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## CRVS Fellowship profile

Improving the quality of cause  
of death statistics in Malaysia,  
Mohamad Fuad

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### *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.

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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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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*

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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: Improving the quality of cause of death statistics in Malaysia, Mohamad Fuad

From February to March 2021, Mohamad Fuad from the Ministry of Health in Malaysia undertook a remote Civil Registration and Vital Statistics (CRVS) Fellowship through the Bloomberg Philanthropies Data for Health (D4H) Initiative at University of Melbourne (UoM), looking to improve the quality of cause of death statistics in Malaysia.

This profile documents Mohamad Fuad's personal experiences and outcomes, and the broader impact his Fellowship might have on improving the quality of mortality data in Malaysia.

For more information on the CRVS Fellowship Program, including information on how to apply for a Fellowship, visit the CRVS Knowledge Gateway at <https://crvsgateway.info/fellowship>

## Pre-Fellowship: Career overview

Mohamad Fuad is looking to serve as a Subject Matter Expert (SME) on mortality statistics at the Ministry of Health of Malaysia.

Graduating from the University Malaysia Terengganu in 2009 with a Bachelor of Science, Mohamad Fuad worked as an Assistant Research Officer with the Department of Biotechnology Science at the International Islamic University Malaysia (IIUM) for three years before deciding to continue his studies via a Master of Biosciences at IIUM. After graduating in 2014, Mohamad Fuad joined the National Institutes of Health under the Malaysian Ministry of Health (MOH), where he currently works as a Research Officer.

The MOH has tasked Mohamad Fuad with developing his skillset as a subject matter expert (SME) – a person within an organisation with a deep knowledge and understanding of a particular topic – on mortality statistics. By serving as an SME, he hopes to help the MOH with analysing and improving the quality of death data in Malaysia.

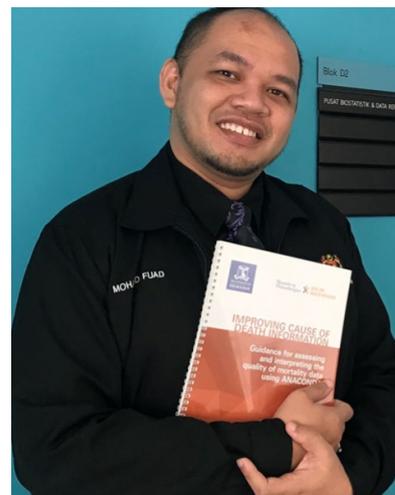


Figure 1: Mohamad Fuad at his workplace, the Ministry of Health of Malaysia

Improving the quality of data on deaths that occur outside of health facilities is a top priority, as about half of all deaths in Malaysia – an estimated 70 000 to 80 000 deaths per year, Mohamad Fuad advised – take place in the community setting. The cause of death (COD) information derived from these community deaths are often unreliable, as community settings lack physicians able to medically certify all deaths (**Box 1**).

*“Inaccurate cause of death information [for community deaths] given to the MOH, including causes like ‘old age’ or other unusable causes, are a major problem [in Malaysia].”*

*- Mohamad Fuad*

### Box 1: 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 (COD) should be completed.<sup>1</sup> 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.<sup>2</sup> 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.<sup>2</sup>

Malaysia uses physician review for community deaths, although accurate cause of death certification can be a challenge.

To try and improve the quality of Malaysia's COD data, the MOH has employed a 'physician review' strategy for deaths that occur in the community. When a death in the community occurs, a medical officer is deployed to the field to assign a COD (to be input into the MOH's online death registration system).

However, in Malaysia, ascertaining a COD can sometimes be difficult as community deaths are under police jurisdiction, and a death will usually require forensic investigation before a medical officer can investigate the COD. To try and mitigate this extra burden placed on medical officers, the MOH is looking into implementing methods of automated verbal autopsy (VA), like SmartVA (**Box 2**), to ascertain CODs for community deaths.

### Box 2: What is verbal autopsy (VA)?

Verbal autopsy (VA) is a method for collecting information about an individual's signs and symptoms before their death from their family or next of kin, and interpreting these to diagnose the likely or most probable COD.<sup>3</sup>

The VA process consists of three steps:

1. Setting up an interview by a trained VA staff member at home (or another appropriate place)
2. Conducting a structured interview to collect information on signs and symptoms of illnesses and events that the deceased had before death
3. Interpreting the interview data to diagnose the most probable COD.<sup>4</sup>

Because physician-certified VA can be time-consuming and costly, particularly in settings where physicians may not be available, automated methods of analysing VA questionnaire data have been developed. These methods often use a digital tablet, and have several clear advantages over VA questionnaires in paper form, from reducing data entry errors to speeding up the interview process.<sup>5</sup>

1 The University of Melbourne. *Strategies for improving the quality of cause of death data in hospitals*. CRVS best-practice and advocacy. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2017. Available at: <https://crvsgateway.info/file/16951/45>

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

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

4 The University of Melbourne. *Intervention: automated verbal autopsy*. CRVS best-practice and advocacy. Melbourne, Australia: Bloomberg Philanthropies Data for Health Initiative, Civil Registration and Vital Statistics Improvement, University of Melbourne; 2016. Available at: <https://crvsgateway.info.myudo.net/file/20815/91>

5 University of Melbourne. *Challenges associated with automated VA training and rollout*. CRVS best-practice and advocacy. 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/16909/47>



## Applying for the Fellowship

Mohamad Fuad sought to use his Fellowship to learn tools and methods for analysing the quality of cause of death information from community deaths.

Mohamad Fuad had heard about the CRVS Fellowship Program from a colleague, and was motivated to apply in order to further expand his understanding of mortality statistics. Given his background in biostatistics and role as a consultant on statistics, the MOH were very supportive of Mohamad Fuad's interest in deepening his knowledge on mortality statistics.

Although he had the choice to focus his Fellowship project on business process mapping, he chose to focus on the quality of COD data from community deaths instead:

*"We can focus on analysing procedures around data quality first, and then move on to discussing business process mapping afterwards, especially since business process mapping will require coordination among so many agencies."*

## Undertaking the Fellowship

Upon beginning his remote Fellowship, Mohamad Fuad discussed his topic with his supervisor and staff from UoM, and learned more about automated VA methods as well as tools and methods for analysing the quality of VA data from community deaths.

He mentioned that his supervisors not only helped him develop his knowledge around data quality analysis, but also his critical thinking skills. As the MOH is struggling with a high proportion of unusable causes from community deaths, he is eager to pinpoint flaws in the certification of deaths and improve Malaysia's COD and mortality data, all whilst reducing the workload of the MOH's medical officers:

*"When using physician review as a method for determining COD, I can see some flaws. Alternative methods such as SmartVA should be implemented as well. After I finish my project, I will study the differences between physician review and automated VA for community deaths. After I present the results of my project, decision-makers can decide whether to continue with physician review or switch to alternative methods for VA."*

Mohamad Fuad had to carefully divide his time between his regular work and Fellowship project. He recommended that future Fellows looking to undertake a remote Fellowship try and negotiate a reduced workload with their workplaces during the Fellowship, as time management proved to be challenging:

*"Because it is a remote Fellowship, I have to work on the project part-time rather than full-time. My usual work from the MOH has still been assigned to me, so I have to schedule my time carefully to balance my normal work with my Fellowship work."*

## Moving forward

Mohamad will share his learnings with his VA team, which he thinks will allow the Ministry of Health to better understand the gaps in Malaysia's CRVS system.

Mohamad Fuad stated that the tools and skills learned during the Fellowship will help him improve COD information from community deaths, and he now plans to share his learnings with his MOH colleagues. Because he works in a small VA team in the MOH, he believes his colleagues will be particularly interested in his project:

*"Right now, I'm a facilitator for VA implementation in the MOH, and I have learned about how VA is done. After the Fellowship I will try to focus on data quality even further, which will help improve Malaysia's mortality statistics."*

After sharing his knowledge with his VA team, he aims to present his Fellowship project to a larger group of CRVS stakeholders, perhaps at the district and state levels. He hopes that his efforts will help the MOH and other organisations involved in CRVS to better understand the gaps in Malaysia's mortality information, and spur decision-makers to implement policies and programs to ensure all deaths in the country receive medical certification.

*"Although about 80 per cent of deaths are currently medically certified, my vision is for us to aim higher. Even though we're using physician review, some causes are undetermined or vague, which is not helpful for generating accurate mortality statistics. We also want to make COD data collection for community deaths an efficient process, and to reduce the workload of medical staff. I hope that CRVS in Malaysia becomes smoother in this way."*



Figure 2: Mohamad Fuad delivering a lecture on VA to Malaysian government officials

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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