CRVS Fellowship profile
Generating complete mortality statistics from hospital data in Myanmar

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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.

CRVS analyses and evaluations
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

CRVS best-practice and advocacy
Generated through the Initiative, CRVS best-practice and advocacy resources are based on a combination of technical knowledge, country experiences and scientific literature. These resources are 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 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.

CRVS technical guides
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.

Suggested citation

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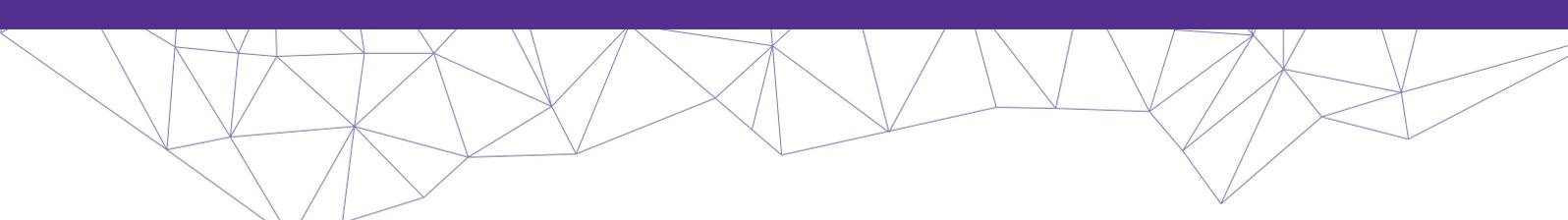
Fellowship profile: Generating complete mortality statistics from hospital data in Myanmar

From September to November 2019, May Thu Zaw from the Ministry of Health and Sports in Myanmar undertook a Civil Registration and Vital Statistics (CRVS) Fellowship through the Bloomberg Philanthropies Data for Health (D4H) Initiative at University of Melbourne (UoM), assessing the completeness of mortality data generated from hospitals. This profile provides an overview of country context in relation to CRVS, and documents May Thu Zaw's personal experiences and outcomes and the broader impact her Fellowship might have on improving the quality of mortality data in Myanmar.

Country context

In collaboration with the Bloomberg Philanthropies Data for Health (D4H) Initiative, Myanmar is engaged in efforts to improve its civil registration and vital statistics (CRVS) system, which is the best source of data on births, deaths, and causes of death (CODs).[1] In order to make effective health policy and programs, decision-makers rely on data produced by strong CRVS systems.[2] By committing to strengthen its CRVS system, Myanmar aims to ensure that everyone is counted in the civil registration system so that the vital statistics generated will reflect the health outcomes and needs of communities across the country.[3]

Myanmar's population of about 54 million, 70% of which live in rural areas, spreads across 15 states and regions (**Figure 1**).[4,5] The village is the smallest administrative unit, and several villages are grouped together into village tracts.[6] In turn, village tracts together with urban wards and towns are grouped into 325 townships.[6] Collections of these townships are organised into 67 districts, which then form a region or state.[6] Whilst states and regions vary in terms of population size and density, regions tend to have higher population sizes and densities than states.[6]

1   Cobos Muñoz, D., Sant Fruchtman, C., Renggli, S., deSavigny, D. CRVS innovations: Assessing the performance of CRVS systems. CRVS technical outcome series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2019.

2   Mukut MAA. Fellowship report: Evaluation of the 'Kaliganj Model' for proactive birth and death notification and registration. CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2019.

3   Setel, P., Macfarlane, S., Szreter, S. et al, on behalf of the Monitoring of Vital Events (MoVE) Writing Group. A scandal of invisibility: making everyone count by counting everyone. *The Lancet* 2007; 370:1569-1577.

4   The World Bank. Myanmar country data. The World Bank Group; 2019. Available from https://data.worldbank.org/country/myanmar

5   Mar, TZ. Fellowship profile: Developing a qualitative study protocol on VA interviewer experiences in Myanmar. CRVS country perspectives. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018.

6   Nixon, H., Joelene, C., Saw, K., Lynn, T., Arnold, M. State and Region Governments in Myanmar. The Centre for Economic and Social Development & the Asia Foundation. 2014. Available from https://asiafoundation.org/resources/pdfs/StateandRegionGovernmentsinMyanmarCESDTAF.PDF

Figure 1. Map of Myanmar (with states indicated)

Source: Ministry of Health and Sport (MOHS) and ICF. 2015-16 Myanmar Demographic and Health Survey (DHS) Key Findings; 2017. Available from https://www.aidsdatahub.org/myanmar-demographic-and-health-survey-2015-16-ministry-health-and-sports-mohs-myanmar-and-icf-2017

The CRVS system of Myanmar

In Myanmar, the two major CRVS stakeholders are the Central Statistical Organisation (CSO) and the Ministry of Health and Sports (MOHS).[5] Under the MOHS, basic health staff (BHS) like midwives routinely collect birth and death data,[5,7] which are then entered into the Health Management Information System (HMIS) and integrated into the CRVS system.[5] HMIS staff, in addition to providing technical support to other CRVS stakeholders in Myanmar, are responsible for data quality assurance, analysis of population-level COD distribution, and management of verbal autopsy (VA) data (**Box 1**). Birth and death data from the HMIS are then sent to the CSO, for compilation, coding, analysis, and dissemination via the annual statistical yearbooks.[7]

Improving vital statistics

A national law enacted in 2012 requires that families must report births and deaths to the local general administrative office within three days of the event's occurrence.[5] While this law provides a penalty for families failing to report the event within the three-day timeframe, the penalty is not enforced.[5] A general lack of enforcement for birth and death registration, combined with lack of awareness of the importance of registration (**Box 2**), has greatly contributed to Myanmar's issue of incomplete birth and death data.[7]

According to the CSO's 2016 and 2017 annual statistical yearbook, in 2014 Myanmar's birth registration completeness was 81%, whereas death registration completeness was 50% in 2015.[12] Because births must be certified in order for children to enrol in school, birth registration is more complete than death registration.[7] Registering deaths that occur in communities remains a challenge, as physicians or health staff are not always present to medically certify the cause of death (**Box 3**).

8   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.

9   Bloomberg Philanthropies Data for Health Initiative: Introducing automated Verbal Autopsy: Responding to technical and transcultural adaptation challenges. CRVS Development Series; University of Melbourne, August 2017

10   The University of Melbourne. The importance of routinely measuring birth and death registration completeness. CRVS summaries. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.

11   Andrade J. Estimating the completeness of birth and death registration in Ecuador. CRVS country perspectives. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne, and National Institute of Statistics and Census, Ecuador; 2018.

12   GBD 2017. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet 2018; 382:1789-858.

13   The University of Melbourne. Strategies for improving the quality of cause of death data in hospitals, CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2017.

14   Lomas HD, Berman JD. Diagnosing for administrative purposes: some ethical problems. Social Science and Medicine 1983; 17:241-244.

The CRVS Fellowship project

At the Myanmar MOHS, May Thu Zaw is the Deputy Director of the Planning Sector Division of the Department of Medical Services. As a physician, one of May's key duties is coordinating training sessions for hospital staff. With over 1000 hospitals under the Department of Medical Services, the Department aims to arrange training for a range of hospital staff – particularly physicians in public hospitals, who are in need of hands-on education and training – and focuses these sessions on MCCOD.

In Melbourne, May's Fellowship project was based on the assessment of completeness of reporting of deaths that occur in hospitals. She pointed out that although hospital utilisation – measured through bed occupancy rates – in Myanmar is high, the number of deaths reported in hospitals remains relatively low. As such, May aimed to provide a comprehensive assessment of hospital mortality in Myanmar. She did this by measuring, in three hospitals, the number of "signed and left" cases; that is, terminally ill patients who are discharged and eventually die in the community.

May's study found a high number of "signed and left" cases in the three hospitals. These deaths are not included in official hospital statistics and so should be eligible to have the cause of death assigned by a VA. However, her study found that most of the "signed and left" cases could not be matched to reported community death data or did not have a VA conducted to ascertain the cause of death.

Reflections: take-home lessons

Assigned CODs can vary

Reflecting on the challenges that arose during her Fellowship, May remarked that it was sometimes difficult to ascertain the COD for a given case due to discrepancies in diagnoses – a COD assigned via hospital discharge diagnosis, for example, was not always the same as a COD assigned through a VA interview for the same individual.

The need for further training

Whilst conducting literature reviews as part of her Fellowship, May came across some new information in the literature that surprised her – the issue of garbage codes. Deaths that are assigned an unusable or insufficiently specified underlying cause (or 'garbage') have no use in informing public health policy,[15] and May found that garbage coding presents a major challenge for Myanmar's CRVS system. Currently, May's department does not offer trainings that focus on garbage codes, so this new knowledge might shape the direction of future trainings in the years to come.

Learning to use ANACONDA

May commented on the utility of one of the new tools she had learned to use: the Analysis of Causes of National Deaths for Action, or ANACONDA, tool.[15] Designed to help users analyse the quality of mortality datasets, May was eager to use ANACONDA to learn about the quality of hospital COD data. She added that she could use ANACONDA to assess intermediate, antecedent, and underlying COD, and these insights into COD data quality would, in turn, shed light on the quality of medical certification practices – and other areas in need of improvement – in Myanmar.

Benefits for CRVS system development in Myanmar

Because there are 16 different departments involved in CRVS strengthening activities in Myanmar, staff from these departments frequently attend knowledge-sharing sessions. Upon her return to Myanmar, May plans to share her knowledge on ANACONDA during these sessions, meaning that her colleagues will benefit from what she has learned about assessing the quality of COD data in Myanmar. The skills developed throughout May's Fellowship will enable her and her colleagues to pinpoint which parts of Myanmar's CRVS system are functioning well and which parts need improvement, and will enable the country to continue building on its current progress.

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.

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