University of Melbourne, D4H Initiative, CRVS Knowledge Gateway: Courses

<https://crvsgateway.info/courses>

Medical certification of cause of death.

SmartVA.



Further reading

Gamage S, Rampatige R, Samakoon J, et al. *Assessing the production, quality and use of national vital statistics: a case study of Sri Lanka*. Queensland, Australia: Health Information Systems Knowledge Hub, School of Population Health, University of Queensland; 2009.

Jayasuriya RL, Dharmaratne SD, Gunasekara EM, Perera BY. 2010. Analysis of cause of death data in Sri Lanka. *In: 10th South East Asia Regional Scientific Meeting of the International Epidemiological Association, 25.05.2010. Colombo, Sri Lanka.*

Rampatige R, Gamage S, Peiris S, et al. Assessing the reliability of causes of death reported by the vital registration system in Sri Lanka: Medical records review in Colombo. *Health Information Management Journal* 2013; 42(3):20-8.

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:



For more information contact:

CRVS-info@unimelb.edu.au
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