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What People Worry about and What Makes them Sick are Rarely the Same: Risk Ranking for Raw Milk in Ethiopia

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Abstract

Food safety is of increasing concern in developing countries, not only as a major cause of avoidable sickness and death but also as a barrier to smallholder participation in markets.

Existing food safety systems are based on tradition and convention; they focus on visible problems (which may be less important), manage safety by command and control regulations, and often disadvantage small-scale farmers and processors. In contrast, a science based food safety system would prioritise food safety problems and preventive interventions using the best available data on the distribution of risk and on how risk can be reduced most effectively and efficiently.

Risk-ranking is particularly challenging in developing countries where data are scarce and difficult to collect. We have developed a conceptual framework which combines epidemiological, microbiological and behavioural data to rapidly, cheaply and imprecisely rank the hazards associated with animal-source foods. Key elements of the framework are: a stakeholder approach where those involved in a hazard (whether risk makers or risk takers) negotiate an acceptable level of risk; consideration of other positive and negative externalities (*e.g.* income generation) associated with the health hazard; supplementing or replacing conventional quantitative data by qualitative (PRA) data; use of rapid diagnostic tests using innovative technology (*e.g.* lateral flow).

We present the results of a proof of concept study applying the framework to assessing the hazards in raw milk in Ethiopia. After literature review and stakeholder engagement, rapid appraisals were carried out with 4 farmer and 5 consumer groups, and key informant interviews with doctors, veterinarians and farmer managers. This was followed by a cross-sectional survey of six high priority milk hazards. Finally a stakeholder workshop used risk matrices to assign priorities. We compare the results from this ranking with stakeholder perceptions of milk-borne hazards and show how these were often inaccurate and unhelpful.

The method is contrasted with conventional epidemiological studies and wider applicability is discussed.

Keywords: Ethiopia, milk-borne disease, raw milk, risk ranking