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SIAPS
Systems for Improved Access
to Pharmaceuticals and Services

Sierra Leone Project Update

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A PRELIMINARY RESPONSE TO CONTROLLED DISPOSAL OF EXPIRED PRODUCTS

Background: A Buildup of Expired Products

The catastrophic Ebola epidemic that began in 2014 aggravated Sierra Leone's already weak pharmaceutical supply system, highlighting the fact that the country's pharmaceutical storage, handling, distribution, and waste disposal programs were in dire need of improvement.

One challenge has been inadequate storage space at all levels, which is due in part to the volume of expired and obsolete products that take up available space. Cluttered storage also makes stock management more difficult and dispensing less efficient. It raises the risk of health providers using the wrong products, or dispensing expired ones by mistake.

In Sierra Leone, individual health facilities and districts do not have appropriate and safe disposal equipment, such as incinerators. At the central level, expired products were previously sent to a private, for profit company that burned them in the open, with little or no regard to public safety and the environment.



Figure 1. Waste burns in the open air and without environmental oversight in Freetown.



Figure 2. Discarded, uncontained products next to a broken incinerator.

In response, SIAPS, as a member of the Free Health Care Initiative Forum of the Ministry of Health and Sanitation (MOHS) and partners, joined those involved in supply chain management in Sierra Leone—DDMS, UNICEF, DFID, Clinton Health Access Initiative (CHAI), Crown Agents and IPA (CAIPA), and Sierra Leone’s National Pharmaceutical Procurement Unit/Central Medical Store—to collaborate on a plan to handle products for reverse logistics and proper disposal. The turnkey activity of segregating, sorting, documenting, packing and preparing for collection by the district medical stores is part of the technical assistance the SIAPS Project supports in the country; namely, establishing and using a Continuous Results Monitoring System (CRMS) in nearly all health facilities. The CRMS tracks a series of indicators for medicine availability and disease case management, including storage adequacy, overstocks of medicines, and expiry management. CRMS data are updated every two to three months.

Following the new reverse logistics and disposal procedure, expired products segregated and packed at PHUs were returned to the districts, focusing on those health facilities already participating in the CRMS. UNICEF, CAIPA, and MOHS deliver essential medicines by truck to district stores every quarter and collect the expired medicines for the return trip. If truck space was insufficient, products were stored in the districts in containers CAIPA rented until the next collection.

Products were then transported to a central area in Freetown, where CAIPA, which was funded by DFID, then took over disposal. CAIPA sorted the products by disposal method: open burning, burial, incineration, or quarantine. It finalized the process in collaboration with the DDMS/MOHS, the Pharmacy Board of Sierra Leone, the Ministry of Finance, citizen representatives, local police, and selected development partners. Incineration was completed using five mini-incinerators, which is a slow, inefficient process, burning approximately three cubic meters of medicines per hour.



Figure 3. The five mini-incinerators used by CAIPA.

RESULTS

All health facilities using CRMS (nearly 1,000 nationwide) participated in the pharmaceutical waste management initiative. Facility managers use a claim and return form for documenting the name, quantity, batch number, expiration date, and price of the products, thereby solidifying the process, practice, and auditability for efficient, safe reverse logistics and disposal.



Figure 4. A health facility in Koinadugu district before (left, center) and after decluttering and removal of expired products for disposal.

CAIPA no longer has funding for the incineration project, so AECOM International is planning to take it over. The timeline for this has yet to be determined. Ideally, each district will support its own incinerator. Like many countries, Sierra Leone needs a pharmaceutical disposal system that uses appropriate technology and expertise. The current system is an interim measure to deal with the legacy of expired and obsolete products of mass/unregulated donations in response to the Ebola epidemic, but it is not a long-term solution.

The long-term solution is part of the system strengthening technical assistance the SIAPS project provides, including:

- Evidence-based quantification of needs
- Moving from a push system of distribution to a pull system
- Minimizing expiry by good storage
- Record keeping
- Rational use practices
- Redistribution of products from a facility with excess stock to a facility experiencing stock-out

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, implemented by Management Sciences for Health (MSH), received two years of funding in September 2015 from the US Agency for International Development (USAID) to provide technical assistance for rebuilding and strengthening the post-Ebola pharmaceutical supply chain management system in Sierra Leone. The project covers health management teams, medical stores, hospitals, and peripheral health units in all 13 districts and involves the country's Directorate of Drugs and Medical Supplies (DDMS), which is responsible for coordinating and providing pharmaceutical services (including promoting rational medicine use) in Sierra Leone; the National Pharmaceutical Procurement Unit; and the Pharmacy Board of Sierra Leone.