

sharp contrast to the reported figures of 100% coverage by the Health Services(4). This shows that the reported figures are a gross overestimation of the actual immunization coverage. This also stresses the need for coverage surveys from time to time to assess immunization coverage instead of relying on the reported coverage.

In our study we found that children with high birth order, Muslim religion, those residing in rural areas, children with low parent education and socioeconomic status and those from high household size had significantly low immunization coverage levels compared to children from other groups (P <0.05). Also a trend analysis showed improvement in immunization status with improvement in parent education, socio-economic status and decreasing family size.

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A Bedside Dipstick Method to Detect *Plasmodium falciparum*

The paper by Shah and Deshmukh(1) describes their evaluation of a dipstick test to diagnose falciparum malaria. The test itself is not new, having already found its place in standard manuals(2). While the effort to evaluate the test in children is appreciated, some shortcomings have reduced the usefulness of this study. It is hoped that the comments will be accepted as helpful and constructive. The question of sensitivity in infants below 6 months has been raised by the

authors but not satisfactorily answered since the sample size was too small. It would have been ideal to measure not only the sensitivity but also specificity, without which positive and negative predictive values cannot be calculated. By confining the study sample to those with positive blood smears, the investigators lost their ability to measure specificity and also to 'blind' the observer(s) of the test.

The trademark name of a test kit should be so identified with the symbol ® or ™, and the source specified, when it is first introduced in scientific communications. Thereafter, the name may be repeated without such details. Thus the proper way to introduce the test is:

ParaSight F™ (Becton Dickinson, Sparks, MD, USA). In the discussion section they have named polymerase chain reaction and ELISA to detect antibody as two alternate rapid diagnostic tests other than blood smear examination(1). In the bibliography they included review papers from India (their references 9 and 12), but not original papers evaluating rapid tests in India(3-5). Thus, the impression created by the paper, unwittingly, is that there is no other rapid diagnostic test available on the market, especially in the dipstick format, and that no earlier study has been conducted in India on ParaSight F test or any other dipstick test.

Indeed two more immunochromatographic tests in dipstick format are commercially available, namely ICT Malaria Pf™ (ICT Diagnostics, Sydney, Australia) and OptiMal™ (Flow Inc., Portland, OR, USA) and all three have previously been evaluated in India(3-5). Both ParaSight F and ICT Malaria Pf detect the histidine-rich protein-2 (HRP-2) produced only by asexual forms of *P. falciparum*. Therefore they are useful to diagnose only falciparum malaria. The OptiMal test detects parasite-specific lactate dehydrogenase (pLDH) of falciparum, and non-falciparum parasites. Therefore, it can be used to diagnose falciparum and non-falciparum infections. All the 'antigens' of dipstick tests are released from parasitised red cells, for which reason the exclusive presence of gametocytes in the blood will not be detected by any of them, as the authors have rightly pointed out.

Three previous studies have evaluated ParaSight F, ICT Malaria Pf and OptiMal tests in India(3-5). The former two were on large study samples under field conditions(3,4). For ParaSight F the sensitivity and specificity were both 93%, while for ICT Malaria Pf the sensitivity was 100% and specificity 85%

(3,4). The OptiMal test was evaluated on 101 blood samples of 98 patients with proven malaria (34 with falciparum, 56 with vivax, one with malariae and 7 with mixed falciparum and vivax infection), in a hospital setting(5). The sensitivities were 94% for falciparum and 98% for non-falciparum(5). All mixed infections were identified as falciparum infection(5). The sensitivity was below 100% as three cases missed by OptiMal had only gametocytes on blood smear(5). We understand that a new version (OptiMal-2) that can identify the non-falciparum species by the species-specific pLDH is available(5).

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