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Reply to 'Apropos "Evaluation of Serological Diagnostic Tests for Typhoid Fever in Papua New Guinea Using a Composite Reference Standard"'

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We acknowledge the importance of quality control in the delivery of diagnostic services and in medical research. The Papua New Guinea Institute of Medical Research (PNGIMR) conducts research in accordance with international standards where applicable (e.g., good clinical practice guideline compliance for intervention studies, World Health Organization National Influenza Centre, etc). In our typhoid diagnostics study (1), we planned and conducted the study in accordance with Standards for Reporting of Diagnostic Accuracy (STARD) guidelines (2).

While the PNGIMR has the capacity to conduct research meeting international standards, the delivery of health care and diagnostic services in Papua New Guinea (PNG) is poor by international standards. A recent survey found that only 15% of health care facilities had the capacity to diagnose malaria by either microscopy or rapid diagnostic tests (RDTs) (3). Conducting baseline surveys for Widal antibodies requires a level of laboratory capacity comparable to that needed for conducting malaria microscopy. We agree with the authors of the foregoing letter that the Widal test requires collection of baseline data to enable a clinically relevant cutoff titer to be determined (4). In PNG, such surveillance would need to be conducted throughout the country on account of the differing levels of endemicity of typhoid fever and also at regular intervals (or ongoing) due to the temporal changes in endemicity (1, 5). However, in PNG, ongoing surveillance for quality control (QC) and local mean antibody titer is beyond the means of the already overburdened health care services.

Due to the requirement for locally relevant baseline data, along with numerous other shortcomings (the reagents require cold-chain delivery and storage, conducting the test requires more laboratory expertise than a rapid test, and interpretation of the test result is subjective), we believe further efforts should be invested in the development and evaluation of typhoid fever RDTs. The rollout of a typhoid RDT would need careful management and should include laboratory training and national uniformity of the RDT used.

The global burden of typhoid fever is high, and it remains one of the most important causes of febrile illness globally on account of the severity of illness and the poor outcomes if untreated. Following the success of improved prevention, diagnosis, and treatment of malaria, the next step is to better diagnose and treat the other causes of fever. In countries such as PNG, QC should not be overlooked but should not burden health care services. RDTs typically have some QC mechanisms incorporated, target antibodies specific to the pathogen causing the disease, and reduce (though do not necessarily alleviate) the need for mean antibody titer data. Such tests are becoming competitively priced relative to Widal reagents and will be central to improved diagnosis of febrile illnesses such as typhoid fever.

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This is a response to a letter by Arya and Agarwal (doi:10.1128/CVI.00635-12).

doi:10.1128/CVI.00724-12