

Appendix S1. Description of InterVA (Verbal Autopsy) model to assign cause of death

The InterVA model is a computer-based probabilistic model that can be used to assign cause of death using information obtained using verbal autopsy (VA) or maternal death audit (also called maternal death review).

The InterVA model has been revised four times and we used the latest available version, (Inter VA-4) for the paper by Mwangadere et al. This incorporates previous more specialised versions of the model for maternal and neonatal deaths and can be downloaded from www.interva-4.net. It is available as a zipped file of approximately 4MB and can be used on any PC under Windows XP, Vista and 7. Files can simply be downloaded and no additional installation procedure is required.

InterVA accepts a range of items of information ('indicators') about the circumstances of a death, including basic background information, characteristics of any illness (signs and symptoms) leading to death and previous medical history and processes these in a mathematical model based on Bayes' theorem.

InterVA-4 is designed to interpret verbal autopsy data for deaths from all causes and all ages by processing successive indicators and generates up to three likely causes of death from a total of 35 broad categories, with an estimated probability for each assigned likely cause of death provided. Fewer than three causes are displayed if the probability of the second or third cause is less than 50% of the probability of the preceding cause. Thus, the sums of the likelihood do not usually add up to 100. The program considers malaria and HIV/AIDS prevalence in the region (low or high). For Malawi, these were set at 'high' levels. The InterVA-4 software does not provide contributing causes.