SAFE, **SECURE**, & SUSTAINABLE

An alternative solution for expensive infectious substance transport packaging.

Sandia National Laboratories (Sandia) is working with the University of Maiduguri (UNIMAID) to develop instructions for building and/or manufacturing a locally sourced, low-cost, safe and secure infectious substance packaging in Nigeria. Sandia will leverage in-house subject matter expertise on package design, testing, and material transport. Sandia also has knowledge and experience of infectious substance transport in low-resource countries, and will combine its knowledge and expertise to develop instructions to create packaging for the safe transport of samples between facilities both in routine and emergency situations. Sandia will work with UNIMAID, use internet searches, knowledge of local markets, and interviews and surveys of Nigerians to explore the types of locally available materials to potentially use for this alternative packaging solution.

With this research, Sandia will develop several options for manufacturing locally-sourced packaging with security features that may include features such as physical sample protections, tamper evidence, and an anonymity or "lost-in-crowd" feature. Each solution will be tested for compliance with UN international packaging test standards for high-risk infectious substance shipping (Category A). These tests will include drop tests, impact tests, and pressure/leakproof tests. Solutions that meet UN test standards will be further evaluated for safety/security, reusability, availability of materials, ease of manufacture, and cost. Each option will also be tested by local, in-country partners.

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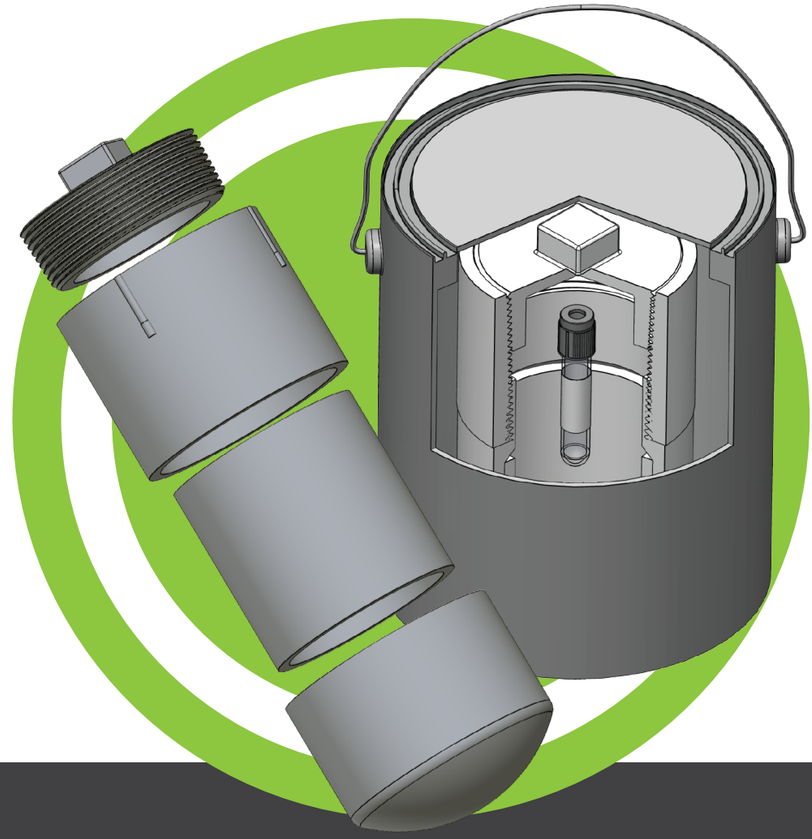
Easy to follow instructions for building an infectious substance packaging that:

- Is reusable and easily decontaminated
- Meets UN international test standards (drop, impact, pressure, etc.)
- Features built-in security measures (e.g. tamper evident seals)
- Is built with low-cost materials available in local markets
- Incorporates lost-in-crowd features, making the package less likely to be targeted by thieves
- Is easily manufactured with simple tools

Sandia is seeking partners in Nigeria for this effort and will hold a series of remote discussions to determine how the developed packaging solutions can be used in field operations, provide feedback, and look for how solutions are being implemented and working in the field. Options or solutions that are the most effective at meeting the required criteria will be published in a white paper. Then detailed manufacturing instructions will be made available through the Global Biorisk Management Curriculum (GBRMC) library, published in papers, and distributed to all in-country partners.



Sandia National Laboratories

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