MalariaCare
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Notes from the field

Strengthening diagnostic systems in Guinea

Laboratory staff at Kindia Regional Hospital.
Photo: Dr. Ramata Doukoure.

In Guinea, national statistics show that among children less than five years of age, malaria accounts for 31% of consultations, 25% of hospitalizations, and 14% of hospital deaths. This estimate does not include malaria cases seen in the community or in private facilities. Among the general population, malaria also is the primary cause of consultations (34%), hospitalizations (31%), and death (14%), according to the Ministry of Health.

Most malaria cases reported in national statistics are clinically diagnosed based on the observation of symptoms, but this is not as accurate as using a rapid diagnostic test (RDT) or laboratory-based microscopy. The ability to provide high-quality diagnostic services is especially important in countries where the burden of malaria is high. As one regional malaria diagnostic expert explains, "The ability to conduct microscopy for diagnosing malaria is very poor in Guinea. Microscopy is a complex process that relies on highly trained staff based in well-equipped health facilities and laboratories. Even when laboratory technicians are well trained, they often lack electricity or necessary microscopy supplies. This means that point-of-care diagnostics, such as RDTs which don't rely on power and can be administered without laboratory training, are important."

According to the 2012 Demographic and Health Survey, 47% of children ages 6–59 months tested with RDTs were found to be positive for malaria, while 44% of this same group were found to be positive through microscopy. "This is where the MalariaCare project comes in", explains Dr. Daouda Ndiaye, MalariaCare Technical Advisor. "Being able to diagnose malaria cases correctly, quickly and safely means that laboratory technicians and health providers must be able to conduct microscopy and RDTs in line with national and global standards. In partnership with the Ministry of Health, we train core groups of supervisors on malaria diagnostics who then go on to train others. We also provide onsite training and follow-up supervision at the facilities to ensure that diagnostics are provided in a high-quality manner." Strengthening laboratory systems not only helps detect malaria, but also improves Guinea's ability to diagnose other infectious diseases. This approach also allows other partners to use MalariaCare-trained supervisors and training materials to provide cascade training to technicians at the district and peripheral levels.

According to Dr. Ndiaye, "When we started, almost none of the laboratory technicians enrolled in the supervision program were achieving sufficient scores on malaria microscopy skills and only about 50% of their facilities met standards for malaria slide cross-checking against supervisor readings." Most recent supervision data show that following MalariaCare interventions, 65% of laboratory technicians were

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able to conduct 90% of malaria microscopy tasks according to desired standards (they met the established target), and 90% of the intervention hospitals met slide cross-checking standards. In addition to efforts to strengthen microscopy in higher-level facilities, MalariaCare also trained providers to correctly administer RDTs: after three rounds of support visits, there were significant improvements in these skills. As Dr. Ndiaye elaborates, "Strengthening both microscopy and RDT abilities has been critical. The new capabilities mean that malaria can be diagnosed and treated more rapidly and effectively at various levels of the health system."

After completing MalariaCare's malaria diagnostic refresher training course, a technician from bustling Matoto Health Center in Conakry explained, "Before MalariaCare, I had not received any formal microscopy training. At first, I scored the lowest level for microscopy ability–level four equivalent–which does not meet the standard for accreditation. Following three days of intensive training support, I scored at level one and I am now training and supervising others on microscopy at the Dunka National Hospital."

With support from the US President's Malaria Initiative, MalariaCare continues to work closely with Guinea's National Malaria Control Program, health facilities, and laboratories to strengthen diagnostic capabilities. As Dr. Ndiaye puts it, "We are helping the national program in its efforts to implement a successful quality assurance system for malaria diagnostics at all levels of the health system. As qualified supervisors are supported to train others in the country, we will make more sustainable contributions to malaria response in Guinea."

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