BASELINE INFORMATION FOR INTEGRATED ANTIMICROBIAL RESISTANCE SURVEILLANCE IN ZAMBIA Environment

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Outline

- Environmental Sector
- Pollution Control
- Baseline AMR - Environmental
Introduction

- ZEMA is a statutory body established under the Environmental Management Act No. 12 of 2911.
- ...provides for integrated environmental management, the protection and conservation of the environment and the sustainable management and use of natural resources.
Mandate

- ...to do all such things as are necessary to ensure the sustainable management of natural resources and protection of the environment, and the prevention and control of pollution...
To safeguard human welfare and the environment, through effective environmental management for present and future generations.
AMR and the Environment
Focus

- identifying ...
  - waste generation sources
  - waste disposal methods and
  - laboratories that have the capacity to perform microbiological and analytical studies in environmental samples.

- This framework ...can be useful for other countries as well.
Sources of information

- Zambia Environmental Management Agency
- Ministry of Water Development, Sanitation and Environmental Protection
- Ministry of Local Government
Currently, not much information w.r.t the environment is available with the stakeholders.

- The information gaps
  - No and distribution of point sources;
  - volume of waste generated across each point source;
  - volume of unused drugs from healthcare, domestic and market settings,

- ....could be collected in subsequent years.
Waste Generation

- Pharmaceutical manufacturing companies
- Human and veterinary healthcare settings
- Animal establishments
- Abattoirs/slaughter houses
- Animal feed manufacturing plants
- Dairy and meat processing units
- Effluent treatment plants
- Sewage treatment plants
Waste disposal methods

- Pharmaceutical manufacturing companies, human and veterinary healthcare settings:
  - Incineration; ash is treated as non-hazardous waste
  - Inertisation for injectables, and dilution for liquids

- Animal establishments, abattoirs/slaughter houses, animal feed manufacturing plants, dairy and processing units
  - Liquid waste is treated and discharged into the aquatic environment
  - Solid waste is disposed of at the general waste disposal sites (landfills)
  - Condemned meat at slaughter houses and processing units is incinerated
Waste disposal methods

- Effluent treatment plants
  - Effluent from industrial process such as food processing companies is discharged into the aquatic environment
- Sewage treatment plants
  - Trickling filter systems, activated sludge system
- Unused/expired antimicrobials
  - Incineration in hospitals
Laboratory Capacity

- No laboratories with ZEMA. However, ZEMA collaborates with the following laboratories/institutions*:
  - Alfred H Knight Industrial Laboratory
  - National Institute for Scientific and Industrial Research
  - UNZA
  - Zambia Bureau of Standards
  - Toxicology laboratory commissioned at UNZA
*These collaborating laboratories do not perform AMR testing in the environmental samples in particular, but with some capacity they could adapt or include AMR

Notes: Additional baseline information can be obtained from other stakeholders such as CSO, Dairy/Beef Association of Zambia, HPCZ, local municipality, MoH, MoHE, MFL, VCZ and ZAMRA
End

Thanks