



# INFECTION PREVENTION AND CONTROL

## STANDARD PRECAUTIONS: WASTE MANAGEMENT

### NISLT IPC PRESENTATIONS

ODESEYE ADEBOLA

*Distribute*



# INTRODUCTION

- **Waste** refers to a material, **substance**, or a by product that **is no longer useful** and required to be eliminated after a completion of a process.



NISLT IPC PRESENTATIONS

*Do not Distribute*



# WASTE MANAGEMENT ?

- Activities or ways by which Waste generated is well managed to prevent adverse or negative effect on the environment.

## TYPES OF WASTE

- 1) Solid waste
- 2) Liquid waste

- ❖ LABORATORY SYSTEM
- ❖ HEALTH CARE SYSTEM

Laboratory/ Health-care waste a times contains potentially harmful microorganisms that can infect **patients**, **laboratory workers** and the **environment**

## COMPONENTS OF WASTE DISPOSAL

Collection

Segregation

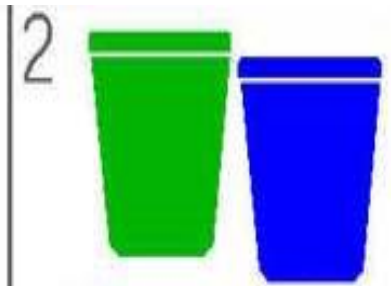
Transportation

Treatment/Recycling

Disposal



Domestic waste  
collection



Segregation  
(bio-degradable and  
non-degradable)

3

Recycling



4

Disposal





# TYPES OF LABORATORY WASTE

## Risk Waste

Infectious waste

Pathological waste

Sharps

Pharmaceutical waste

Genotoxic waste

Chemical waste

Radioactive waste

## Non-Risk Waste

Paper and cardboard.

Packaging.

Food waste,

Aerosols. (spray)



# INFECTIOUS WASTE:

- **This is the waste contaminated by any type of bacterium, virus, parasites or fungi,**

**includes:**

- **Laboratory Culture plates**
- **Waste from surgery and autopsies (post-mortem).**
- **Waste from infected patients.**
- **Waste from infected haemodialysis patients.**
- **Infected animals from laboratories.**
- **Any material having been in contact with infected patients**



NISLT IPC PR

*Do not*



# PATHOLOGICAL WASTE

## Waste generated from:-

- **Human or animal Tissues processing( Histology)**
- **Human or animal Organs**
- **Body parts**
- **Blood and body fluids**

NISLT IPC PRESENTATIONS

*Do not Distribute*

# PHARMACEUTICAL WASTE



**Hazardous**

**Non- Hazardous**

**Hazardous**

- **Nicotine**
- **Melphalan**
- **Drugs consisting heavy metals/ preservatives such as *Thimerosal***

**C PRESENTATIONS**

**Non-Hazardous**

- ❖ **Contraceptive**
- ❖ **Hormones**





# SHARPS WASTE



**Sharps include the followings:**

- **Needles**
- **Syringes**
- **Scalpels**
- **Infusion sets**
- **Surgical blades**
- **Broken glass**

PRESENTATIONS  
*Distribute*



# GENOTOXIC WASTE

Genotoxic wastes are a subset of hazardous waste that contain

✓ Mutagenic chemicals:- **Ethyl methane sulphonate**

✓ Teratogenic Chemicals :-  
**Thalidomide, Mercury, and Lead**

✓ Carcinogenic properties.  
nickel, cadmium, **radon**, vinyl chloride  
( Lung cancer)



# RADIOACTIVE WASTE

- This kind of waste is generated from the use of **radioactive Isotopes** for the treatment of **genetic disorder** e.g.
  - **60 cobalt** or **131 Iodine** for treatment of Cancer and thyroid cancer.
- It can also consist of any glassware or other supplies contaminated with this liquid.



NISLT IPC PRE  
*Do not D*



# MANAGEMENT OF WASTE



## STEPS FOR THE WASTE MANAGEMENT

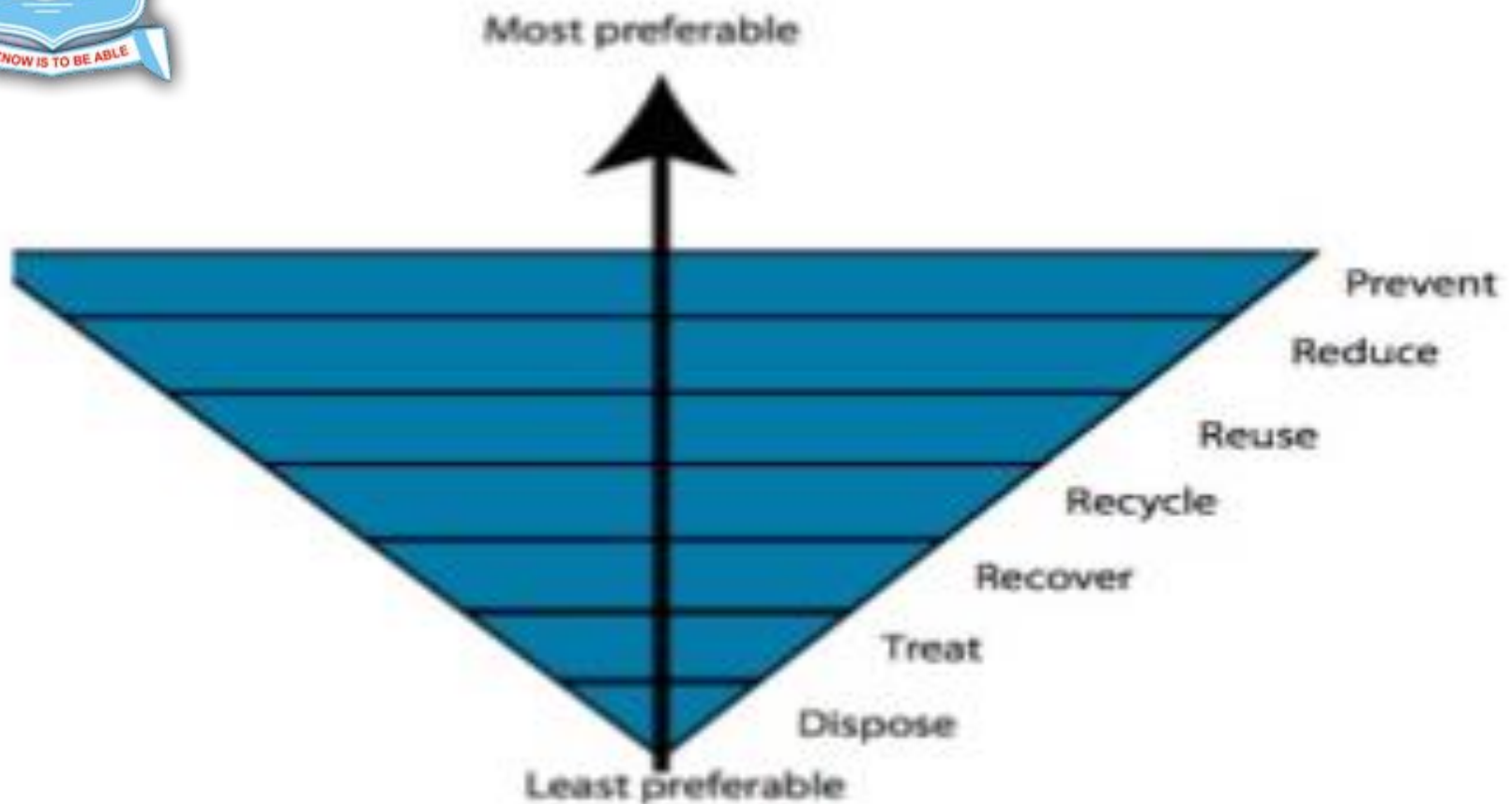
- **Waste Minimisation**
- **Waste Segregation**
- **Waste Collection and Storage**
- **Waste Transportation**
- **Policy Document on waste management**

NISLT IPC PRESENTATIONS

*Do not Distribute*



# WASTE MINIMISATION



- **Waste minimisation is defined as the prevention of waste production/ reduction of waste at its source**



# Storage

- **Specific locations for temporary waste storage should be designed**
- **It must have been included during the construction**
- **Waste must always be segregated into different fractions based on their potential hazard**
- **The segregation of waste items is the responsibility of the handler.**
- **When stored, waste should be monitored closely and removed in a timely manner.**
- **All waste containers should be clearly labelled and**
- **Hazardous and non-hazardous wastes should never be mixed.**

NISLT IFC PRESENTATIONS

*Do not Distribute*



# WASTE SEGREGATION

## GENERAL WASTE

Kitchen Waste,  
Paper & Tissues &  
Water Bottles & Cans



DISPOSAL

Secured  
Land Filling

## INFECTED PLASTICS

Syringes, Gloves &  
Plastic Waste



Incineration

Secured  
Land Filling

## INFECTED WASTE

Soiled, Anatomical,  
Chemical Liquid, Cytotoxic,  
Laboratory Waste,  
Expired & Discarded  
Medicines



Auto  
Claving

Deep Burial

Plasma  
Pyrolysis/  
Incineration

## GLASSWARE

Antibiotic Vials,  
Metallic Implants,  
Glassware  
Material  
Except Cytotoxic



RE-Cycler

## SHARPS

Needles &  
Cut Glasses



Mutilate

Sharp Pit

Common  
Treatment  
Facility

Disposal Bin →



# TREATMENT

- Identify the **nature** of the waste prior to treatment
- The choice of the treatment of the waste is crucial
- The waste should be able to be treated without creating other hazardous by-products.

- 
- Thermal,
  - Chemical,
  - Irradiation,
  - Mechanical.
  - Incineration

NISLT IPC PRESENTS

*Do not Distribute*

Etbr

charcoal

Liquid waste





## TREATMENT RECOMMENDED PROCEDURE

- **Microbiological waste** e.g. culture, and vaccine, should be Autoclaved
- **Pathological waste tissue**, organs, blood  
Liming Dig pit- place lime-add waste- add more lime-add soil
- **Infectious fluid waste** , chemical 0.5% Sodium Hypochlorite solution. Let sit for 15 minutes

NISLT IPC PRESENTATIONS

*Do not Distribute*



# Waste collection and Transportation





# WASTE DISPOSAL

**HOW DO YOU  
DISPOSE YOUR  
WASTE?**



PRESENTATIONS  
*tribute*



# WASTE DISPOSAL

	Waste Category	Treatment / Disposal
<b>Category No 1</b>	<b>Human Anatomical Waste (human tissues, organs, body parts)</b>	<b>Incineration/ deep burial</b>
<b>Category No.2</b>	<b>Animal Waste (animal tissues, organs, body parts carcasses, bleeding parts, fluid, blood and experimental animals used in research, waste generated from veterinary laboratory)</b>	<b>Incineration/ deep burial</b>
<b>Category No 3</b>	<b>Microbiology / Biotechnology Waste (wastes from laboratory cultures, stocks or specimens of microorganisms live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological,</b>	<b>Local autoclaving/ microwaving/ incineration</b>
<b>Category No4</b>	<b>Waste sharps (needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharp)</b>	<b>Disinfection (chemical treatment/autoclaving /microwaving and mutilation/shredding</b>



# Waste Disposal

Option	Waste Category	Treatment / Disposal
Category No 6	Soiled Waste (Items contaminated with blood, and body fluids including cotton, dressings, soiled plaster casts, lines, beddings, other material contaminated with blood)	Incineration/ Autoclaving/ Microwaving
Category No. 7	Solid Waste (wastes generated from disposable items other than the waste sharps such as tubing, catheters, intravenous sets e.t.c).	Chemical treatment/ Autoclaving/ Microwaving and Mutilation/ Shredding
Category No. 8	Liquid Waste (waste generated from laboratory and washing, cleaning, housekeeping and disinfecting activities).	Disinfection by chemical treatment and discharge into drains
Category No. 9	Incineration Ash (ash from incineration of any bio-medical waste)	Landfill
Category No. 10	Chemical Waste (chemicals used in production of biological, chemicals used in disinfection, as insecticides, etc.)	Discharge into drains for liquids and secured landfill for solids

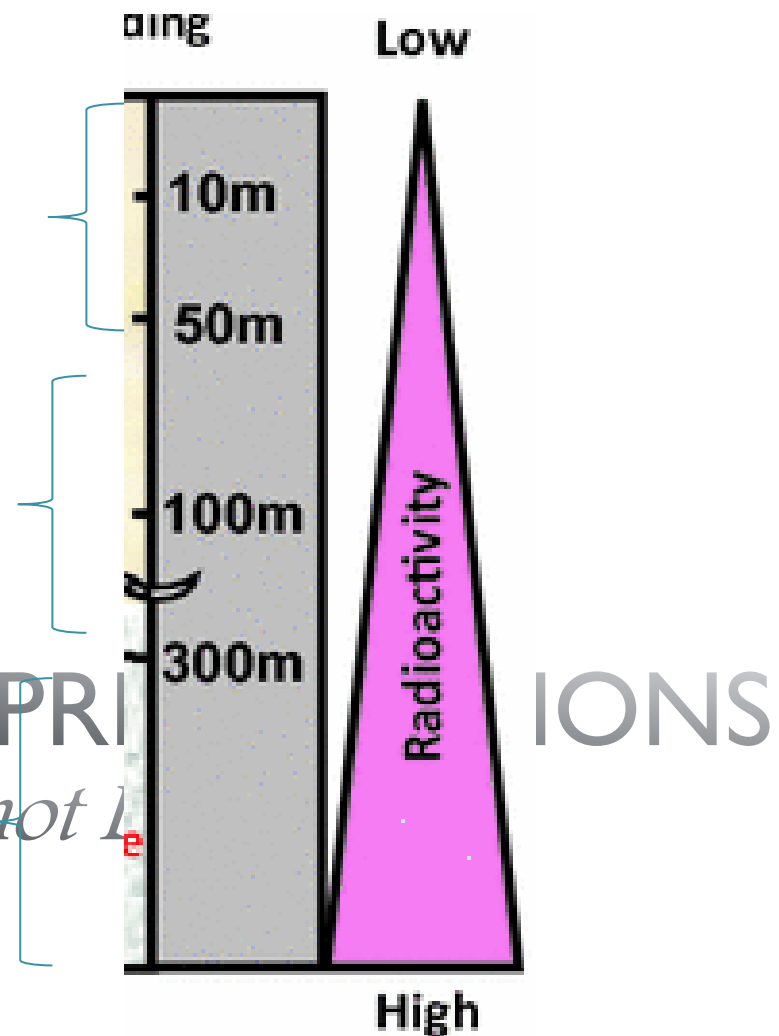


# RADIOACTIVE WASTE DISPOSAL

Low level radioactive sample, disposed inside a pit of 10-50m below the Ground level

Medium level radioactive sample, disposed inside a pit of 50m-100m below the Ground level

High level radioactive sample, disposed inside a pit of 300m below the Ground level



NISLT IPC PRI

*Do not l*



# Important Information

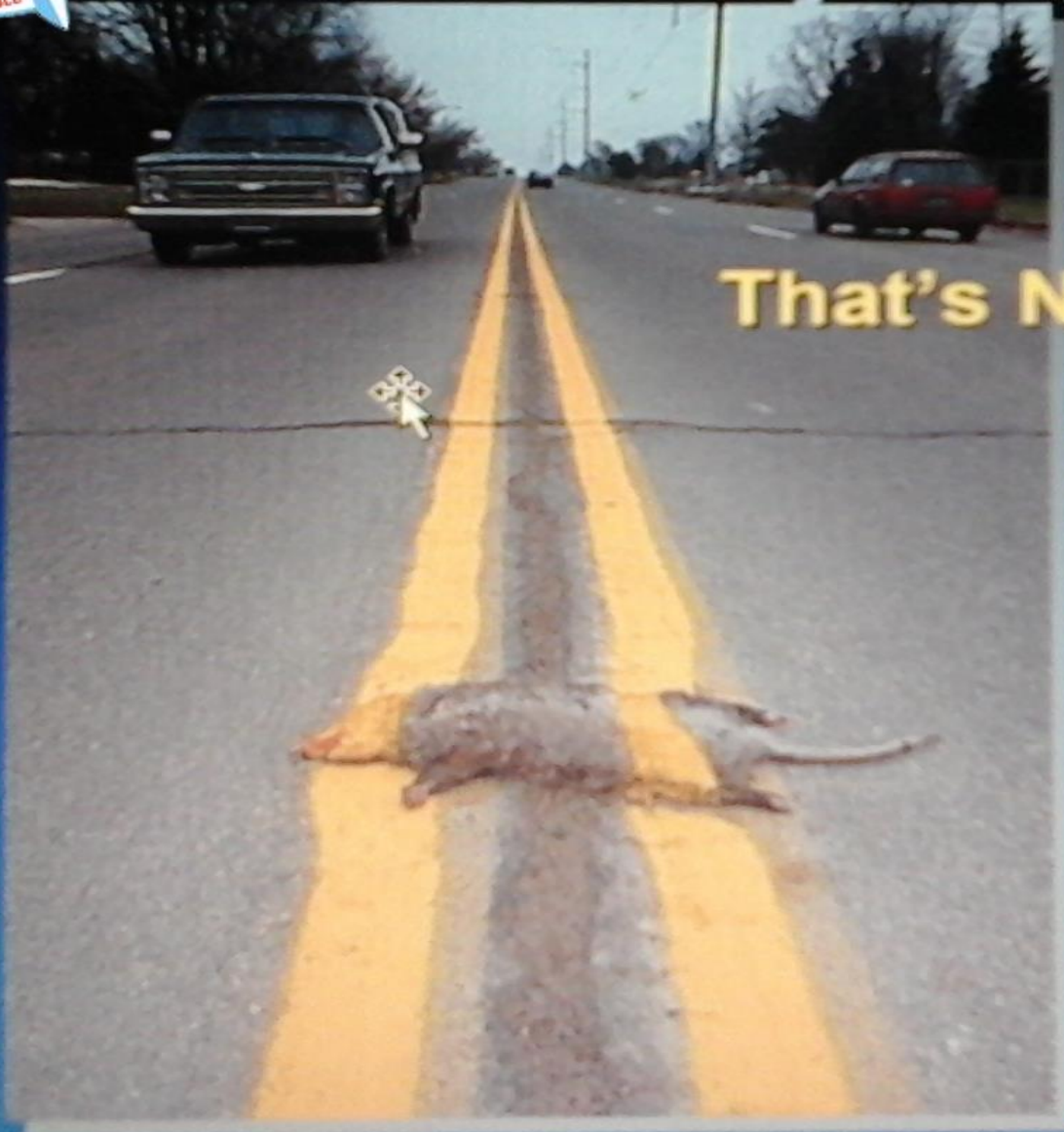
- **Drivers, collectors and other handlers must aware of the nature and risk of the waste.**
- **written instructions regarding the procedures to be adopted in the event of spillage**
- **Training should be conducted periodically in the area of waste management**
- **A well structured policy document – for waste management and its supervision, monitoring and implementation.**

NISLT IPC PRESENTATIONS

*Do not Distribute*



# Conclusion



**That's Not My Job!**





**Thank you**

**NISLT IPC PRESENTATIONS**

*Do not Distribute*