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ASLM
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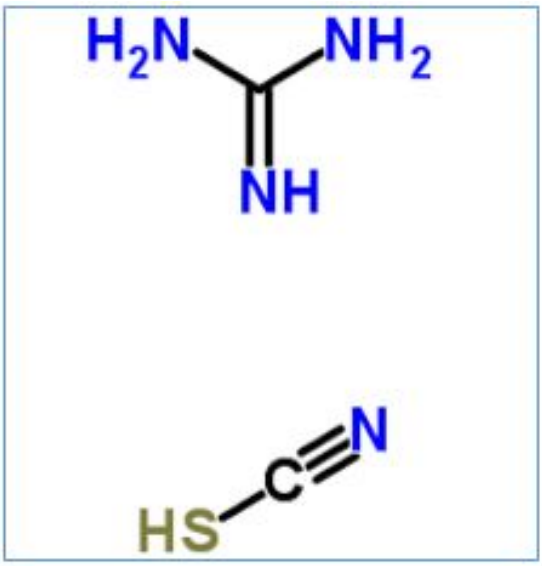
This month's edition of Point-of-Care News Digest (POCND) focuses on Part 1 of a multi-part series on waste management for HIV viral load and early infant diagnosis for both point-of-care and conventional laboratory testing.

Innovative Solutions to Waste Management in Point-of-Care and Conventional Nucleic Acid Testing

Abuja, Nigeria – In December 2018, the Integrated Diagnostics Consortium (IDC) hosted a session on *Waste Management Strategies for HIV Viral Load (VL) and Early Infant Diagnosis (EID)* during the ASLM2018 Conference. This article is the first in a series bringing you highlights and innovations that were presented during that session and how they have been implemented in Malawi and Mozambique.



Guanidinium thiocyanate

By 2020, more than 30 million HIV VL tests globally will have been conducted annually. As a result of these tests, an estimated one million litres of effluent chemical waste and 2 million kilograms of solid waste will have been produced each year. Molecular diagnostic testing for HIV VL/EID produces a potentially hazardous chemical waste that contains guanidinium thiocyanate. Found in some point-of-care (POC) cartridges and the liquid or effluent waste of conventional laboratory testing, guanidinium thiocyanate produces hydrogen cyanide gas when it comes in contact with an acid or oxidizer, such as bleach. Guanidinium thiocyanate is toxic to humans and animals. If left untreated and poured down the drain, this chemical compound can pollute waters and harm aquatic life.

Multiple and safe hazardous waste management solutions do exist for low- and middle-income countries. These may include co-processing in industries like cement factories, high & medium temperature incineration, encapsulation, and possibly filtration and neutralization. However, common laboratory waste management practices currently being employed by the low and middle income countries include:

- Chemical waste is poured down the sink and flushed with water (with sinks connected to open sewers or just infiltrated underground);
- Cartridges are placed in waste containers and removed by a licensed waste management company;
- Liquid waste is collected in containers and then packaged and transported by a licenced waste management company for incineration;
- Liquid waste is collected into large tanks and then transported and disposed by a waste management company via high or medium temperature incineration;
- Waste is stored until an elimination solution is found nationally.

Countries with inadequate capacity for these waste management solutions can potentially export their waste to countries with robust waste management systems. However, the export process can be lengthy due to required authorisations, in addition to international transport conventions, such as the Basel Convention, that must be adopted and enforced.

In Part 2 of this series, we will take a look at case studies of diagnostic services' waste management practices for select countries.

Acknowledging contributions by Presenters at the session in Abuja, Nigeria
Joos Van Den Noortgate, MSF. Belgium
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***IDC**- The Integrated Diagnostics Consortium brings together diagnostics procurers, technical partners, implementers and countries to discuss ways to improve the supply and use of diagnostic health products. The Consortium members include African Society for Laboratory Medicine, Clinton Health Access Initiative, Elizabeth Glaser Pediatric AIDS Foundation, FIND,*
USAID Global Health Supply Chain Program, Global Fund to Fight AIDS, Tuberculosis and Malaria, ICAP, Médecins Sans Frontières, Office of the US Global AIDS Coordinator and Health Diplomacy, Centers for Disease Control and Prevention, United States Agency for International Development, Solthis, Stop TB Partnership, United Nations Development
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