CRVS Fellowship profile
Assessing the quality of vital statistics in the Philippines

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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.

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Fellowship profile: Assessing the quality of vital statistics in the Philippines

Between July and October 2018, Majorie "Joy" Villaver, a supervising statistical specialist of the Philippine Statistics Authority (PSA), came to the University of Melbourne to assess the quality and completeness of birth and death registration, as well as the quality of cause of death data within the Philippines using the ANACONDA tool. This fellowship profile documents Joy's experiences while at Melbourne, including what she worked on, what she found, and what impacts this might have on improving the civil registration and vital statistics system in the Philippines.

Country context

> Over half of the Philippines' population lives in rural areas.

Joy is from the Philippines, an Asia-Pacific country committed to generating reliable vital statistics for health policy and planning. In collaboration with the Bloomberg Philanthropies Data for Health (D4H) Initiative, the Philippines is working to ensure that its population of over 100 million[1] – about 45 per cent of whom are living in urban areas – are counted in the country's civil registration and vital statistics (CRVS) system. The Philippines' population is spread out across an archipelago comprised of 7,641 islands,[2] 18 regions,[3] 81 provinces, 107 chartered cities, five independent component cities, and 33 highly urbanised cities[4] (**Figure 1**).

According to the *United Nations Human Development Report 2016*,[5] the Philippines Human Development Index (HDI) was classified as 'medium' in 2015, with a life expectancy of 69.2.[6] About two-thirds of all deaths in the Philippines are from non-communicable diseases.[7]

1   Republic of the Philippines Statistics Authority. Highlights of the Philippine Population 2015 Census of Population (POPCEN). Available at https://psa.gov.ph/content/highlights-philippine-population-2015-census-population

2   Republic of the Philippines National Mapping and Resource Information Authority, Department of Environment and Natural Resources. Administrator Tiangco welcomes 2017. Available at http://www.namria.gov.ph/list.php?id=1032&alias=administrator-tiangco-welcomes-2017&Archive=1

3   President of the Philippines. Executive Order No. 38: Revoking Executive Order No. 183 (S. 2015) which created a Negros Island region and for other purposes. 2017. Available at http://www.officialgazette.gov.ph/downloads/2017/08aug/20170807-EO-38-RRD.pdf

4   Republic of the Philippines Statistics Authority. Facts and Figures as of March 2018. Available at https://psa.gov.ph/system/files/PSGC%20Infographics_0.pdf

5   United Nations. Human Development Report 2016: Human Development for Everyone. 2016. Available at http://hdr.undp.org/sites/default/files/HDR2016_EN_Overview_Web.pdf

6   United Nations. UNDP Human Development Reports: Philippines Human Development Indicators. Available at http://hdr.undp.org/en/countries/profiles/PHL#

7   World Health Organization. Noncommunicable Diseases (NCD) Country Profiles: Philippines 2014. Available at https://www.who.int/nmh/countries/2018/phl_en.pdf

Figure 1 Map of the Philippines

Source: Adapted from World Atlas, available at https://www.worldatlas.com/webimage/countrys/asia/lgcolor/
phcolor.htm and Maphil, available at http://www.maphill.com/philippines/location-maps/physical-map/

> The Government of
> the Philippines has
> showed political
> commitment towards
> CRVS strengthening.

In November 2014, the Philippines became a signatory to the Ministerial Declaration for Universal Registration in Asia and the Pacific and signed up to UNESCAP's Regional Action Framework for Improving CRVS.[8,9] This action represented political commitment to CRVS system-strengthening at a high-level, as well as recognition that strong CRVS systems are critical for effective health policy- and decision-making. Whilst comprehensive assessments from 2009 onwards have indicated that the Philippines' CRVS system is well-functioning, there are aspects still in need of strengthening, particularly in areas of registration completeness, standardisation and computerisation of collected data.[5]

The CRVS system of the Philippines

The Civil Registration Law of 1930 (Act No. 3753) made civil registration a compulsory public service, and the civil registration system in the Philippines is decentralised at the municipal level, meaning that all cities and municipalities have a civil registry office for which they are responsible (according to the Local Government Code of the Philippines, Republic Act No. 7160).[5]

These civil registry offices forward duplicate copies of civil registry documents to the Provincial Offices of the Philippines Statistical Authority (PSA). The PSA Provincial Offices then transmit these documents to the PSA Central Office, which consolidates the data and generates vital statistics at the city, municipal, and national levels. The National Statistician is also the Registrar General and head of the PSA at the national level. The PSA is mandated by law to carry out civil registration in the country, and thus maintains responsibility for registration of births, deaths, and marriages (**Box 1**) as well as for issuing standards and regulations.[8]

8   Philippines Department of Health and Philippines Statistical Authority. *The Philippines: Bloomberg Philanthropies Data for Health Initiative Work Plan.* Unpublished; 2016.

9   United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Implementing the Regional Action Framework on Civil Registration and Vital Statistics in Asia and the Pacific. 2015. Available at www.getintthepicture.org/docs/Regional.Action.Framework.English.final.pdf

Box 1. What is registration completeness and why is it important?

Without reliable vital statistics, it is impossible to know where to focus improvement measures and potential CRVS interventions. A complete CRVS system is the best and most cost-effective source of routine, timely and detailed data on births, deaths and cause of death. However, globally, around one-third of births and one-half of deaths are not registered. In CRVS systems where not all births and deaths are registered, the accurate measurement of registration completeness should be a core function.[10]

The completeness of registration is defined as the percentage of actual births or deaths in a population that are registered. It is the number of registered births or deaths divided by the actual number of births or deaths in a population, for example:[11]

$$\text{Completeness of death registration (\%)} = \frac{\text{number of registered deaths}}{\text{actual number of deaths}} \times 100$$

Two electronic systems are used to computer CRVS data.

The Philippines uses two main electronic systems to computerise its CRVS data: the Philippines Civil Registration System (PhilCRIS) and the Decentralised Vital Statistics System (DVSS 2011). PhilCRIS is used primarily by local civil registrars to generate copies of vital statistics and data files that are then transferred to the PSA. The DVSS 2011 was created to accelerate and improve the production of vital statistics from civil registration records, and thus its main function is to collect data from each of the PSA Provincial Offices and process them at the central level. These two electronic systems have improved the quality and timeliness of data, but there is a need to scale up the systems nationally to all local government units, given that about one-third of all local civil registry offices are covered by PhilCRIS.[5]

Addressing completeness of birth and death registration

Birth registration coverage in the Philippines is high at 93.5 per cent. Death registration coverage, however, sits at 66 per cent, and only 35 per cent of these deaths have been medically certified **(Box 2)** and at least 15 per cent of these deaths have an ill-defined cause of death (COD) assigned.[8] Although the Philippines has been using the International Form of Medical Certificate of Death and ICD-10 coding, errors in death certificates and coding of COD are common.[5]

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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   The University of Melbourne. *A new method for estimating the completeness of death registration*. CRVS summaries. 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 of cause of death (MCCOD)?

When a patient dies in a hospital or health facility, a medical certificate of cause of death should be completed.[12] The medical death certificate is usually completed by a physician who attended to the patient or a physician who is familiar enough with the patient's medical history to confidently ascertain the COD.[13] To certify a death, the physician must first identify the disease or injury leading directly to death, and then trace back the sequence of events to determine the underlying COD.[10]

Although law mandates that all deaths have a COD assigned before they are registered, registration of community deaths remains a challenge.

By law, all deaths must have a COD assigned in order to be registered – for deaths occurring in health facilities, a physician will assign the COD. A medical record officer at the health facility fills in the death certificate and the family verifies this certificate. The certificate is then sent to the local health officer, who reviews, validates, and signs it before it is sent to a local civil registry.[5]

Given that about two-thirds of deaths in the Philippines occur outside of health facilities, however, registering community deaths remains a challenge.[5] In the case of a death in the community, the family must notify the barangay secretary who provides a 'notification' document. The family then takes this document to the local health officer, who assigns a probable COD based on interviews with family members and fills in the death certificate. The local health officer then signs and sends the certificate to the local civil registry office and provides the family with an official death certificate.[5]
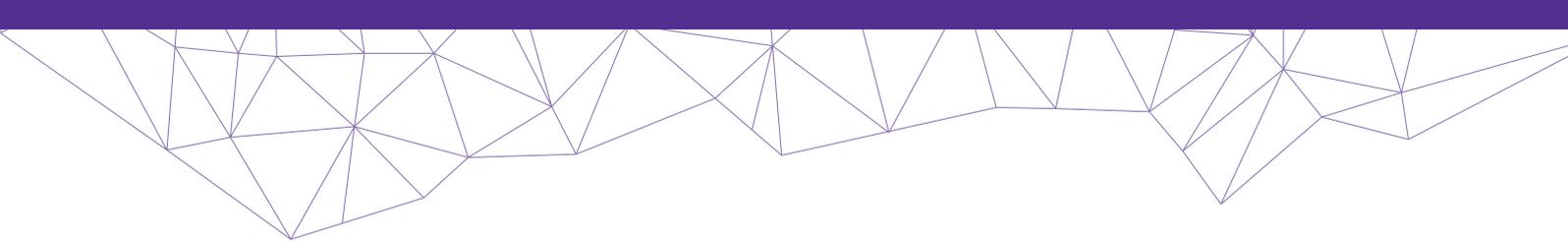
The fellowship project

Joy's study involved assessing the quality of vital statistics data in the Philippines.

Joy is a key member of the PSA and is committed to improving the quality of vital statistics with the Philippines. Her fellowship project involved assessing the Philippines' civil registration data, particularly completeness of birth and death registration. Joy's study involved examining the accuracy and relevance of CRVS data from 2015 for health policy and planning purposes.

A key aspect of Joy's study involved assessing the quality of COD data using the Analysis of Causes of National Deaths for Action, or ANACONDA, tool (**Box 3**). This tool allowed Joy to identify the main problems and errors in the Philippines' mortality data by comparing the data to established epidemiological and demographic patterns.

12   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, The University of Melbourne; 2017.

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

Reflections: take-home lessons

Learning new estimation methods

Joy learned new methods for estimating birth and death registration completeness as well as how to use ANACONDA.

During her fellowship, Joy was able to learn a new method for estimating the level of completeness of death registration developed by researchers at the University of Melbourne as part of the D4H Initiative.[16] This method estimates completeness of registration using data that are readily available, including the registered crude death rate, population age structure, true level of mortality, and completeness of under-five registration.

As for estimating levels of birth completeness, Joy learned the method used by the Global Burden of Disease group in estimating the age-specific fertility rate (ASFR), which is used to compute the number of expected births.

Finally, Joy learned to analyse causes of death using ANACONDA. She was able to draw upon the template prepared by D4H on reporting national results and used this template to complete a report for the Philippines including regional and provincial data.

14   The University of Melbourne. *Improving registration and certification in Colombia.* CRVS country perspectives. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.

15   Mikkelsen L, Lopez AD. *Guidance for assessing and interpreting the quality of mortality data using ANACONDA*. CRVS resources and tools. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2017.

16   Adair T, Lopez AD. Estimating the completeness of death registration: An empirical method. PLoS ONE 2-18; 13(5):e0197047. https://doi.org/10.1371/journal.pone.0197047

Completeness challenges and surprises

Lack of data and an
unexpected registration
completeness estimate
proved to be
challenging at first.

Upon beginning to estimate completeness, Joy encountered some challenges regarding availability of the data needed for some estimation methods. Realising which data were lacking, however, helped Joy to narrow down what information the PSA needs to collect in order to provide complete, accurate data to policymakers and the public.

When Joy first computed the level of completeness of birth registration, the estimate was lower than that of death registration. Joy remarked that while this was unusual, the estimate was nearly identical to the one computed by the United Nations. Upon closer evaluation, Joy found that a number of late birth registrations in the country greatly affected the results of the completeness estimation.

Benefits for CRVS development in the Philippines

Joy emphasised her eagerness to communicate what she learned to her colleagues and other CRVS stakeholders in the Philippines, and to measure changes in the coverage and quality of birth and death data in the Philippines. This is especially important as the PSA does not regularly estimate completeness of birth and death registration.

Moreover, Joy is working on a template for the subnational report on analysis of causes of death using ANACONDA, which will aid Joy's counterparts from the PSA field offices in producing their own reports, which can then be provided to the regional Department of Health offices. Analysis of causes of death at the regional, provincial, and national levels will aid in the improvement of COD reporting as the PSA will be able to provide feedback to local health officers and hospital doctors on what needs to be improved and strengthened.

Overall, having access to reliable, timely vital event registration and COD data will help the Philippine Government in making effective health (and inter-sectoral) programs and policies going forward, as well as to monitor progress towards the Sustainable Development Goals.[17]

17   The University of Melbourne. *Why the Sustainable Development Goal agenda needs strong civil registration and vital statistics systems*. CRVS development series. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018.
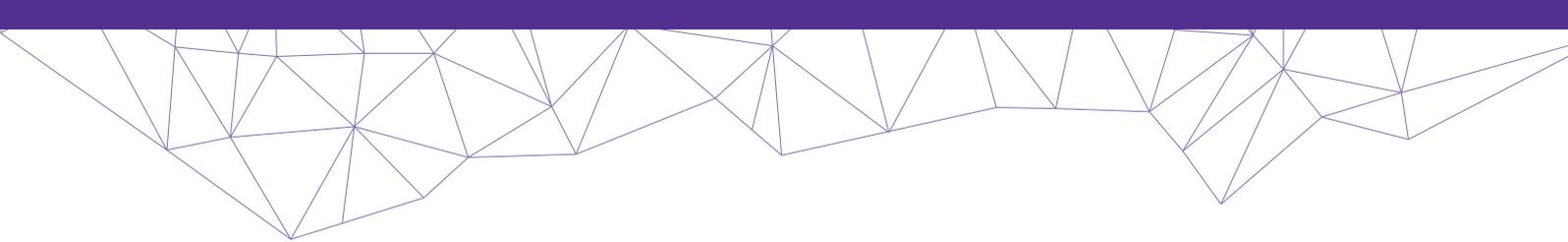
Related resources and products

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

https://crvsgateway.info/library

A new method for estimating the completeness of death registration. CRVS summaries.

CRVS country overview: Philippines. CRVS summaries.

Guidance for assessing and interpreting the quality of mortality data using ANACONDA. CRVS resources and tools.

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

Training and education on medical certification of cause of death: Effective strategies and approaches. CRVS development series.

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

https://crvsgateway.info/learningcentre

Topic 4: Cause of death in CRVS.

Topic 5: The importance of data quality – Completeness.

Topic 6: CRVS tools – ANACONDA.

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

https://crvsgateway.info/courses

ANACONDA

Estimating the completeness of birth and death registration.

Further reading

Adair T, Lopez AD. Estimating the completeness of death registration: An empirical method. PLoS ONE 2018; 13(5):e0197047.

Mikkelsen L, Phillips DE, AbouZahr C, Setel PW, de Savigny D, Lozano R, Lopez AD. A global assessment of civil registration and vital statistics systems: monitoring data quality and progress. *The Lancet* 2015; 386(10001): 1395-1406.

Phillips DE, Lozano R, Naghavi M, Atkinson C, Gonzalez-Medina D, Mikkelsen L, Murray CJL, Lopez AD. A composite metric for assessing data on mortality and causes of death: the vital statistics performance index. *Population Health Metrics* 2014; 12:14.

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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