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### **Rapid diagnostic tests for malaria: 7 year results from a proficiency testing scheme run by uk NEQAS**

Rapid Diagnostic Tests (RDTs) have become increasingly popular in the laboratory diagnosis of malaria because they are low technology, require less expertise than blood film examination and performing the test is faster than making, staining and examining blood films. Since RDTs are being used more frequently in clinical laboratories particularly by on-call personnel and as UK NEQAS aims to ensure that participants have access to specimens that are relevant to their current laboratory practice, UK NEQAS Parasitology established an ISO 17043:2010 accredited Scheme for RDTs for malaria. We present findings from the first 7 years' performance of participants. The overall performance for specimens to date is good with a mean of 91% correct results from participants. On an average 4% of participants reported false negative results for specimens containing Plasmodium antigens and 2% reported false positive results for specimens containing no malaria antigens. More false negative results were reported when non-*P. falciparum* antigens (11%) were present than when *P. falciparum* antigens (1.6%) were present. The scheme has highlighted problems with the reporting of false positive and false negative results particularly in the detection of non-*P. falciparum* species. We discuss whether these problems could be kit related or operator related. Furthermore, to reduce the chance of antigen degradation potentially encountered by the EQA samples during transit to the participating laboratories, the UK NEQAS team investigated the feasibility of using freeze dried blood as sample matrix. Results of those analyses will also be presented here and will illustrate that freeze dried blood is a suitable matrix as the performance of freeze dried blood is at par with liquid blood with respect to performance at various parasitaemia levels, identifying different malaria species and suitability of use with various RDT kits.

#### **Biography**

Dr. Shrivastava has over 20 years of experience as molecular biologist. She has MSc and BSc in Microbiology from India. She was research assistant at the International Centre for Genetic Engineering and Biotechnology (ICGEB, New Delhi) wherein she researched protein profiling of *Plasmodium falciparum*. She went to do her D. Phil at University of Oxford on Molecular Epidemiology of Schistosomes. She followed it up with a post-doc at Cancer Research UK investigating a genome wide gene deletion for identification of novel cell cycle inhibitors. She now manages the UK NEQAS schemes for Parasitology and is successfully running 7 such schemes with at least 2 more in the pipeline. Jaya is also an honorary Associate professor at the London School for Hygiene and Tropical Medicine.

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