



# SHANGHAI

## CRVS overview

As part of the CRVS BD4H Initiative, Shanghai will implement five interventions to advance system performance by focusing on improvements in the quality of mortality statistics generated through their surveillance system.

### The Challenge

The Shanghai municipality is comprised of 17 districts with a total population of 24 million 14 million of whom are permanent residents. The **Shanghai Municipal Center for Disease Control (SCDC)** surveillance system covers all 17 districts and is responsible for health data collection as well as the **death and birth registry**.

The Shanghai CDC system is fully computerised and electronically records vital events in real time. Overall, the system is **efficient and functional**; however, potential areas of data uncertainty include the high proportion of deaths that occur at home (~35%) for which cause of death accuracy has not been determined, and limited capacity in applying critical data quality assessments. Some vital events are also not reported, primarily for infant, elderly and 'floating' populations.

### Our Approach

As part of the Bloomberg Philanthropies Data for Health Initiative and in close collaboration with the Shanghai team, **five interventions** have been developed to advance system performance by focusing on improvements in the quality of mortality statistics generated by the surveillance system. This approach will accomplish at least two strategic objectives. First, it will ensure **beginning-to-end quality** of the surveillance system as it is intended to function for deaths occurring in health facilities. Second, the reliability of mortality statistics should be improved with a more proactive focus on **improving the diagnosis of at-home deaths and enhanced medical certification** of cause of death in hospitals.

#### INTERVENTION 1

##### Medical records/misclassification study and VA validation.

The purpose of the medical records/misclassification study is two-fold: 1) **to assess the accuracy and reliability of cause of death (COD) data**, and to identify common certification errors as a basis for targeting interventions to improve COD; and 2) to provide 'gold standard' diagnoses against which to **validate the performance of automated verbal autopsy (VA)** methods under consideration for use in diagnosing COD for community deaths. As the accuracy of COD data has not been determined; **evidence generated from this study will guide subsequent BD4H interventions**, including potential implementation of VA and training for physicians in medical certification of COD. The study will also **build capacity in the SCDC** to conduct similar assessments and monitoring of accuracy of medical certification of COD over time.



## INTERVENTION 2



### Improve the quality of medical certification of cause of death

Certification is the process physicians use to determine the **underlying cause of death**. Improved certification practices will **ensure that decision-makers have more accurate information** on what people are dying from. This is important for understanding public health priorities and rationalising the provision of appropriate clinical care.

By law, all deaths in Shanghai need to have a cause of death (COD) assigned in order to be registered. Methods to **improve certification of cause of death** will be implemented through a comprehensive strategic plan aimed at a core team of well-trained trainers in medical certification, who can continue to train local physicians.

## INTERVENTIONS 3 & 4

### Enhance CRVS workforce capacity

Improving **national capacity, skills and knowledge** in CRVS is very important. Capacity development is needed to ensure high-quality registration of births and deaths. Capacity is also needed in ensuring that data are properly **compiled, checked, analysed** and transformed into vital statistics for policy and planning.

Training in **estimation methods on the completeness of birth and death registration** will allow the Shanghai CDC to monitor how their CRVS system is performing in registering all births and deaths of residents. **Training in ANACONDA** (an analytical software tool) will build capacity to routinely monitor the quality of cause of death statistics, enabling staff to identify inconsistencies and errors in their mortality datasets and develop interventions to improve the reliability of data for health policy and planning.



## INTERVENTION 5

### Improve the quality of mortality coding

Mortality statistics on causes of death (COD) are one of the principal data sources for assessing a population's health and guiding public priorities. High-quality coding of death certificates is an essential part of generating **reliable and accurate mortality statistics**. This information is important to understand trends in the **leading causes of death** for the people of Shanghai.

As the quality of coding in Shanghai has not been determined, an **assessment** will be done to reveal **gaps in data quality** and guide the subsequent manual coder training workshop and potential future implementation of Iris automated coding. The purpose of coder training is to **improve the consistency and quality of COD data** by reducing potential manual coder errors. Training of manual coders will underpin the overall BD4H strategy to improve Shanghai's mortality data.



For more information about the CRVS BD4H Initiative in Shanghai, contact Gu Zhen, Data for Health Country Coordinator ([gzhen@dataforhealth.org](mailto:gzhen@dataforhealth.org)), Dr Rasika Rampatige, University of Melbourne ([rasika.rampatige@unimelb.edu.au](mailto:rasika.rampatige@unimelb.edu.au)), or Romain Santon, Vital Strategies Project Officer ([rsanton@vitalstrategies.org](mailto:rsanton@vitalstrategies.org)).

For more information, contact:

**E: [CRVS-info@unimelb.edu.au](mailto:CRVS-info@unimelb.edu.au)**

**W: [mspgh.unimelb.edu.au/dataforhealth](http://mspgh.unimelb.edu.au/dataforhealth)**

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