

Using Mobile Technologies to Detect Poor-Quality Medicines in Benin

Field-based screening streamlines drug safety surveillance in resource-constrained settings



Staff members at Benin's National Laboratory for the Quality Control of Medicines and Medical Consumables practice using a Raman spectrometer, one of two mobile technologies that are enhancing country capacity for medicines quality assurance.

With Financial support from the U.S. President's Malaria Initiative (PMI), the Promoting the Quality of Medicines (PQM) program has been partnering with the Government of Benin since 2009.

As one of Africa's most frequent points of entry for falsified medicines, Benin requires a rapid and cost-effective way of finding poor-quality drugs before they reach patients. Since 2017, the country has been using two mobile tools, the suitcase-sized GPHF-Minilab™ and the hand-held Raman spectrometer, to screen suspicious pharmaceuticals in the country's commodity pipeline. Technologies like these not only enable quick screening of products in the field, but also lessen the burden on national quality assurance laboratories by ensuring that only samples that fail screening will be subject to more complex (and costly) testing.

The Promoting the Quality of Medicines (PQM) program—which is funded by USAID, further supported in Benin by the U.S. President's Malaria Initiative (PMI), and implemented by the U.S. Pharmacopeial Convention—trained staff members at Benin's National Laboratory for the Quality Control of Medicines and Medical Consumables (LNCQ) in GPHF-Minilab™ and Raman spectrometer use as part of a larger effort from 2015 to 2017 to build the Laboratory's capacity in analytical quality control methods. In late 2017, the LNCQ team provided follow-on training to 13 students from local public and private universities on the mobile technologies, expanding the number of testers and fulfilling an organizational mandate to collaborate with the education sector.

The payoff for mobile medicines screening in Benin was nearly immediate—while also facing laboratory constraints due to infrastructure issues, the LNCQ conducted GPHF-Minilab™ or spectrometry screening on 156 samples in 2017. In a high-profile example of regulatory action early the following year, the Benin Customs Authority seized and destroyed several dubious-looking medicine parcels at the Cotonou Cadjehoun Airport after mobile screening revealed they were falsified antimalarials.

LNCQ Director, Dr. Parfait Adjakidje, emphasizes that while mobile technologies can help significantly streamline medicines quality surveillance, they are not a replacement for laboratory testing. “No single tool can be used to analyze all medicines,” he advises. “Mobile screening allows us to detect when the active ingredient in a medicine is either missing or weakened, and laboratory testing then defines the product's exact composition.”

As Benin uses mobile screening to expand its ability to find and remove substandard and falsified medicines from the market, it is improving the protection of patients from often-lethal consequences and contributing to renewed confidence in the national health system.