Reviewer’s report

Title: Population survey sampling methods in a rural African setting: measuring mortality

Version: 1 Date: 19 February 2008

Reviewer: Somnath Chatterji

Reviewer’s report:

The paper is a useful contribution to the discussion on sampling strategies in resource poor settings. The paper is essentially a replication of the author's (P. Byass) earlier paper (ref. 17 in the current paper) but using data from a census in 2 provinces in Burkina Faso. The results are identical to what they found using the UK census data that parameters that have a skewed and 'biased' distribution (i.e., concentrated within certain pockets of the population) are poorly measured depending on the sampling technique used. As the authors acknowledge for most surveys that are distributed over a wide geographical area the most efficient strategy often will be a stratified multi-stage cluster design. Their illustration that for surveillance purposes a distributed strategy may be more efficient bears keeping in mind (a strategy used in China).

The authors should perhaps state explicitly that current DSS sites are often set up by convenience and not by any probabilistic design and perhaps future plans to set up more such sites should consider a distributed approach as they suggest and census data can be used to locate such sites and decide the number depending on the parameter of interest.

The authors should clarify also that the strategies they present apply to the level above the household as one assumes their method selected all households once the sampling unit just above the household was picked using their different method. In survey practice, households within such a unit would be typically picked using a systematic sampling strategy. Also the parameters they report on are estimated at the household level and if one was interested in individual level parameters (such as individual risk, e.g., smoking) the sampling strategies might produce different results yet again. This perhaps should be stated in the discussion.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.