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Yellow fever outbreak in Obomeng, Ghana-December, 2013

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Background: Yellow fever (YF) is an acute viral haemorrhagic disease transmitted by *Aedes* mosquitoes. Annually, 2-million cases with 30 000 deaths occur worldwide. On 12th December, 2013, the Ghana Eastern Regional Health Management Team was notified of a suspected YF outbreak in Obomeng village, KwahuAfram Plain South District (KAPSD). We investigated to verify the diagnosis, identify risk factors and recommend control measures.

Methods: We conducted active case-search and semi-structured interviews with health workers and community-members. A suspected YF-patient was any person with acute onset of fever followed by jaundice within two weeks from 1st- 22nd December, 2013 in Obomeng village. We reviewed medical records and collected blood samples from the index-case and seven contacts for laboratory diagnosis. Environmental assessment was conducted to identify mosquito breeding places. We determined the house index (HI), i.e., the percentage of houses positive for larvae, the container index (CI)-percentage of water-holding containers positive for larvae and Breteau index (BI) indicating the number of positive containers per 100 houses. BI, HI and CI exceeding 50, 35 and 20 respectively indicate a high risk of *Aedes*-transmitted yellow fever.

Results: The index-case, a 5-year old male presented with abdominal pain, jaundice and dark-brown urine. He did not attend school and frequently accompanied his parents to the farm near a monkey-forest. These monkeys occasionally visit their homes. He was vaccinated against YF and YF coverage in the village was 68%. BI, HI and CI exceeded 50, 35 and 20 respectively.

Conclusions: A vaccinated 5-year old male was infected with YF likely contracted from infected forest-monkeys in an Eastern-Ghana village. Mass insecticide spraying, bed-net distribution and mop-up YF vaccination were conducted.

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Accuracy of the Kato-Katz method in diagnosis of the diagnosis of *S. mansoni* and soil transmitted helminths infection in Zimbabwe

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There has been evidence in inference variations from small samples sizes to huge sample sizes so is sensitivity and specificity of diagnostics tools with different samples. We evaluated the Kato-Katz technique in the absence of a gold standard using Bayesian modeling for the determination of *S. mansoni* and soil transmitted helminths infection (STHs) in Zimbabwe. This is a secondary analysis based on primary school children (n=15 818) aged 10-15 years who were enrolled in the national mapping of *S. mansoni* and STHs. A Bayesian approach was used to evaluate the diagnostic performance of the evaluation tool. The fomol ether diagnostic technique was generally more sensitive with *S. mansoni* detection operational characteristics as follows (Sensitivity: 0.995; 95% Bayesian Credible Interval (BCI): 0.989-0.999), STHs-Hookworm detection (Sensitivity: 0.991; 95% BIC: 0.988-0.993), STHs-*A. lumbricoides* detection (Sensitivity: 0.992; 95% BCI:0.989-0.995) and STHs-*T. trichiuria* (Sensitivity: 0.988 95% BCI: 0.926-1.00); then the Kato- Katz diagnostic technique (for *S. mansoni* detection (Sensitivity: 0.981; 95% BCI:0.971-0.994), STHs-Hookworm detection (Sensitivity: 0.966; 95% BCI:0.963-0.970), STHs-*A. lumbricoides* detection (Sensitivity: 0.967; 95% BCI; 0.974-0.981) and STHs-*T. trichiuria* (Sensitivity: 0.988; 95% BCI; 0.974-0.981). However, specificity is higher for the Kato- Katz technique compared to the fomol ether concentration technique. The fomol ether concentration technique has better performance compared to the Kato-Katz technique and have increased the number of primary school children who need treatment in the field compared to recommended the Kato- Katz technique alone.

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