



## BIO MEDICAL WASTE MANAGEMENT : SCIENCE & TECHNOLOGY

**NEWS:** The stigma of HIV and the birth of biomedical waste regulations: a story of tragedy and reform

### WHAT'S IN THE NEWS?

The 1987 "Syringe Tide" in the U.S. highlighted flaws in medical waste disposal, prompting reforms like the Medical Waste Tracking Act. In India, delayed action led to the Biomedical Waste Rules (1998), influenced by the HIV/AIDS crisis and pollution concerns.

### Syringe Tide Incident and Biomedical Waste Management

#### The "Syringe Tide" Incident (1987)

- Beaches in the U.S. were littered with used syringes, blood vials, and body tissues, creating public panic.
- The incident occurred amidst the worsening HIV/AIDS epidemic, heightening fear and stigma around medical waste.
- Tourism losses were estimated at \$7.7 billion due to public outrage and deserted beaches.

#### U.S. Response

- The **Medical Waste Tracking Act (1988)** was passed, formally regulating hospital waste as hazardous.
- Set strict guidelines for handling, transporting, and disposing of medical waste.

#### India's Biomedical Waste Management

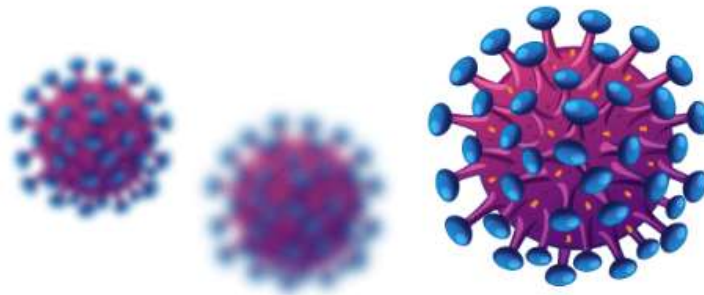
- 1986: Environmental Protection Act enacted, but biomedical waste was not deemed hazardous.
- 1989: Hazardous Waste (Management and Handling) Rules excluded biomedical waste, leaving disposal to local bodies.
- 1996: Supreme Court's Dr. B.L. Wadehra judgment highlighted pollution issues in Delhi, pushing reforms.
- 1998: **Biomedical Waste (Management and Handling) Rules** introduced, regulating hospital waste as hazardous.
- 2016 and 2020: Amendments ensured stricter protocols for waste segregation, treatment, and disposal.



## WHAT IS HIV?

### Human Immunodeficiency Virus (HIV)

is a virus that attacks cells that help the body fight infection.



#### The HIV/AIDS Link

- The global HIV/AIDS epidemic spotlighted unsafe healthcare practices and waste management.
- Influenced both U.S. and India's legislative actions toward safer biomedical waste disposal.

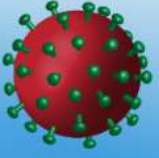
#### Ongoing Challenges in India

- Rural and resource-limited areas struggle with proper biomedical waste management.
- Healthcare workers face occupational hazards, and gaps in compliance persist.

## HIV and AIDS: What's the Difference?


### HIV

- HIV is the virus that causes HIV infection.
- HIV damages the immune system by killing CD4 cells.



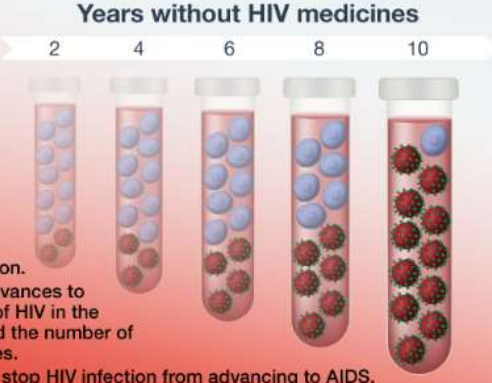
### CD4 Cells

- CD4 cells are part of the immune system.
- HIV attacks and kills CD4 cells.
- Loss of CD4 cells makes it hard for the body to fight off infections.



### AIDS

- AIDS is the last stage of HIV infection.
- As HIV infection advances to AIDS, the amount of HIV in the body increases and the number of CD4 cells decreases.
- HIV medicines can stop HIV infection from advancing to AIDS.
- Without HIV medicines, HIV advances to AIDS in about 10 years.
- ART (Antiretroviral treatment) can prevent HIV from spreading, and prevent HIV from advancing to AIDS.



Years without HIV medicines: 2, 4, 6, 8, 10