Update on Case Fatality Risk in 46 sub-Saharan African countries to 17th July 2021

The Case Fatality Risk is a conditional probability – the proportion of confirmed COVID-19 confirmed cases who have died over a defined period. Although often referred to as a ‘rate’ or ‘ratio’ these usages are terminologically incorrect.

In the charts below, we present the evolution of the Case Fatality Risk (CFR), for each country over the course of the outbreak. The CFR is calculated for each day of the outbreak based upon the cumulative number of cases (denominator), and the cumulative number of deaths (numerator) reported to that date. We have excluded data from the early stages of each outbreak, up to the first change in CFR (these are time series plots) after the reporting of the 100th case. The reason for this is that the estimates of CFR are very imprecise and unstable up to this point.

There is a time lag between the confirmation of a new case, and death (if that is the outcome), which is thought to be around two weeks. As such, the proper denominator for the cumulative number of deaths reported to a certain date might be the number of cases reported two weeks previously. Our approach does not adjust for this ‘time lag bias’ and will therefore underestimate somewhat the true CFR. Others have assumed the time lag to be a constant across the course of the epidemic, which may not be the case. For example, as awareness increases, and case finding becomes more effective, the time lag may increase (with fewer late stage/ severe presentations), leading to greater underestimation of the CFR over time. An alternative approach is to limit the denominator (cases) to those whose outcome (recovered or died) has been defined, excluding cases that remain active. We have these data, but only for a subset of 20 countries. We plan to explore the extent of the time lag bias for these countries. The ‘total cases’ approach that we use here tends to converge over time with those based upon ‘closed cases’ as the epidemic reaches and passes its peak, with declining numbers of new infections.
MOZAMBIQUE (Eastern Region - 1st Case 23rd March)

Number of days since first confirmed case (beginning of outbreak)

NAMIBIA (Southern Region - 1st Case 15th March)

Number of days since first confirmed case (beginning of outbreak)