

# Evaluation of a portable blood lead analyzer as an alternative to graphite furnace atomic absorption spectrophotometer

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## **Abstract:**

Objective: To evaluate Lead Care II analyzer, a portable electro-analytical instrument used to rapidly analyze blood lead levels (BLL) in children, and compare it to gold standard, graphite furnace atomic absorption spectrometry (GFAAS) Methodology and results: Twenty two (22) duplicate fresh capillary blood samples were tested using both Lead Care II kits and GFAAS. There was a strong, positive correlation ( $r = 0.787$ ,  $r^2 = 0.62$ ) between the BLL determined by Lead Care II and GFAAS. In this study, Lead Care II analyzer scored 57% sensitivity, 80% specificity and positive predictive value (PPV) of 0.8. However, its predictive value depends on prevalence of disease and the number of individuals. Conclusion and application of findings: LeadCare II offers an opportunity to cost effectively screen for childhood lead poisoning in Kenya. Deployment and use of this technology could improve patient care by providing instant results. During a visit to a health centre, lead levels can be determined and treatment initiated immediately where necessary