



ODIN project

Strengthening Environmental Surveillance To Advance Public Health Action

Workshop Report, Annex B

M2.1 Stakeholder workshops arranged, and the questionnaire launched at TZ, DRC and BF

Dar es Salaam, Tanzania 22nd to 23rd of November, 2023

List of Participating Institutions
National Institute for Medical Research - NIMR (Host)
The Finnish National Institute for Health and Welfare (THL)
Ministry of Health (MoH)
Ministry of Water (MoW)
Ministry of Health, National Public Health Laboratory (NPHL)
Association of Public Health Laboratories (APHL)
Prime Minister Office (PMO) – Directorate of Disaster Management
Vice President Office (VPO) – Environment Division
President Office – Regional Administration and Local Government (PORALG) <ul style="list-style-type: none">• Regional Epidemiology Officer – Dar es Salaam• Regional Epidemiology Officer – Tanga
Water Institute (WI)
Government Chemist Laboratory Agency (GCLA)
Tanga Urban Water Supply and Sanitation Authority (Tanga-UWASA)
Dar es Salaam Water and Sewerage Authority (DAWASA)

1. Keynote: Environmental monitoring of waterborne pathogens [THL]

Presentation followed by discussion. Main discussion points raised by the participants:

- In Africa, centralized sanitation is not common, presenting challenges for surveillance programs. The ODIN project may choose to increase sample collection by including samples from decentralized sanitation networks including surface water and rivers.
- The ODIN project will consolidate stakeholders' recommendations regarding the specific pathogens to prioritize in the implementation of Work Package 5, which focuses on sampling procedures. A guide handbook will be developed to facilitate the harmonization of sampling techniques across the sites.
- Environmental surveillance may be expanded to dumping sites in future programs and sampling techniques should be designed to take into account the harmful chemicals that may hamper subsequent microbiological investigations.

2. ODIN project overview and study sites [Local PI – NIMR]

- The project has seven work packages that will be accomplished in three years.
- Wastewater surveillance offers an early opportunity to detect major disease outbreaks.
- The ODIN project's major outcomes will be to develop a surveillance system that in future may be sustained to complement the surveillance program coordinated by the Ministry of Health.

3. An Overview of Water supply and sanitation services in Tanzania [Water Institute, Ministry of Water]

- Water supply and sanitation in Tanzania is being managed by various semi-autonomous authorities in regional and small towns jurisdictions.
- Currently there is a significant investment in improving water access and sanitation for all Tanzanians. Rural water projects are especially important, as they will help to improve the lives of millions of people who currently lack access to clean and safe water and sanitation infrastructure.

4. Mobile laboratory network and genomic sequencing capacity in Tanzania [MoH-NPHL]

- The current mobile lab network has five labs available in five zones and a capacity for surveilling TB infections.
- The network has modular mobile labs that can respond to pathogens of outbreak potential such as Marburg, Ebola etc that need laboratory biosafety level 3 and 4 .
- The modular labs cannot perform bacterial culture or AMR testing, however, it has basic molecular tools such as PCR and qPCR.

5. AMR surveillance implementation in Tanzania [MoH]

- The development of an Antimicrobial Resistance (AMR) surveillance framework includes specifying sites, priority samples, and priority pathogens.

- In Tanzania, nine hospitals and five veterinary centers participate in AMR surveillance.
- The initiative involves strengthening laboratory services to support surveillance, with a passive focus on the human sector and both active and passive components in the animal sector.
- However, environmental surveillance of AMR in the country is still weak and need to be strengthened

6. Infectious disease and AMR surveillance and detection using Integrated Disease Surveillance and Response (IDSR) in Tanzania: Opportunities and Challenges [MoH, Epidemiology]

- IDRS was first adopted in 1998.
 - At MoH, IDSR is coordinated by the Department of Preventive Services Epidemiology Section: Surveillance unit.
 - To improve real time reporting IDSR is using mobile technology.
 - IDSR implementation:
 - Diseases under immediate case notification: bacterial meningitis, cholera, yellow fever, plague, measles, rabies, acute flaccid paralysis, bloody diarrhea, anthrax, acute viral hemorrhagic fevers, human influenza caused by new subtypes, neonatal tetanus, epidemic viral, keratoconjunctivitis, smallpox.
 - Diseases under weekly reporting: malnutrition, animal bites, pneumonia < 5 years, diarrhea < 5 years, typhoid, tick borne relapsing fever, onchocerciasis, trachoma, trypanosomiasis, malaria.
 - Diseases reported monthly: diseases under vertical programs, non-communicable diseases, malnutrition, pneumonia below 5 years.

7. Wastewater based surveillance project at NPHL [MoH, NPHL]

- The National laboratory (NPHL) has started a pilot study to conduct wastewater surveillance in Dar es salaam.
 - The study funding is limited to laboratory supplies.
 - Pilot study areas includes: Mikocheni, Vingunguti, Msasani, Kipata-Ushirika, Mabibo, and Buguruni Kisiwani.

8. Harnessing regional and global potential – Advancing environmental and wastewater surveillance for public action in Tanzania [Researcher, AFREDAC, IHI/UCT/U.Oxf]

- ODIN outcomes may build a platform that stakeholders from this meeting might have a collaborative program in future that will work together on One-health wastewater surveillance.
- Genomic sequencing is an important aspect of wastewater surveillance and 85% of African countries have the potential to generate and share genetic sequencing data.

9. Mentimeter.com survey about priority pathogens and AMR targets

- The Mentimeter.com survey was implemented.
- General discussion on priority pathogens to include in wastewater surveillance.

10. Coverage and access to WASH practices in rural and urban communities-Tanzania [MoH-WASH program]

- The National Sanitation Campaign (NSC) is being implemented in 184 local authorities.
- WASH is still a major challenge in the pastoral communities.
- Traditional practices are major factors to poor sanitation in villages and semi-urban areas.
- The NSC has made a significant impact on the reduction of cholera outbreaks and diarrheal cases.

11. One Health Approach Implementation in Tanzania [Prime Minister Office Disaster Management Unit]

- One Health approach implementation can be traced from 2007 and 2013, and it was formally established in 2015.
- The coordination of OH-Activities is overseen by the Disaster Management Department's One Health Section, which operates under the Prime Minister's Office.
- Recent achievement includes outbreak responses coordinated using an OH approach on recent occurrences of Rabies, COVID-19, Marburg, and Anthrax.

12. Environmental surveillance for Poliomyelitis [Immunization and Vaccine Development, VPD Surveillance, MoH]

- Environmental surveillance of Polio was established in Tanzania in April 2019, initially with four sites in Dar es Salaam. As of August 2023, there are 15 sites in Tanzania, located in Arusha, Dar es Salaam, Dodoma, Kagera, Kilimanjaro, Mbeya, Morogoro, Mtwara, Mwanza, Rukwa, and Unguja.
- Site selection criteria includes presence of fecal matter, a drain with continuous flow, high risk area, dense population, accessible area, free of chemical contamination.
- The surveillance program sends samples to Uganda for laboratory testing.
- There is an opportunity to establish synergies and collaboration in sampling between the ODIN and the Polio program, further discussions will be needed

13. The Webropol platform questionnaire considering the clinical and environmental surveillance systems

- The Webropol questionnaire was filled.
- General discussion on the thematic areas of the questionnaire.