

Hybrid Data Analytic Model for Determining Cause of Death Using Verbal Autopsy

Motivation

The causes of death reflect the society's conditions of morbidity and associated factors including the functioning of health care systems and other socio-economic factors. Though causes of death indicators play a vital role in countries' strategic planning, globally only 50% of death are certified as the cause of death. Further, the situation is even worse in developing countries where only one-third of deaths are recorded, being representative of only those deaths occurring in health facilities *ibid*. This is because most people in Low and Middle-Income-Countries (LMICs) die without medical attention as they are cared for at home to avoid in-hospital charges. WHO has endorsed a survey-based method, known as Verbal Autopsy (VA) to determine the cause of death as an alternative measure to the death occurring out of hospital.

Objective

The main objective of this study is to develop a verbal autopsy-based hybrid data analytic model for improved determination of the cause of death to produce accurate mortality statistics.

Methodology

The proposed study adopts a supervised machine learning experimental research approach using Naïve Bayesian algorithm.

Study Area

VA data collected from Iringa region in Tanzania will be used. However, the study has a potential to be deployed in tropical regions with similar settings.

Research contribution in realizing SDG(s)

The SDG 3 has nine outcome targets which overall seeks to ensure the health and well-being of all through tracking accurate statistics on causes of death and morbidity patterns. Therefore, this study proposes a verbal autopsy-based hybrid data analytic model for improved determination of the cause of death to produce accurate mortality statistics. Globally only 50% of death are certified with the cause of death, the situation is worse in the developing world settings. Failure to produce accurate statistics is a failure to reflect the society's conditions of morbidity.