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PEPFAR
U.S. President's Emergency Plan for AIDS Relief

AIDSTAR-One Success Story

Disposal of Expired ARVs and Test Kits in Nigeria

How Scrubbing and Quenching Became an Important Part of the Health Care Waste Management Process



Workers at the BOSKEL Nigeria facility add expired ARVs to an incinerator.

“We are now more conscious of waste and thus have implemented strategies to minimize waste and conserve resources.”

***—Joseph Enesi, Program Officer,
Christian Health Association of
Nigeria/ Nigeria Indigenous
Capacity Project***

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AIDSTAR-One
AIDS SUPPORT AND TECHNICAL ASSISTANCE RESOURCES

Hundreds of tons of pharmaceuticals are shipped into or produced within low- and middle-income countries each year to treat the approximately 4 million HIV-positive individuals currently receiving antiretroviral therapy (ART) and taking antiretroviral (ARV) drugs.¹ The vast majority of these medicines are taken by the people who need them, but a fraction—whether through changes in treatment regimens or through issues with procurement or supply chain management—expire before they can be used. Even this fraction, however, equates to tons of dangerous medical waste.

Many health facilities do not have a system in place for disposal of expired pharmaceuticals. Often, these drugs are partially burned in open fields, where toxic gases can harm people living in the area. The drugs that escape the flames are sometimes picked through by scavengers; some are even repackaged and sold as counterfeits. Ingesting expired medications can be lethal and, for HIV-positive individuals who rely on ARVs, an expired drug can have a deleterious impact on their health.

Recognizing the problem of expired pharmaceuticals, the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) Nigeria Prevention and Logistics Technical Working Group and its implementing partners requested technical assistance from the AIDSTAR-One project and the Supply Chain Management System (SCMS) project (both funded by PEPFAR through the U.S. Agency for International Development) to coordinate a “waste drive” to dispose of expired ARVs, HIV test kits, and

¹ PEPFAR. 2010. About Us: Treatment. <http://www.pepfar.gov/about/138312.htm> (accessed September 2010)

laboratory chemicals. To begin, they estimated the quantity of expired commodities and mapped the locations and capacities of final treatment sites in the country.

AIDSTAR-One and the Supply Chain Management System projects coordinated a “waste drive” to dispose of expired ARVs, HIV test kits, and laboratory chemicals.

With their estimate complete, AIDSTAR-One and SCMS combined logistic and waste management expertise with technical assistance to deal with approximately 70 tons of expired product generated from July 2005 to April 2010. They transported the waste to a central location—a BOSKEL Nigeria, Ltd. facility in Port Harcourt—where it could be incinerated according to international best practices and in line with World Health Organization rules and regulations. BOSKEL’s incinerators are equipped with special devices, including “scrubbers” and “quencher,” that reduce the amount of gas that goes into the air while the expired medicines are being converted to ash.

Normally, ash produced this way would be buried in a pit (protected or unprotected). As an

environmental consideration, BOSKEL instead decided to convert the ash into bricks, each a little smaller than a cinderblock. These bricks are currently being tested for safety.

The initiative also focused on improving forecasting and supply chain management for ARVs and other expired drugs and products, enabling facilities to quantify appropriately to reduce waste. Joseph Enesi, Program Officer with the Christian Health Association of Nigeria/ Nigeria Indigenous Capacity Project, and a partner who participated in the waste drive said, “We are now more conscious of waste and thus have implemented strategies to minimize waste and conserve resources. Also our inventory management has improved even at the site level. Our facility stores and our central store have been de-junked as accumulated waste has been properly disposed of...the waste drive has been a positive contribution to improvement of our logistics system.”

With better pharmaceutical waste management procedures put in place through the expertise of AIDSTAR-One and SCMS, fewer of these once life-saving medicines will end up as harmful waste, and those that expire will be properly disposed of so they do not cause harm.

The authors’ views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

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