



# Epidemiology of Hazards of Disease Transimission Risks

## OBJECTIVE

To Understand

1. Modes of Diseases Transmission
2. 5-Factors & Universal Precaution
3. Risk analysis of Hospital Waste V/s Household Refuse

National  
Workshop on  
Hospital Waste  
Management  
-March, 2000

IDC

New Delhi



## **BACKGROUND: Hospital Waste Awareness /Regulations**

- In USA Clinical Waste Washing up on Resort Beaches.
- In India:
  - Fear of spread of HIV, HBV, AIDS
  - Recycling of Medical Disposable through Waste handlers.

National  
Workshop on  
Hospital Waste  
Management

-March, 2000

IDC

New Delhi



## **DISEASE TRANSMISSION- Indirect Mode**

- **VECTORS**
  - Flies
  - Landfill
  - Rodents
  - Sea Water
  - Syringe needles

National  
Workshop on  
Hospital Waste  
Management

-March, 2000

IDC

New Delhi



## **DISEASE TRANSMISSION- Direct Mode**

- **Injuries due to Infected SHARPS**
- **Exposed Open Wounds**

National  
Workshop on  
Hospital Waste  
Management

-March, 2000

IDC

New Delhi



## HOUSEHOLD WASTE

- **Contribute to large amount of micro-organisms, include:**
  - **Tissues**
  - **Dog and Cat Faeces**
  - **Soiled Diapers**
  - **Putrescible Foods**

National  
Workshop on  
Hospital Waste  
Management

-March, 2000

IDC

New Delhi



## HOSPITAL WASTE V/S HOUSEHOLD REFUSE- Bacterial Contamination (Arithmetic Mean/G)

<b>Bacteria</b>	<b>Household</b>	<b>OU</b>	<b>IM</b>
<b>Althaus et al, 1983</b>			
Aerobic B.	$7.2 \times 10^6$	$8.8 \times 10^3$	$2.6 \times 10^6$
Coliform B.	$8.4 \times 10^5$	$1.1 \times 10^2$	$9.4 \times 10^5$
<b>Kalnowski et al, 1983</b>			
Aerobic B.	$6.1 \times 10^9$	$2.3 \times 10^4$	$3.4 \times 10^8$
Gram-negat	$6.0 \times 10^7$	$5.8 \times 10^3$	$7.2 \times 10^4$
<b>Jager et al, 1989</b>			
Total B.	$2.2 \times 10^8$	$5.0 \times 10^5$	$1.1 \times 10^7$

**SW**

National  
Workshop on  
Hospital Waste  
Management  
-March, 2000

IDC

New Delhi



## CONCLUSION

### Summary of Findings:

- Global Warming will enable geographical distribution of Vectors
- Greater Emphasis on Handling & Management of Household Waste
- Education and Training of better Hygiene and Safer Sanitation
- Diseases Trans. Universal Precaution,
- Disease Trans. Modes, Lack of Understanding & misled media coverage

National  
Workshop on  
Hospital Waste  
Management

-March, 2000

IDC

New Delhi