

# CRVS technical guide

## Interpreting verbal autopsy in five steps: A quick reference guide



This quick reference guide is a visual aid to accompany the following resources on the CRVS Knowledge Gateway: (1) *Guidance for interpreting verbal autopsy results* (available at: <https://crvsgateway.info/file/18768/3231>) and (2) *Summary: Guidance for interpreting verbal autopsy results* (available at: <https://crvsgateway.info/file/21001/4945>)

- 1**  **Understand the verbal autopsy population**

The epidemiological and demographic characteristics of the verbal autopsy (VA) population will influence the cause of death (COD) patterns in that population. Look at geography, population age distribution, socioeconomic factors, the epidemiological profile and the proportion of hospital deaths for your VA population and comparator dataset. This will help in the plausibility assessment of COD patterns (Step 4).
- 2**  **Estimate the completeness of verbal autopsy death reporting**

Low levels of death reporting are likely to lead to significant bias in COD information, and will undermine the reliability your VA results. Where completeness of VA death reporting is below about 60 to 70 per cent, COD data should be interpreted with caution. Completeness estimates also help to identify geographical areas requiring more intensive support and follow-up to capture all deaths in a target population.
- 3**  **Assess the plausibility of the age-sex distribution of deaths from verbal autopsy**

VA deaths should follow an expected pattern based on what is known about the socioeconomic and epidemiological characteristics of the population on which they are based. This distribution can also be compared with other data to check whether they make sense. For instance, VA is often done for community deaths only, which typically results in an older age-distribution than datasets that also include hospital deaths.
- 4**  **Conduct a plausibility analysis on the cause-specific mortality fractions from verbal autopsy**

This step is **critical** for countries to follow if VA data are to be used with confidence. It involves interpreting the COD analysis from VAs using the cause specific mortality fractions (CSMFs) for the leading causes of death.

**Assess the plausibility of cause-specific mortality fractions from verbal autopsy**  
Epidemiological research has established predictable changes in the leading causes of death at different stages of life (e.g. children tend to die more from infectious diseases and accidents, whilst older adults will more often die from non-communicable diseases). The distribution of leading causes of death at each age in your VA data should reflect this. To check the plausibility, compare the leading COD by sex and age between the VA data and another comparator (often national) dataset. Your assessment will be determined by similarities in the populations of the different data sources (Steps 1-3), and, therefore, how similar you would expect the CSMFs to be. For example, you might expect a higher fraction of deaths due to acute (often infectious) diseases or injuries in a dataset that includes hospital deaths, than one that includes community deaths only.

**Assess the plausibility of verbal autopsy outputs in the context of risk factors and health determinants**  
An individual's exposure to population characteristics likely to increase the risk of death are known as risk factors. Risk factors may be specific to a disease or injury (e.g. proximity to water and drowning deaths), or may cause many disease outcomes or injuries (e.g. smoking and deaths due to vascular diseases, chronic obstructive pulmonary disease, lung and other cancers). Understanding the risk factors associated with, or present in, a population, will help to assess the plausibility of the CSMFs; for example, a higher proportion of lung cancer deaths in men is likely in countries where more men smoke than women.

**Calculate the extent and pattern of undetermined and residual causes of death**  
It is expected that a proportion of VA deaths will be assigned an *undetermined* COD, reflecting insufficient information from the VA interview to assign a cause. Undetermined deaths in the range of 10 to 20 per cent may be acceptable, but above this should be investigated since they may highlight issues with specific VA implementation sites or VA implementation as a whole. *Residual* cause categories, called 'other', are used by VA when the information from an interview is sufficient to assign a broad COD category (such as cancer) but not sufficient to assign a specific COD (such as a specific cancer site). While VA cannot disaggregate these causes further, it is possible to estimate the probable composition of residual categories using information from data sources such as hospitals or Global Burden of Disease estimates.
- 5**  **Present the main findings of your verbal autopsy data for policy action**

VA results need to be presented in a simple, concise and meaningful way for policy-makers to quickly understand the messages and implement actions. When preparing data for presentation, it is important to understand: (1) the information needed by policy-makers; (2) the best types of visualisations to communicate data, and; (3) the principles of integrating VA and MCCOD (hospital) data.

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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