



CRVS country report

The Philippines: Reflections on the first four years of the Bloomberg Philanthropies Data for Health Initiative

February 2021





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

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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.

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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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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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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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The Philippines: Reflections on the first four years of the Bloomberg Philanthropies Data for Health Initiative

This report, which forms part of a series of papers documenting interventions led by the Bloomberg Philanthropies Data for Health Initiative at the University of Melbourne over a four-year period from 2015 to 2019, presents the interventions implemented through the Initiative in the Philippines to improve the accuracy and quality of data produced by the country's civil registration and vital statistics system. Other reports in this series and further resources on the Initiative's activities in the Philippines can be found on the CRVS Knowledge Gateway: <https://crvsgateway.info/>

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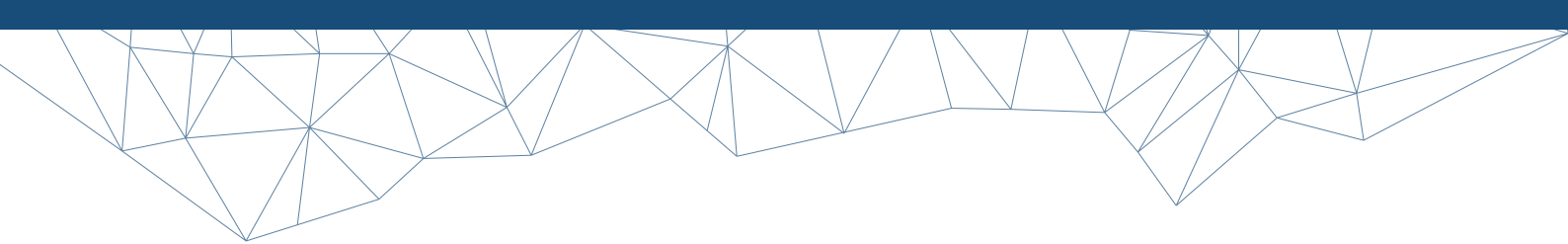
Executive summary

This paper presents the interventions led by the Bloomberg Philanthropies Data for Health (D4H) Initiative at the University of Melbourne (UoM), in partnership with the Government of the Philippines, to improve the accuracy and quality of data produced by the Philippines' civil registration and vital statistics (CRVS) system over a four year period ending in March 2019. Once scaled-up and progressively implemented nationally, these interventions will transform the evidence-base and result in a notable shift in the country's Vital Statistics Performance Index (VSPI). Given the accomplishments already achieved in such a short time-period, there is little doubt that by 2024, the end of the UNESCAP Regional Action Framework for CRVS in Asia and the Pacific,¹ the Philippines will be able to report and demonstrate that its vital statistics goals set in 2014 have been reached.

The **Government of the Philippines recognises the importance of having a well-functioning CRVS system** that provides individuals with an official identity and protects their rights, can be used for the delivery of public services by authorities, and can produce data for monitoring trends in the nation's health status (see **Box 1**). However, through many studies and several assessments including past comprehensive assessments, it was clear that although the Philippines' CRVS system functioned, there were many aspects needing improvement and strengthening.²

¹ United Nations Economic and Social Commission for Asia and the Pacific. *Civil Registration and Vital Statistics in Asia and the Pacific*. 2019. Available at: <https://getinthepicture.org/crvs-decade/regional-action-framework>

² Hufana L, Cajita J, Morante L et al. *Assessing the Production, Quality and Use of National Vital Statistics: A Case Study of the Philippines*. Documentation Note Number 2. Brisbane, Australia: Health Information Systems Knowledge Hub, The University of Queensland; 2009.



Box 1: The CRVS system of the Philippines

The Philippine Statistics Authority (PSA) is mandated by law to carry out the civil registration function for the country; responsible for registration of births, deaths and marriages and for issuing standards and regulations for the civil registration service. The Civil Registrar General is the National Statistician and head of the PSA. The Civil Registration system in the Philippines is decentralised down to the municipal level as all cities and municipalities have their own respective civil registry offices. The Local Civil Registry Office (LCRO) is the office or department in the city or municipality that is mandated to perform civil registration functions. The head of the LCRO is appointed by local authorities. They are responsible for forwarding duplicate copies of civil registry documents to the Provincial offices of the PSA for machine processing and then onwards to the PSA Central Office for consolidation and generation of vital statistics at the national level.

Some significant improvements have been made in completeness of registration, standardisation, and computerisation of the collected data, however, there are still challenges.³ For example, registration of births in the Philippines is high at over 90 per cent, ensuring that most citizens have a legal identity, with national death registration rates at around 80 per cent.⁴ Among Muslims, indigenous people and marginalised poor populations, however, death registration is much lower than the national average.⁵ According to the regional ANACONDA estimates of death registration, completeness in some regions is as low as 13 per cent, and of these, a high proportion have a cause assigned that is totally useless for policy.

The Philippines clearly demonstrated their preference for the **best and most advanced tools** to strengthen their systems. Some of the tools had to be adapted specifically to their system and needed to be piloted to ensure that they delivered what was expected. A CRVS workplan, developed by UoM in close collaboration with the Government of the Philippines, focused on improving the quality of cause of death (COD) data and on making the data available earlier for health policy and planning. The Philippines demonstrated **continuous commitment** throughout the project, with full government support and enthusiastic participation in trainings and capacity building workshops. This support has been vital to the success of the interventions to date.

Crucial steps have been taken to improve the quality of COD data, which will have a positive impact on the CRVS system and result in more reliable mortality statistics. As such, together with the Department of Health (DOH), a targeted strategy to improve medical certification of cause of death (MCCOD) practices in the largest government hospitals was implemented, resulting in over 2500 doctors trained in accurate certification practices by March 2019. These doctors were all trained by 64 'master trainers' who had undergone comprehensive training to develop their skills and capacity as death certification trainers. This intervention has not only improved the capacity among hospital doctors in correct certification practices, but has also helped to **promote an understanding of the importance of quality in medical certification and has contributed to a 'culture of change'** among hospital leadership in recognising the crucial role of correct certification for health statistics. Monitoring components built in to the intervention will enable hospital authorities and the DOH to verify that the good practices are maintained, and that new intakes of doctors and post-graduate interns are trained successfully.

An **extensive network of verbal autopsy (VA)** was also implemented. By the end of March 2019, over 240 staff from central and regional health offices were trained on the use of SmartVA, including doctors, and information technology and support staff. The SmartVA tool was adapted for the needs of medical health officers and has been widely accepted within the areas it was piloted.

The **first country to adopt the new 'SmartVA for doctors' tool**, the Philippines became a **model example for other countries** within the D4H Initiative, many of which have since begun to introduce it for community deaths. Without the vision of key partners in the DOH and the dedication of medical staff using the tool, this would not have been possible.

To further ensure quality improvement of the output data from the statistical system, **automated International Classification of Diseases and Related Health Problems (ICD) coding** of death certificates with 'Iris' was successfully introduced at the Philippine Statistical Authority (PSA) as well as **'ANACONDA'**, an electronic data checking and analysis tool. The integration of these tools into the data treatment and business processes of the PSA led to immediate efficiency gains and significantly improved the consistency of ICD coding and the quality of outputs.

3 United Nations Economic and Social Commission for Asia and the Pacific. *Civil Registration and Vital Statistics in Asia and the Pacific*. 2019. Available at: <https://getinthepicture.org/crvs-decade/regional-action-framework>

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

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

Strengthening the Philippines' CRVS system

At the start of the D4H Initiative in 2015, the Philippines had already signed up to the Ministerial Declaration for Universal Registration in Asia and the Pacific that is part of UNESCAP's Regional Plan for Improving CRVS by 2024.⁶ Among the goals the country had boldly committed to in the Plan was **certification of 85 per cent of all community deaths using VA by the end of 2024**.

A joint workplan developed between D4H and the country drew on a baseline evaluation conducted by UoM to address CRVS system functionality and highlight areas in need of improvement (**Box 2**).⁷

Box 2: Baseline status of the Philippines

At the beginning of the D4H Initiative, partner countries were involved in completing a baseline evaluation of the Philippines' civil registration and vital statistics (CRVS) system. The baseline evaluation framework is a best-practice technical tool used to comparatively measure and track the impact of CRVS technical interventions.⁸ It does this by providing a comprehensive scientific assessment of the CRVS system at baseline to help countries identify the most efficient and cost-effective areas for CRVS technical interventions. The Philippines' evaluation was carried out in December 2015, with information provided by experienced staff at the Philippine Statistics Authority (PSA) and the Department of Health (DOH), as well as supporting data from a desk review of annual publications and handbooks for civil registrars. Although the CRVS system was performing its basic registration functions well, the baseline evaluation found that:

- No training in medical certification was provided to undergraduate doctors as part of the curriculum, nor was training in correct cause of death (COD) certification provided when they became interns. As a result, death certificates both from hospitals and community deaths were frequently inaccurate.
- With most deaths occurring outside of medical settings, medical officers certifying deaths were often determining causes of death with little or no information on the decedents. As a result, the quality of the medical information for a large amount of death certificates was too poor to be useful and, in many cases, entirely misleading. Consequently, this created problems for those coding the certificates to derive the underlying CODs, and thereby, assign correct ICD codes.
- The PSA was struggling to code correctly, by hand, the growing number of annual deaths. Hence, by the time data were released they were several years old, significantly diminishing their utility.

The baseline assessment identified that the government recognised the importance of having a well-functioning CRVS system and was aware that significant improvements in the quality of data being produced was required. With major weaknesses in the quality of many death certificates and the long delay before publication, health policy and planning in the Philippines was, therefore, often based on inaccurate data.

A Technical Advisory Group (TAG) consisting of country stakeholders, determined the interventions that most would benefit the Philippines CRVS system moving forward. As reflected by the technical lead for the Philippines, Dr Lene Mikkelsen from the University of Melbourne;

'The baseline evaluation clearly shows that the Philippines is not a country which has any problems in general with collecting data, it does that well. Similarly, it has a mature civil registration system with relatively high completeness. The problems that remain all relate to quality and timeliness, both of which are increasingly important in today's information systems.'

6 UNESCAP. Implementing the Regional Action Framework on Civil Registration and Vital Statistics in Asia and the Pacific. 2015.

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

8 Mikkelsen L, Richards N, Abouzahr C, Adair T, Lopez AD, deSavigny D, Onaka A, Nichols E, Bronson G. *A framework for evaluating national CRVS systems at baseline*. CRVS technical guide. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2018. Available at: <https://crvsgateway.info/file/17043/277>



Improving the accuracy of cause of death data

Understanding the issues

‘Proper documentation of death is important, because if it’s improperly documented, then you might mislead people - health policymakers - from the actual causes of death, and thus it might affect allocation of resources. So, I really believe this is an important endeavor.’

Dr Anthony Russeu Villanova, Medical certification of COD Training Officer, National Kidney Training Institute, Philippines

More than half a million deaths a year occur in the Philippines.⁹ By law, all deaths must be registered and must have a COD assigned in order to be registered. For deaths that occur in health facilities, the attending doctor writes the COD on the death certificate, while for community deaths a rural or city medical officer interviews the family and provides a probable COD. A death certificate aligned with the World Health Organization’s (WHO) international standard medical certificate is used throughout the country for all deaths.¹⁰

Almost two-thirds of all deaths take place outside of medical settings where the COD will be assigned by a medical officer who primarily relies on information provided by the person reporting the death. Although in principle these deaths are medically certified, prior to the D4H intervention, there were **no standard set of questions or procedures being followed to ascertain the cause**. The result: a high proportion of death certificates containing poorly specified causes, making it impossible for coders to correctly code an underlying cause of death. A study of death certification process in selected areas in the Philippines found that the medical officers, whose job it is to conduct death reviews, encountered numerous difficulties with this process.¹¹

Strengthening medical certification of cause of death

The D4H Initiative has benefitted from and built on the CRVS assessment work initiated in 2010 by the Health Metrics Network (HMN), which used experts from the University of Queensland to train doctors in correct medical certification and the development of appropriate training materials. By the time the joint workplan with D4H began in 2016, the DOH had assumed responsibility for training, resulting in **more than 1500 doctors trained in medical certification**.

While this was an impressive achievement, it was less than five per cent of all practising doctors, and at the same rate, was likely to just keep up with the annual output of newly graduated doctors. Therefore, key activities that the D4H focused on in medical certification were:

- Identifying a more effective medical certification training strategy for teaching doctors in hospitals
- In partnership with DOH, developing a shorter teaching curriculum for doctors and medical officers
- Developing a short awareness-raising curriculum and advocating for the introduction of this into medical schools.

After consultation with the DOH and several visits to hospitals and their medical records units to further understand the country’s process of writing death certificates, a **new medical certification strategy was agreed to be piloted in the largest government hospitals**, becoming an important part of the CRVS workplan. The new **strategy aims for impact**, hence the focus on the hospitals with the most deaths. The other advantage of using the largest hospitals was that they often already have teaching responsibilities and committees able to supervise training and oversee its implementation.

Between January 2016 and March 2019, approximately 66 doctors from the selected hospitals were trained as ‘master trainers’ enabling them to subsequently train their colleagues, and a further 76 medical records staff were trained to assist with the preparation of baseline data for monitoring. Training of medical records staff consisted of teaching them to use an electronic assessment tool developed by UoM to evaluate the quality of the medical death certificates.¹² Alongside this, training in medical terminology was also provided to help them correctly interpret what doctors are required to write on the certificate.

9 Philippines Statistics Authority. *Death statistics*: 2018. Available at: <https://psa.gov.ph/tags/death-statistics>

10 World Health Organization. International statistical classification of diseases and related health problems, 10th revision, vol. 2, 10th edn. Geneva: World Health Organization; 2016.

11 Tolabing MAC, Carnate JM, Tinio CS, Marcelo DB. Interrupted Time Series Study on the Completeness and Acceptability of the Cause of Death Statement in Death Certificates. *ACTA Medica Philippina*. 2013; 3:47.

12 Assessing the quality of death certificates: Guidance for the rapid tool. Available at: <https://crvsgateway.info/file/9587/62>

The training material, developed specifically for this program, was particularly focused on teaching correct completion of a medical certificate according to ICD rules. An important aspect of this training was to assess the quality of certification some time after the training was delivered, to gauge if changes in practice were being sustained. As such, a baseline of the quality of medical certificates was taken in each hospital before the training, and another one was conducted six to nine months later to assess whether the improvement was sustained.

Six months after the last batch of master trainers had taken place, when it was expected that most doctors within the participating hospitals had been trained, an evaluation workshop with the master trainers and the trained medical records staff took place to allow participants to report on the challenges experienced and to hear what further help was needed to make the program sustainable. Since this was a new strategy, it was important for the DOH to know whether it had worked or what further changes would be needed before scaling up. Conclusions from this two-day workshop confirmed that it had worked well in many hospitals, but that the in-hospital training had taken longer to carry-out than planned, in part because of a lack of financial support and because some of the master trainers had since left the hospital. There were also some doubts about whether all the medical records staff had mastered the assessment tool and had sufficient knowledge to assess the last two questions in the questionnaire. However, despite some teaching challenges, most of the doctors involved wanted to continue with the strategy and offered to teach others to become master trainers or to train in other hospitals. This suggests that **passing the responsibility for medical certification training to hospitals can work**. The comparison of the two baselines showed that the improvement measured just after the training was maintained for at least six to nine months, suggesting that training had achieved a long-term change in the medical certification practices of participating doctors.

While the training of the master trainers involved two days of intensive training, the training program taught in the hospitals, which only covers the essential components of medical certification, was conducted in two-hour sessions. At the time of the evaluation, 2587 doctors had been trained in correct medical certification in 37 hospitals and the number of death certificates with errors had decreased dramatically, from 82 per cent to 40 per cent. Those hospitals that had trained all their doctors would, in future, only need to conduct trainings ad hoc to align with intakes of interns and new doctors.

A major advantage of this strategy compared to the more intensive trainings that the DOH has conducted over previous years is that hospitals became responsible for training their own staff, and the training became integrated into other training activities allowing it to be conducted when needed. The DOH remained involved, however, providing basic budget support, training materials, and guidance and regulations to the hospitals. Trained doctors have also welcomed the new training strategy:

'It's not difficult to call the doctors into our training because it is part of the culture, and it's part of our training in Internal Medicine. Because it's our prerogative to teach them how to write the certificate of death.'

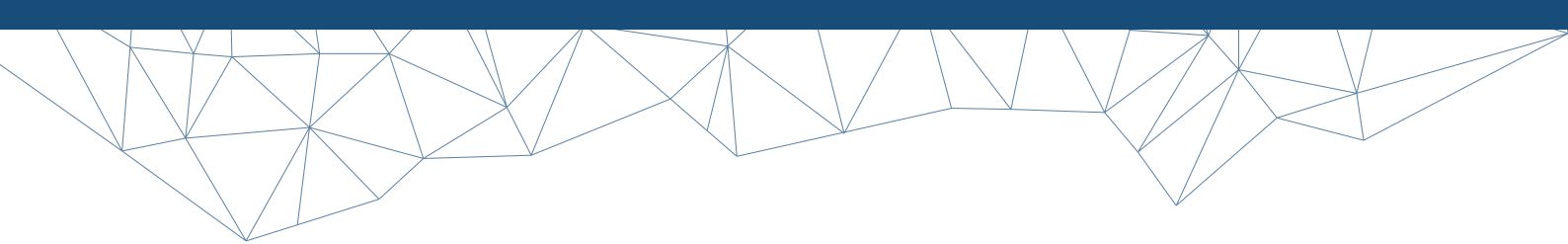
Dr Pepito E. de la Pena, medical certification of COD Training Officer, Internal Medicine, NKTI

There are more than 100 medical schools in the Philippines and none are under the authority of the DOH. Nonetheless, negotiations have begun with some schools in the country to institute MCCOD training into their curriculum. The DOH is also looking into the possibility of including MCCOD training as a continuing professional development activity for doctors.

Introducing verbal autopsy

Although more than half of all deaths take place outside of hospitals, through the system of Municipal Health Officers (MHOs), all deaths are medically certified, even in remote and rural areas. However, these officers usually have no medical records on the decedent and do not see the body, making certification entirely dependent on what information they can extract from the family. Given this, it was decided to develop a VA tool for doctors to use when they do not have enough information to properly diagnose the COD (**Box 3**). The tool, *SmartVA for Physicians*, was based on an existing automated VA tool, SmartVA,¹³ and is applied by a doctor when families come to the office to get a COD for death burial and registration purposes.

¹³ More information on SmartVA is available at the IHME's website, <http://www.healthdata.org/verbal-autopsy/tools>



Box 3: What is verbal autopsy?

Verbal autopsy (VA) is a method for collecting information about an individual's signs and symptoms prior to their death from their family or caretaker and interpreting these to diagnose the most probable cause of death.

The SmartVA for Physicians tool includes a short questionnaire which is used to interview the family or the caretaker of the decedent. With inbuilt skip-patterns it can take anywhere from five to 20 minutes to carry out the interview. Immediately after the interview, the Tariff algorithm provides the doctor with the most probable COD obtained from the endorsed symptoms from the interview. If the doctor agrees with the COD proposed by Tariff, this can be entered on the death certificate, thereby not delaying the issuing of the registration papers.

SmartVA for Physicians is an **extremely innovative way of using VA**, allowing doctors to first conduct the open interview and thereafter, depending on the information obtained, decide whether it is needed to continue and go on to conduct the standard interview from which the Tariff algorithm gets the most likely COD. After Tariff has proposed a COD, the MHO can still use their clinical knowledge to pose some additional questions to the families of the decedent that might allow them to further specify the COD.

SmartVA for Physicians was piloted for community deaths in three language dialects, and in seven regions covering urban, rural and geographically isolated and disadvantaged sites. The training materials and practice instructions were adapted to suit doctors, allowing them to see the three causes that scored highest and select the COD straight away. This is very different from the standard use of automated VA, where the interviews are conducted by people with little or no health knowledge and transferred to a central database, and where the COD derived from interviews is used only for statistical purposes, and not for death registration.

Understanding the impact

More than 9770 VA interviews were collected and reviewed during the pilot phase, with the results discussed at an evaluation workshop and compared to those previously obtained for home deaths in the piloted areas. The comparison showed a fully plausible COD distribution with acceptable percentages of undetermined deaths. Overall, 65 per cent of death certificates were written by doctors who used SmartVA for Physicians to diagnose the COD, and some were able to further refine the diagnosis by indicating specific cancers such as liver and nasopharyngeal, and specific maternal deaths such as eclampsia.

MHOs in the Philippines have welcomed the tool and quickly became efficient in using it. Dr Clemencia Bondoc – Municipal Health Officer, and President of the Association of Municipal Health Officers of the Philippines, explained that:

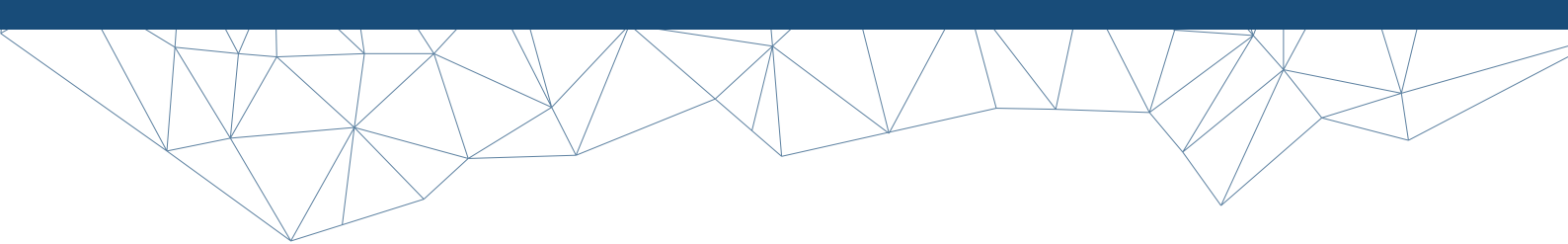
'The more you use the tool, the more you get used to all the questions. When initially we used to do it in 30 minutes, now that we are all familiarised with what we are doing, it usually only takes us 10 minutes and we arrive at a diagnosis.'

Box 4: Did doctors like the tool?

The use doctors made of the tool was monitored weekly during the pilot to understand the frequency of usage and whether the Tariff-suggested COD was the one used for the death certificate.

It was found that 91 per cent of MHOs had used SmartVA for Physicians frequently, and when no medical records were available, the tool was used in 90 per cent of cases.

More surprising was that even when some medical record information was available, SmartVA for Physicians was still used in more than 80 per cent of cases. The reason stated in the focus group discussions was that it gave doctors additional confidence when making a diagnosis.



The tool has been widely accepted by doctors in the piloted areas, who had previously found COD assignment difficult where limited information was available on the decedent. There is no doubt that SmartVA for Physicians in the Philippines has standardised and improved the way MHOs arrive at a COD, also allowing them to complete the death certificate while the family is waiting. While MHOs previously asked questions of the families, they did not, as D4H Technical Advisor, Dr Rohina Joshi, said:

'...have a tool where they could click a button and be assured that all the answers to the questions had been considered before assigning a probable COD.'

Introducing automated coding – 'Iris'

Another important component in getting good-quality COD statistics is ensuring coders are sufficiently trained to be able to select the underlying COD from the death certificate and code this correctly. In the Philippines, the PSA is responsible for coding the causes of all deaths. Originally, this was primarily done in the regional centres, but due to a lack of trained coders most death certificates had to be re-coded in the central office before being analysed. Even with the trained PSA coders, due to the poor quality of many death certificates, between 20 and 30 per cent of certificates each year were coded to so-called 'garbage codes' (codes that are useless for policy and planning).

To code more than half-a-million of deaths manually each year is a full-time job for the 20 coders working in the central office. Implementation of automated coding using the Iris software was, therefore, included in the workplan with PSA.¹⁴ While many of the coders had received some ICD training previously there was a need to increase the level of understanding of some of the more complex coding rules. Consequently, PSA coders went through a more advanced ICD training to equip them to code those death certificates likely to be rejected by Iris. This was done before the coders were trained in inputting data into Iris and managing cases rejected by Iris. To further help the coders improve their coding outcomes, they were given a training in medical terminology relevant for coding.

Given the associated risks when moving from a manual system to an automated one, Iris expertise from the Australian Bureau of Statistics was brought in to assist PSA with the system-level changes and with the evaluation of the Iris coded 2017 data. The thorough evaluation, which included all the 2017 COD statistics, **confirmed that the quality of coding had improved** and more closely aligned with ICD coding rules. As a result, there were consequences for the COD and vital statistics published by PSA. It was important to verify, however, that where there were significant differences in certain disease groups from earlier years, these were all explainable and due to the more correct coding produced by Iris. An explanatory note was prepared by PSA to guide users through the significant changes.

Another system change that occurred as a result of automated coding was the regional centres being relieved from any ICD coding responsibilities. Regional centres are now just required to ensure that death certificate data are entered electronically.

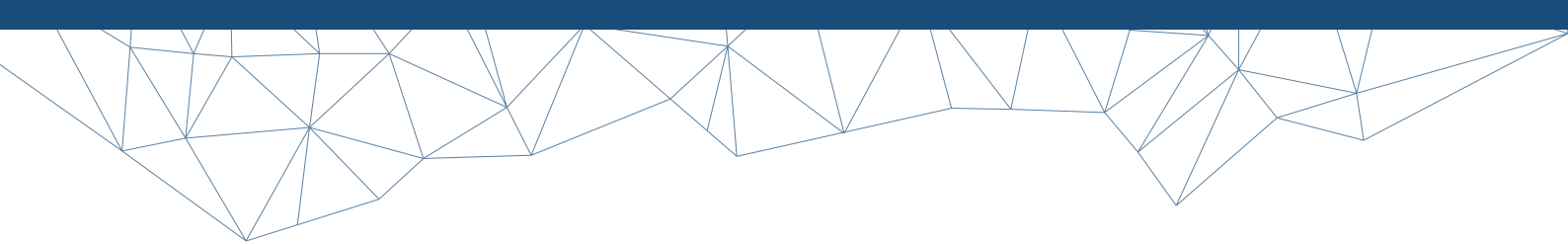
The introduction of any new software into an existing electronic system always causes challenges and requires some re-engineering, and so an interface program was developed for the existing database for vital statistics, DVSS, to communicate with Iris. Fortunately, PSA had the necessary IT staff to create an interface and ensure interoperability.

The Vital Statistics Unit at PSA has welcomed the introduction of Iris, and despite the time that had to be allocated to training the coders, was **able to finish coding all the 2017 deaths in roughly half the usual time**. Part of the improvement in quality has likely come from just consistently applying the same coding rules and standards in each case. Eventually, the gain in time will allow PSA to spend more time on finding solutions to difficult cases rejected by Iris, or working with the DOH to code potentially sensitive diseases such as HIV-AIDS.

'Before Iris, it [would take] more than two years to release the [COD] data. But now since we started using Iris in 2017, for this year we will already finish coding of the data before the end of 2018, so it is a huge achievement.'

Aurora T Reolalas, Chief Statistical Specialist, PSA

¹⁴ Mikkelsen, L, Gamage, S, Sarmiento, C, Reolalas, A, Orchilla, E. *Introduction of Iris automated mortality coding system in the Philippines*. CRVS country report. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne, 2019. Available at: <https://crvsgateway.info/file/16988/3480>



Any office that introduces Iris needs to be aware that while Iris will take care of consistently coding the bulk of the death certificates, a small proportion of complex cases will be rejected and will need the attention of experienced coders. Ensuring the experienced coders, which have now been trained in Iris, become permanent staff of the Vital Statistics Unit will be essential for maintaining the quality in automated coding.

Adoption and implementation of Iris in the Philippines is a system-level change that supports best practices for producing regular, timely and high-quality COD statistics. PSA has clearly demonstrated that it is an agency able to change its business processes, manage change and up-skill its staff for new technologies. Without this it would not have been possible to successfully install Iris in such a short time and make sure that it lived up to expectations of improved quality and timeliness of the COD statistics.

Introducing ANACONDA

The Philippines also chose to be trained in the use of another tool D4H offers to countries to assess the quality of the mortality and COD data produced by the CRVS system.

The **ANACONDA tool has allowed both the PSA and DOH, for the first time, to critically assess their mortality and COD data** in-house before publishing or deciding on their usage. ANACONDA is a powerful tool that countries can use to analyse many aspects of the data they need and collect for monitoring the health situation of their population (see **Box 5**).¹⁵ For instance, to use mortality data with confidence you need to know whether it covers all deaths, and whether the cause-specific fractions are reliable and not biased by a high proportion of ‘garbage causes’ that are of no use in policy and planning.

ANACONDA analyses the diagnostic errors being made by certifying doctors; the differences between regions in completeness of death reporting; and the overall performance of the CRVS system. It can also serve as a platform for monitoring improvements likely to follow from the three previous interventions described above. An annual mortality report at the national or subnational level can also be prepared with the ANACONDA reporting template,¹⁶ specifically developed to enable countries to rapidly compile and analyse their mortality and COD data.

Box 5: What is ANACONDA?

ANACONDA is built on a set of standard demographic and epidemiological concepts that underlie mortality data quality,¹⁷ and provides a 10-step logical evaluation framework for assessing mortality data.¹⁸ First, it overviews the input data and applies simple checks to the mortality data. Then, it assesses the quality of COD data, the amount and kind of garbage codes, and finally computes an overall index of the data quality, the VSPI(Q). All the computational steps and graphs are automated and straightforward.

By regularly applying this assessment tool and interpreting the outputs, country governments can better understand:

- How reliable the input data from their routine CRVS systems are
- What the probable biases or errors are
- Any progress in improving the quality of mortality and cause of death data
- Where and what kind of interventions are most urgently needed to further strengthen their existing systems.¹⁹

15 ANACONDA is available to download, free of charge, here: <https://crvsgateway.info/anaconda>

16 ANACONDA mortality and cause of death assessment report template. Available at: <https://crvsgateway.info/file/10035/2812>

17 The University of Melbourne. Colombia: A strategy to improve the registration and certification of vital events in rural and ethnic communities. CRVS country report. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2018. Available at: <https://crvsgateway.info/file/16987/2020>

18 Mikkelsen L, Lopez AD. Guidance for assessing and interpreting the quality of mortality data using ANACONDA. CRVS technical guide. Melbourne, Australia; Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, The University of Melbourne; 2017. Available at: <https://crvsgateway.info/file/17068/56>

19 Adair T, Lopez AD. Estimating the completeness of death registration: An empirical method. PLoS ONE. 2018; 13(5):e0197047. <https://doi.org/10.1371/journal.pone.0197047>

The overall improvement index included in ANACONDA, the VSPI(Q), offers an efficient way to track progress in mortality data quality improvements over time. By March 2019, two ANACONDA trainings had been delivered in the Philippines, including training for the regional offices. Further trainings for additional staff in the use of ANACONDA were also conducted by PSA. Outcomes of the trainings are monitored annually to assess the impact the various improvement actions.

Further to the in-country trainings, a statistical specialist from PSA and a staff member from the Knowledge Management and Information Technology Service (KMITS) at the DOH were granted places in the D4H's **CRVS Fellowship Program**, conducted at the University of Melbourne. During their stay, one Fellow worked on assessing the impact of the medical certification training that had been conducted previously by DOH, and the other worked on assessing the quality and completeness of birth and death registration in the different regions of the Philippines using, among other methods, the ANACONDA tool.²⁰ Analysis of causes of death at the regional, provincial, and national levels will assist in the improvement of COD reporting, and will provide critical feedback to regional local health authorities.

Ensuring sustainability and facing challenges

To ensure sustainability and impact of the introduced interventions, the D4H Initiative has, where necessary, invested heavily in capacity building within the concerned government agencies. A team of 'master trainers' that can carry on medical certification training in hospitals and a team of SmartVA trainers are ready to roll out these two interventions where needed. Within the DOH it has been essential to work in close partnership with different bureaus responsible for hospital-level operations and policy, including Epidemiology, Hospital Facilities and Development, as well as KMITS. Such collaboration, although crucial, is not always easy to achieve as it usually signifies additional work for those involved and a sharing of resources.

Moving forward for the Philippines, focus should be applied to regulating the implementation of VA and MCCOD training, **anchoring the training in key institutions** and developing hospital policies relevant to correct certification, with oversight by hospital committees and reporting to the DOH. Both the DOH and PSA have already changed several practices that will ensure better quality and contribute to sustainability - this should continue to be a focus. Intra-agency cooperation as well as cooperation with partners outside should be strengthened to fully achieve the CRVS goals for 2024.

With regard to SmartVA for Physicians, the DOH has a plan to sustain a progressive roll-out to all areas with all rates of people dying at home, with a focus on areas where people often die having had little or no contact with the medical system. This will also mean that in all the health centres where a VA will be conducted, computers and an internet connection will have to be provided. Electronic communication of completed certificates and registrations, coupled with regular software updates must become the basis of the Philippine CRVS system.

It is extremely fortunate that the Government of the Philippines understands the importance of strengthening both the CRVS system and the cross-cutting health and CRVS policies and laws that underpin and interact with the system. The efforts of the Government of the Philippines to ensure 'everyone is in the picture' serves as a **testament to the CRVS stakeholders in the country who continue driving the momentum forward**. Close collaboration between the key CRVS stakeholders, particularly the PSA and DOH, is a major reason such positive steps in CRVS systems strengthening have been made in the Philippines.

The Philippines CRVS system has indeed made massive progress in the last three years and has demonstrated its **ability to implement, with minimal technical assistance, very large and complex programs of change**. The commitment and enthusiasm for CRVS progress has been demonstrated, now with continued good leadership and supervision the benefits of the interventions will become progressively evident as further roll-out occurs. This will ensure that by 2024, the end of the UNESCAP Regional Plan for Improving CRVS, the Philippines will be able to demonstrate to other countries in the region how to improve their systems.

²⁰ Villaver M. Fellowship profile: Assessing the quality of vital statistics in the Philippines. CRVS Fellowship reports and profiles. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, the University of Melbourne; 2018. Available at: <https://crvsgateway.info/file/17020/2483>

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
crvsgateway.info

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