

Medical Biotech Laboratories: Mobile Medical Waste Management

Proper disposal of medical waste, particularly hazardous materials such as needles or syringes, is critical to preventing disease transmission and promoting public safety. Medical waste can cause pollution and disease, and infectious waste, especially sharps, poses a risk to anyone who comes into contact with it. The World Health Organization estimates 4 percent of HIV infections among health care workers worldwide may be attributable to occupational sharps injuries. Injuries with infected syringes and/or surgical instruments cause an estimated 66,000 hepatitis B, 16,000 hepatitis C, and 200–5,000 HIV infections among health care workers each year.

In Ethiopia, there is no government entity or private organization that provides a medical waste management service. For smaller facilities and laboratories, purchasing an incinerator is cost-prohibitive, both due to the high cost of purchasing the equipment and to the ongoing operating costs required to maintain it. Most health facilities resort to burning their medical waste in make-shift pits or by using low-tech, highly-polluting incinerators, which can lead to the emission of hazardous toxins. Moreover, illegal dumping of medical waste with general municipality garbage is a common phenomenon. The HANSHEP Health Enterprise Fund selected Medical Biotech Laboratories (MBL) to receive a grant to provide a solution for Ethiopia's medical waste management.

The Business Model

MBL established a sister company, DaZeB-Medical Waste Management Services PLC, to serve as a mobile medical waste management service, the first of its kind in Ethiopia. MBL has been providing laboratory services since 1997, including routine diagnostics, research, training, and laboratory services for HIV. The new service would expand on this offering, as an important component of any HIV testing and treatment service is ensuring the proper disposal of sharps and other appropriate medical waste management.

Following the design and construction of a medical waste treatment plant on the outskirts of Addis Ababa, MBL will set up contracts with health facilities to pick up their medical waste on a regular basis with a fleet of customized collection vehicles. MBL's service will enable facilities to comply with local regulations regarding waste disposal. The pick-up service is designed to ensure that waste is safely transported to the processing facility. MBL is also training medical, technical, and administrative personnel on the safe disposal of medical waste, to ensure safety procedures are understood and followed.



Jessica Scramton

Dr. Dawit Wolday, Medical Biotech Laboratories executive director

Grantee at a Glance

- Vision: Preventing the spread of disease through occupational exposure
- Innovation type: Ethiopia's first mobile medical waste management company
- Health focus: HIV and AIDS
- Target population: Health facilities across all sectors
- Country: Ethiopia

By introducing a shared medical waste treatment plant in Ethiopia, MBL will address the challenges small health facilities face in disposing of their waste properly. Providing customized and comprehensive medical waste solutions helps decrease the threat of exposure to contaminants and disease, safeguarding the work place and surrounding community. It also ensures compliance with medical waste disposal regulations, minimizing the risk of fines and penalties for medical facilities. By bringing the service directly to facilities, MBL's new mobile medical waste management service makes safety and compliance easy for health facilities that are often under-resourced.

Producing Necessary Supplies Locally

Through the HANSHEP Health Enterprise Fund, SHOPS provided support for MBL to establish the mobile waste management service. As the treatment plant undergoes construction, MBL is developing standard operating procedures for the collection, storage, transport, and disposal of medical waste. MBL is also preparing other essential aspects of their service, including procuring vehicles and an incinerator that will prevent the release of toxins into the environment.

As they met with health facilities and established processes for their service, MBL identified a previously unforeseen need. Proper handling of medical waste requires a comprehensive chain of actions beginning at the point of generation and extending to the final disposal. Health care waste generators must place waste in leak-proof, color-coded receptacles, and they must place and keep sharps waste in sharps containers. However, in Ethiopia there is an extremely limited supply of standard and approved waste bags, boxes, and sharps containers. The few facilities that use such products must purchase

costly imported items or receive them through donation.

With SHOPS assistance, MBL will integrate manufacturing these necessary items into its new facility. By producing containers locally and supplying them at affordable prices, MBL will ease the burden of complying with safe medical waste handling practices. This integrated approach addresses challenges directly linked to improving HIV outcomes by reducing the risk of HIV and other infections at health facilities through the consistent use of these containers.

The Impact

“ I see success not as making money at the end of the day... I will define success when all the medical facilities in Ethiopia handle medical waste with care.” – Dr. Dawit Wolday, Medical Biotech Laboratories executive director

MBL will initially serve the greater Addis Ababa area, home to more than 500 public and private health facilities. A central medical waste treatment facility will reduce pollution by burning waste in a way that reduces toxic emissions and by aggregating it from multiple sites to reduce the treatment cost per kilogram. The collection service will also make regulation easier since waste management from multiple facilities will be consolidated into a single service. Additionally, the new medical waste treatment plant will provide new employment opportunities and generate tax revenues for the government. To date, MBL has service orders from 30 facilities, and has secured investment from a local investor that will support business growth. Once fully operational, MBL aims to expand its service to more health facilities throughout the country.

For more information about the HANSHEP Health Enterprise Fund, contact:

Caroline Quijada, Deputy Director
SHOPS Project
caroline_quijada@abtassoc.com

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For more information about the SHOPS project, visit: www.shopsproject.org



Abt Associates Inc.
4550 Montgomery Avenue, Suite 800 North
Bethesda, MD 20814 USA
Telephone: 301.347.5000 • Fax: 301.913.6019
www.abtassociates.com