Summary Table

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<th>Sensitivity of <em>P. vivax</em> rapid antigen detection tests and possible implications for self-diagnostic use.</th>
<th>Martin P Grobusch, Thomas Hanschied, Klaus Gobels, Hortense Slevogt, Thomas Zeller, Gertrude Rogler, Dieter Teichmann</th>
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**Target antigens**
- HRP 2, Aldolase
- pLDH

**Comparative standard (s)**
- Giemsa stained thick/thin blood film microscopy

**Trial type: Accuracy / Cost-benefits/ public health impact / ease of use / behavioural**
- Laboratory based direct comparison of OptiMAL RDT and ICT Pf/Pv RDT to detect *P. vivax* in returned travellers from endemic areas presenting with fever. A review of self testing capability is made. No cost benefits are discussed. No RDT user characteristics are noted.

*Usefulness of paper (rated by reviewers): 4*

**Major findings/implications**
- Rapid malaria antigen detection is a useful diagnostic tool for travel clinics provided their drawbacks are acknowledged and variation in detection capacity recognised.
- The ICT malaria Pf/Pv is unreliable for the detection of non-falciparum malaria.

Origin: Germany

**Trial type:**
Laboratory based direct comparison of OptiMAL RDT and ICT Pf/Pv RDT to detect *P. vivax* in returned travellers and a review on self testing.

Travellers returning from endemic areas presenting as outpatients or after admission with acute febrile illness suggestive of malaria to the Department of Infectious Diseases, Charite, Berlin, Germany were included.

RDT and microscopy were carried out by independent examiners blinded to each others results. No indication of prior training or QC is given. No storage, lot numbers or expiry dates for the RDT are given.

**Results and analysis:**
664 samples were tested with ICT Pf/Pv RDT. 156 were microscopically positive for malaria with 17 diagnosed as *P. vivax*. ICT failed to detect 11/17 cases of *P. vivax* giving a sensitivity of 35%.

659 samples were tested with OptiMAL RDT. 155 were microscopically positive for malaria with 22 diagnosed as *P. vivax*. OptiMAL RDT diagnosed all *P. vivax* cases as *P. vivax* giving a sensitivity of 100%.

With both tests no false positives occurred giving a specificity of 100% for both.

In a second subset of 202 samples with 7 positive microscopically with *P. vivax*, ICT Pf/Pv detected 4 of 7 (57%) and OptiMAL detected 7/7 cases (100%).

**Self testing review.**
Several studies are quoted to outline the success or failure of self testing in different circumstances. The conclusion was that for non medically trained individuals in distress, the recent versions of the RDT may be too complicated to interpret.

**Implications:**
Rapid malaria antigen detection is a useful diagnostic tool provided their drawbacks are acknowledged and variation in detection capacity recognised. The ICT malaria P.f/P.v is unreliable for the detection of non-falciparum malaria.

*Usefulness of paper (rated by reviewers): 4*

* 1. No direct relevance. 2. Very unlikely to influence current practice. 3. Likely to influence current practice in some settings. 4. Likely to influence current practice in many areas. 5. Highly likely to influence current practice in many areas.

**Disclaimer:**

The views expressed in this report are those of the independent reviewers and do not necessarily reflect the views or policies of the World Health Organization.