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**Background paper prepared for the WHO workshop:
"Tracking Health Performance and Humanitarian Outcomes"
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Measuring mortality, by F. Checchi, LSHTM¹

Summary

This paper reviews current indicators, standards and methodological approaches relating to population mortality in humanitarian crises. It also reviews the thresholds that are used to define emergency situations. It identifies major outstanding technical and policy questions for further discussion at the conference, as well as others that are the subject of debate in other, technical fora.

Mortality can be measured in two ways: Crude Mortality Rate -i.e. the amount of deaths occurring within the population at risk over a given period of analysis and Under Five Mortality Rate -i.e. the numerator and denominator of the rate only include children under 5. There is consensus, at least in the expression of emergency thresholds, that either CMR *or* U5MR in excess of thresholds constitutes an emergency. While U5MR is a more sensitive and timely indicator for detecting the onset of a nutritional crisis because, before reaching famine proportions, it can be inadequate to detect those crises where high mortality is due to violence or epidemic diseases that affect adults as much as children. Deciding which measure to use, or indeed whether to use both, should be decided on the basis of the particular crisis context and objectives of data collection.

The two approaches of setting mortality thresholds -i.e. absolute versus context-specific- are discussed. A fix (absolute) approach to setting mortality thresholds suggests that the responsibility of humanitarian actors is to reduce mortality rates to below a universal norm. The risk of this approach is that it may be insensitive to shifts in mortality trends where the baseline is lower than the global norm of 0.5 deaths per 10,000 people per day. The relative approach requires that mortality be reduced to pre-crisis levels. This requires baseline pre-crisis rates be available and mathematically privileges crises with a low baseline. In other words, one country's emergency may end up being better than a normal day in another.

Setting targets for what varies according to what thresholds are adopted. Baseline rates may themselves be judged unacceptable, and there is no consensus on whether relief should aim not

¹ The opinions expressed in this paper are those of the authors only.

only to bring mortality back to below emergency thresholds, but also to reduce it below the baseline. The occurrence of any death from certain preventable epidemic diseases or from severe acute malnutrition, tends to be automatically considered as crisis-associated excess mortality, while reduction of case fatality ratio is a key indicator of performance (ie. case management); targets of CFRs have been set for some diseases. While no standards of timeliness for the reduction of mortality below a given target have been set, there is some evidence that CMR normalises no earlier than six months after crisis onset.

The advantages and disadvantages of prospective surveillance versus retrospective surveys are discussed. The paper then reviews critical methodological issues of mortality surveys. It presents the common approaches in collecting information on mortality: the current and the past household censuses and the previous birth history. It discusses the difficulty of setting a sample size able to detect small changes in the rates with sufficient precision. It points to the lack of a standardized method to measure and classify cause-specific mortality.

The review classifies the main agencies/organizations that are collecting mortality data in crises: UN agencies, which are playing an increasing role, NGOs that use the data for advocacy and for monitoring purposes and academic institutions.

The paper concludes by raising a number of important technical and institutional questions around the indicators and standards for overall mortality, cause-specific mortality, excess mortality, timeliness, and data collection and measurement. Of particular relevance for the workshop, the paper stresses the need to improve coordination and standardization of mortality data collection. Improvement in this area will result in increased coverage of the crisis, more robust analysis of trends and reduction of wastage, security risks and costs associated to un-coordinated exercises.