Malaria Microscopy Competency in Liberia Post Ebola Disease Outbreak

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Abstract:

Since 2010 Liberia has progressively moved toward parasitological diagnosis of malaria. However in the last two years - since the first confirmed case of Ebola virus disease (EVD) on March 17, 2014, through January 14, 2016, when the World Health Organization (WHO) declared an end to the most recent outbreaks - the public health system has been overwhelmed managing this new disease. Due to risk from blood exposure, national policy mandated returning to clinical diagnosis of malaria instead of drawing blood. Now the Ministry of Health and Social Welfare is in the process of restoring essential and quality-assured health services in governmental and non-governmental health facilities. As a first step, County Health Team Diagnostic Focal Persons (CHT-DFPs) supporting decentralized training, and supervision activities were prioritized for retraining and competency assessment in malaria diagnostics. In February 2016, the National Malaria Control Program, with support from MalariaCare, conducted the first refresher training and microscopy competency assessment for CHT-DFPs from 13 of 15 counties post-the EVD outbreak. Trainees were assessed on parasite detection and parasite quantitation and scored against WHO minimum grades for expert level microscopists. Twelve (12) of 13 participants scored greater than 80% (M 93%; Mdn 94%) on parasite detection and all (100%) participants scored above 50% (M 66%; Mdn 67%) on parasite quantitation, resulting in equivalent designations of WHO Levels 1 (n=12) and 2 (n=1) for these 13 microscopists. There was an 11% improvement between pre- and post-test scores for parasite detection and a 47% improvement was observed for parasite quantitation . Despite an almost two-year interruption in malaria diagnostic services, microscopy capacity within the County Health Teams appears to remain strong.

Continued training and monitoring of this cadre using proficiency test panels can be achieved using a recently procured slide bank, putting Liberia on track to move forward with plans to decentralize training and supervision activities to the county level.

Introduction of competency based selection criteria for WHO External Competency Assessment for Malaria Microscopy

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Abstract:

In 2015 MalariaCare introduced a new selection criterion to the WHO External Competency Assessment for Malaria Microscopists (ECAMM) to determine the best-qualified candidates among those who met course entry requirements. We describe a competency-based modification to existing ECAMM course entry requirements that can be used to identify the best-qualified candidates for participation in WHO ECAMM courses. Pools of candidates were screened using existing WHO ECAMM course entry requirements. A second selection criterion was added based on satisfactory performance from a five-day pre-ECAMM refresher training course. Of the 119 participants included in the final WHO ECAMM data set, 103 (86.6%) were assessed prior to 2015 and did not participate in a pre-ECAMM course; however, 16 (13.4%) microscopists assessed in 2015 participated in a pre ECAMM course and were selected for advancement to WHO ECAMM courses based on attainment of prescribed competency levels. Post-test pass rates for WHO ECAMM course components among microscopists not participating in pre-ECAMM courses were 82.5% for parasite detection (mean score = 89.8%), 26.2% for species identification (mean score = 62.5%), and 43.7% for parasite quantitation (mean score = 34.8%). Among participants who were subjected to the revised selection criteria, post-test pass rates for all 3 WHO ECAMM course components were 100.0%. Mean post-test scores within this participant pool were 97.6% (parasite detection), 90.2% (species ID), and 60.8% (parasite quant).Participants attending WHO ECAMM courses before 2015 were 3.7 times less likely to attain WHO certification, whereas all participants from the 2015 participant pool attained WHO certification based on their accreditation levels. WHO ECAMM course outcome (certification vs. non-certification) was not independent of participant selection criteria type, $X2$ (1, N=119) = 35.87, p<0.0001. To identify the best qualified participants, our results suggest that course administrators may consider a second competency-based selection criterion based on satisfactory completion of a five-day pre-ECAMM refresher training course.