ANALYSING THE DYNAMICS OF HOSPITAL WASTE MANAGEMENT

By Col Rahul Bhatnagar
Roll No 1484

Under the guidance of
Prof Dr Santosh Kumar

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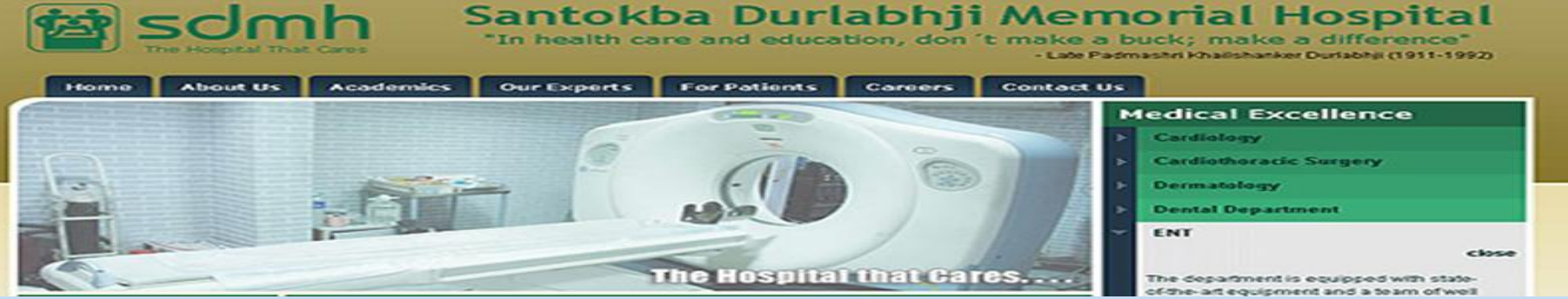
- ***Located in Jaipur***

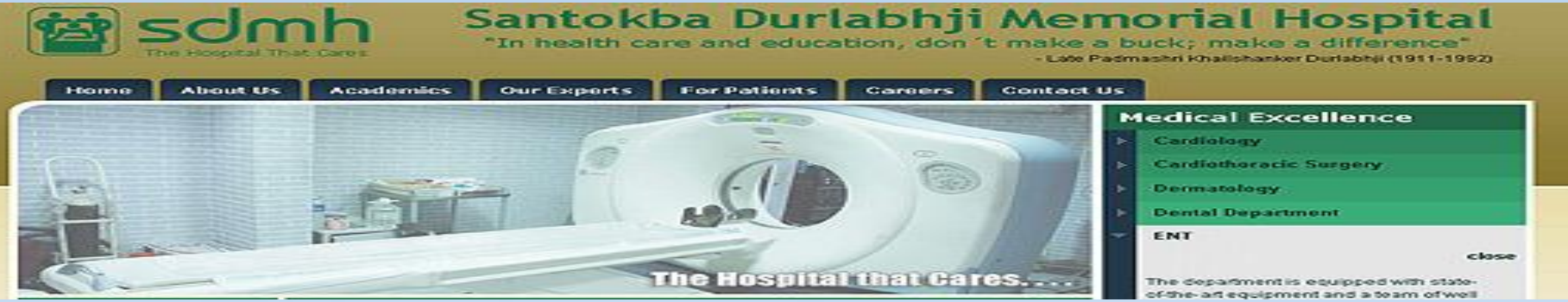
- **Santokba Durlabhji Memorial Hospital, Jaipur** is a private, trust-managed, autonomous, fee-for-services and not-for-profit hospital that the late Khailshanker Durlabhji conceptualised.

- Forty years later, it is a multidisciplinary, 551-bed, tertiary care hospital. It houses several wards, operation theatres, ICUs, laboratories, utility services, specialties and super specialties, including one of the best blood banks in the country, catering to the entire state of Rajasthan.



VISION

- SDMH shall be an integrated quaternary healthcare hub for delivery of affordable quality medical care in an economically viable, regionally, nationally and internationally positioned institutional environment.



MISSION

- The hospital cares. SDMH is committed to providing quality health care at the most affordable rates to all sections of society, irrespective of caste, creed or color. Towards making this possible, we pledge to dedicate all our efforts and all our energies.

Need of BMW Management in Hospitals???

Health care waste is a risk to all, it affects us in different ways

Hospital Wastes

HOSPITAL WASTE

HAZARDOUS

NON HAZARDOUS

INFECTIOUS WASTES

NON INFECTIOUS WASTES

Classification of hospital wastes

Definition of BMW

"**Bio-medical waste**" means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological items”

CPCB definition

Labels

Labels for bio-medical waste containers / bags

Steps of BMW management

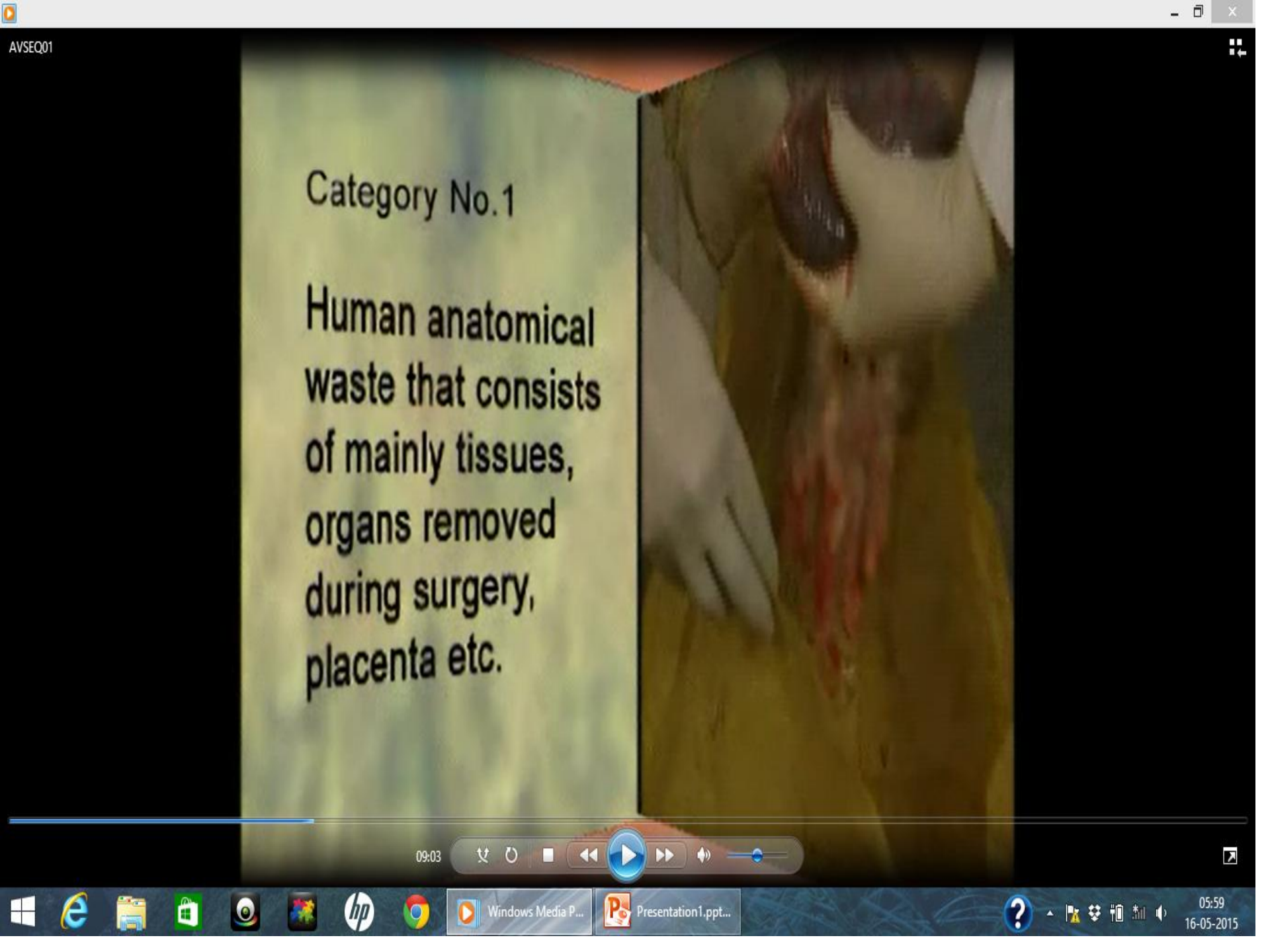
Various aspects of BMW management

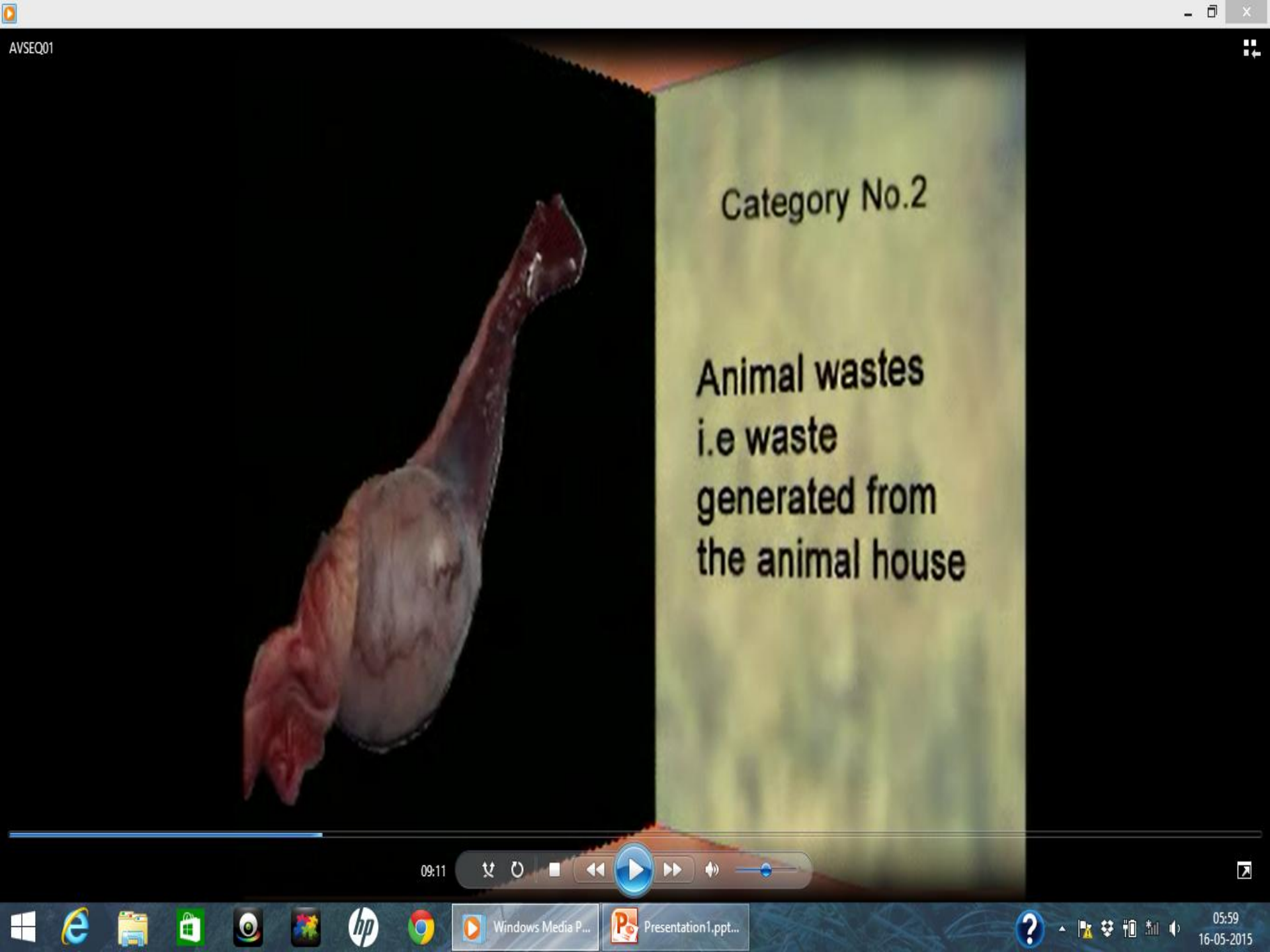
Bio Medical Waste (Management and Handling) Rules,1998

Bio-Medical Waste Management and Handling Rule 1998, of India.

- This rule is prescribed by the **Ministry of Environment and Forests,** Government of India.
- Came in to force on **28 July 1998.**

CATEGORIES OF BIO-MEDICAL WASTES


AVSEQ01
Category No.1
Human anatomical waste that consists of mainly tissues, organs removed during surgery, placenta etc.
09:03
Windows Media P...
Presentation1.ppt...
05:59
16-05-2015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Category No.2
Animal wastes
i.e waste
generated from
the animal house
09:11
Windows Media P...
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AVSEQ01

09:17

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Presentation1.ppt...
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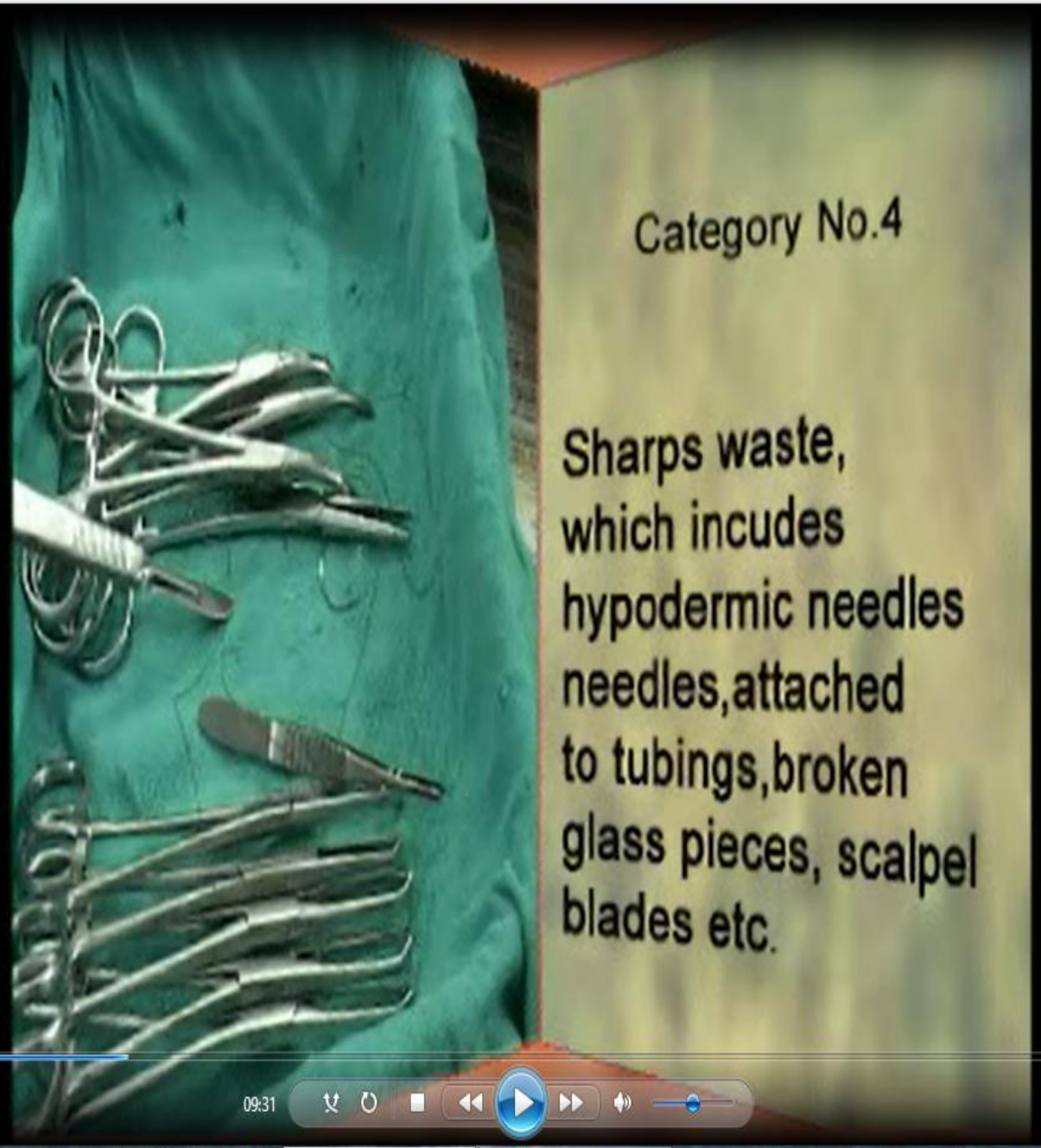
AVSEQ01



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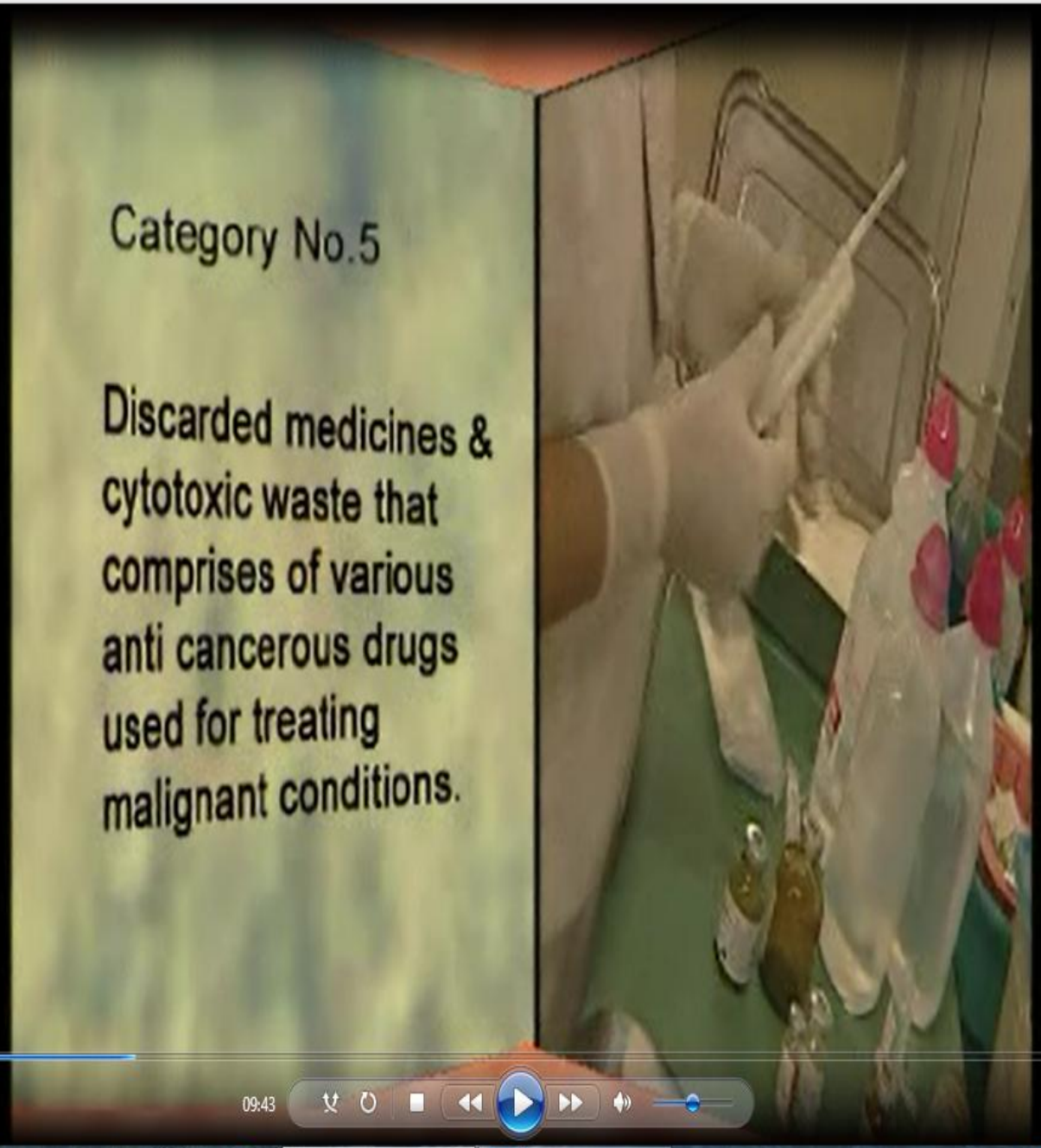
AVSEQ01



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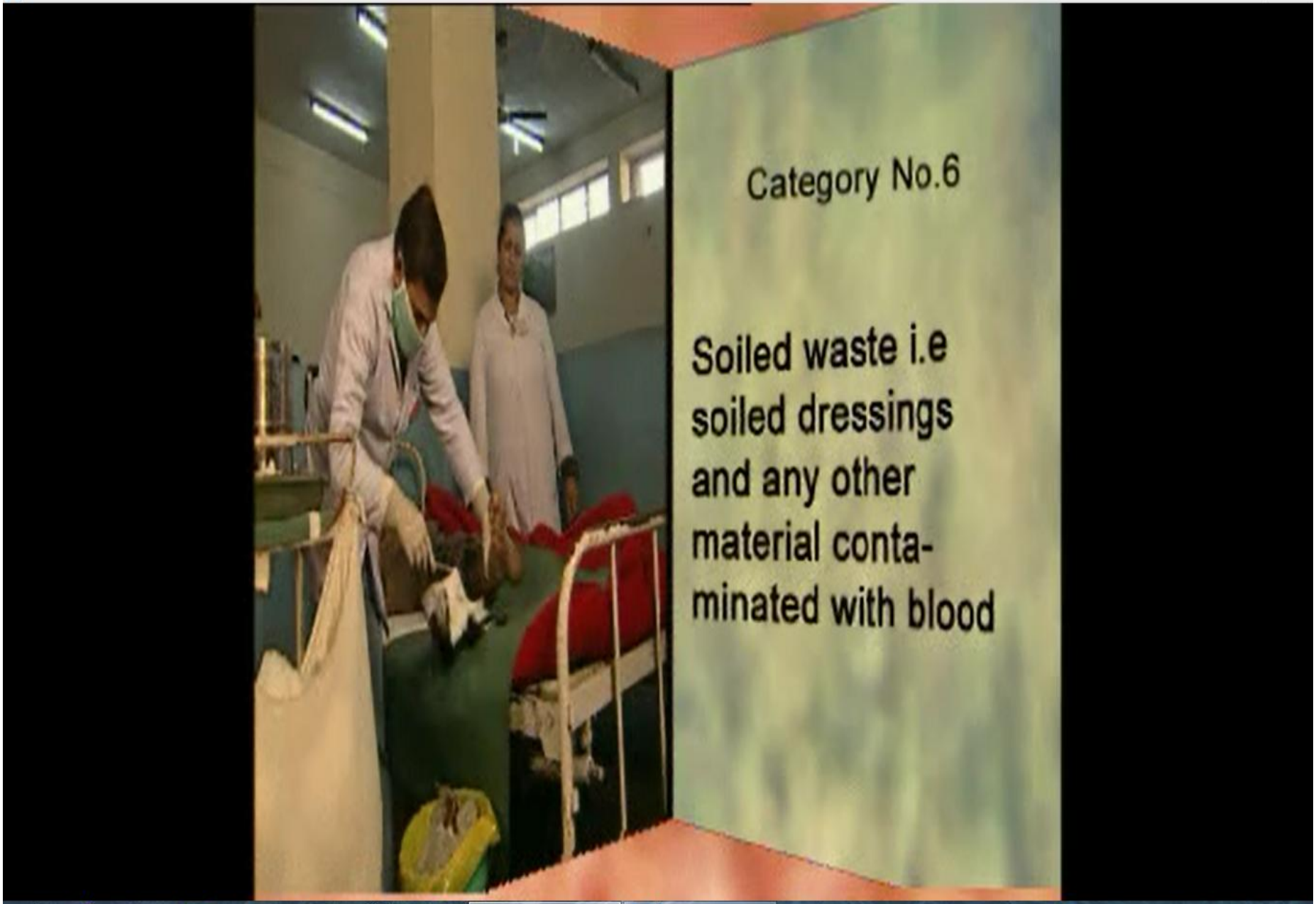
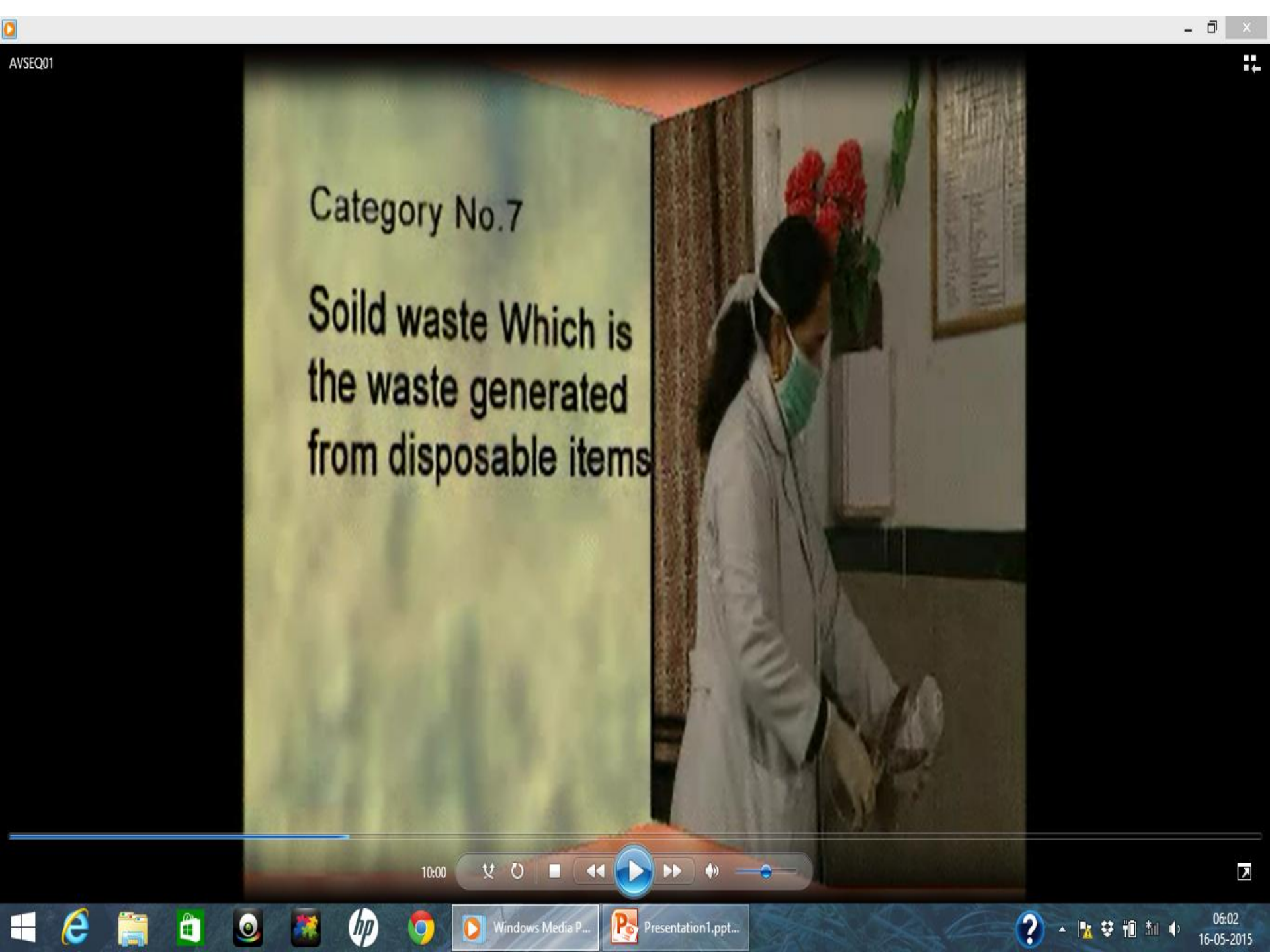
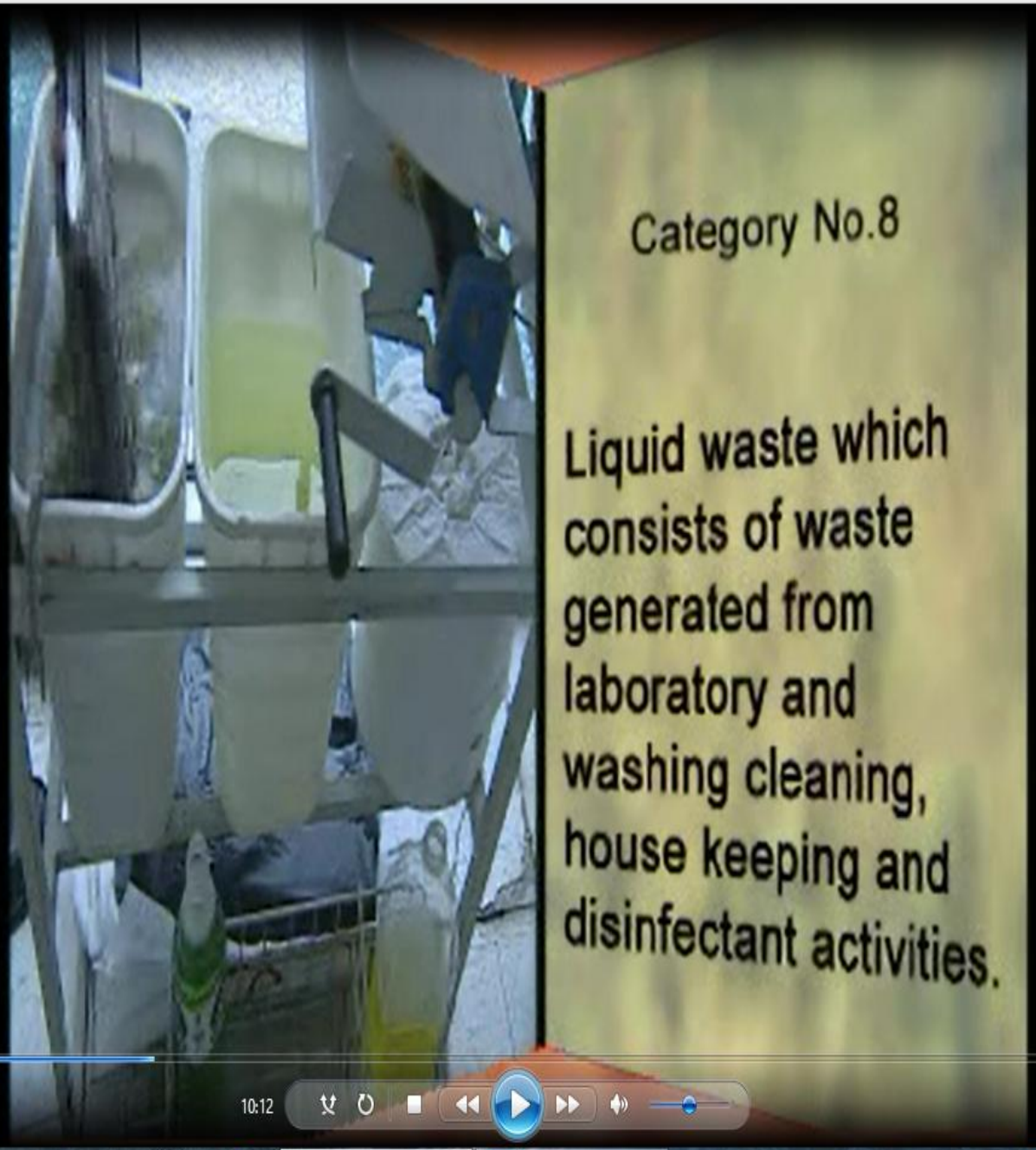
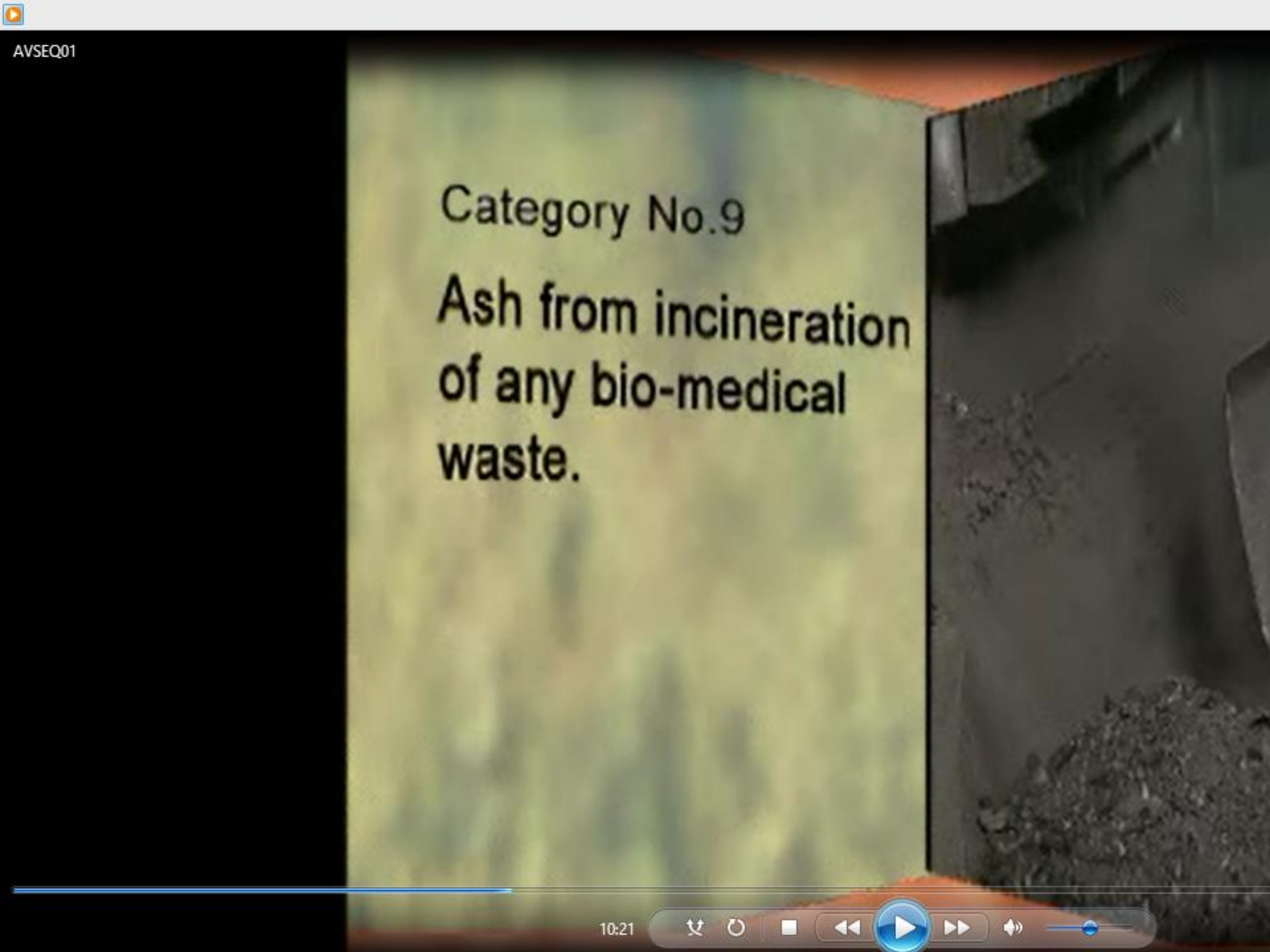
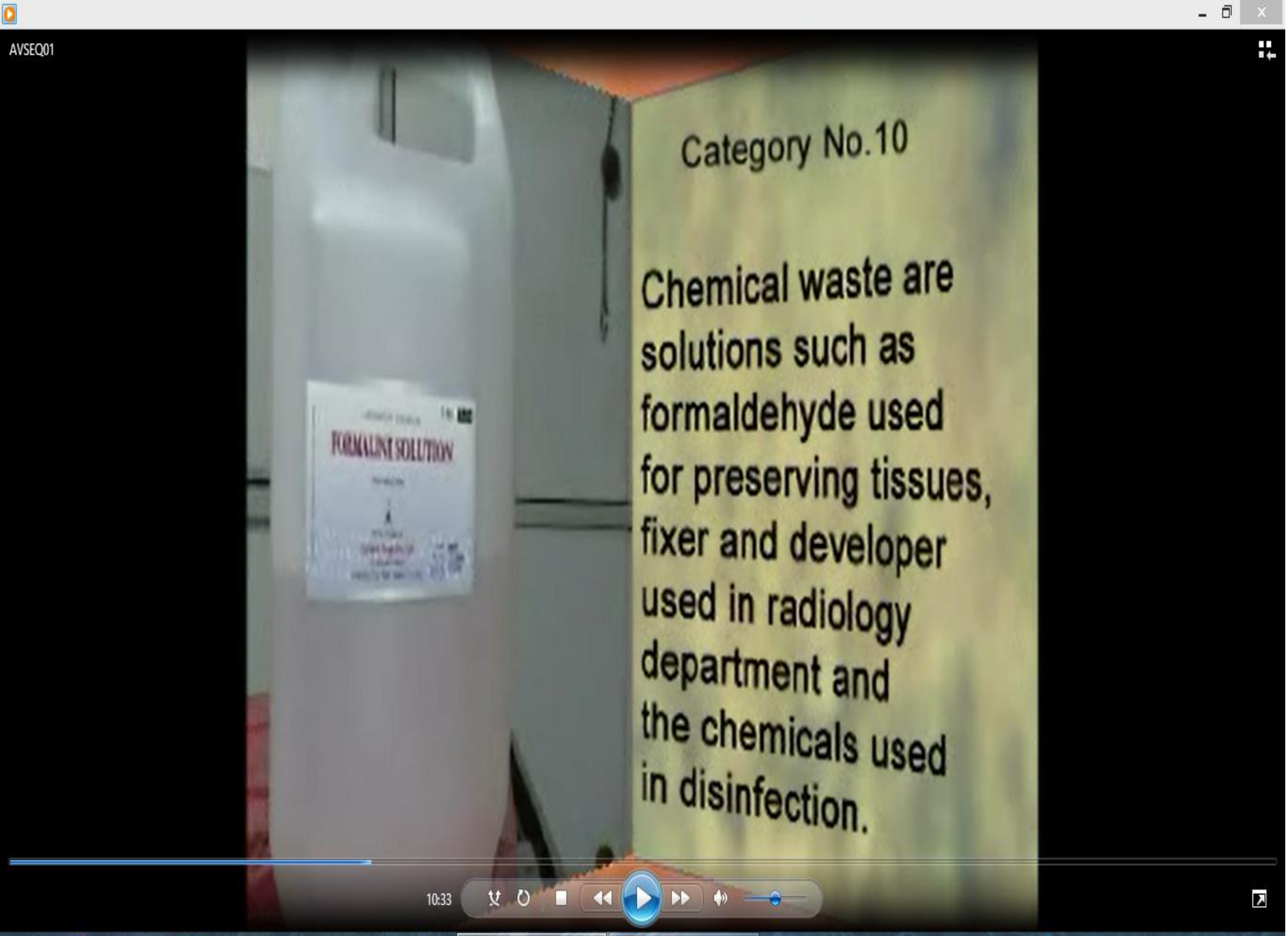
06:01
16-05-2015


Category No.6
Soiled waste i.e soiled dressings and any other material conta-minated with blood

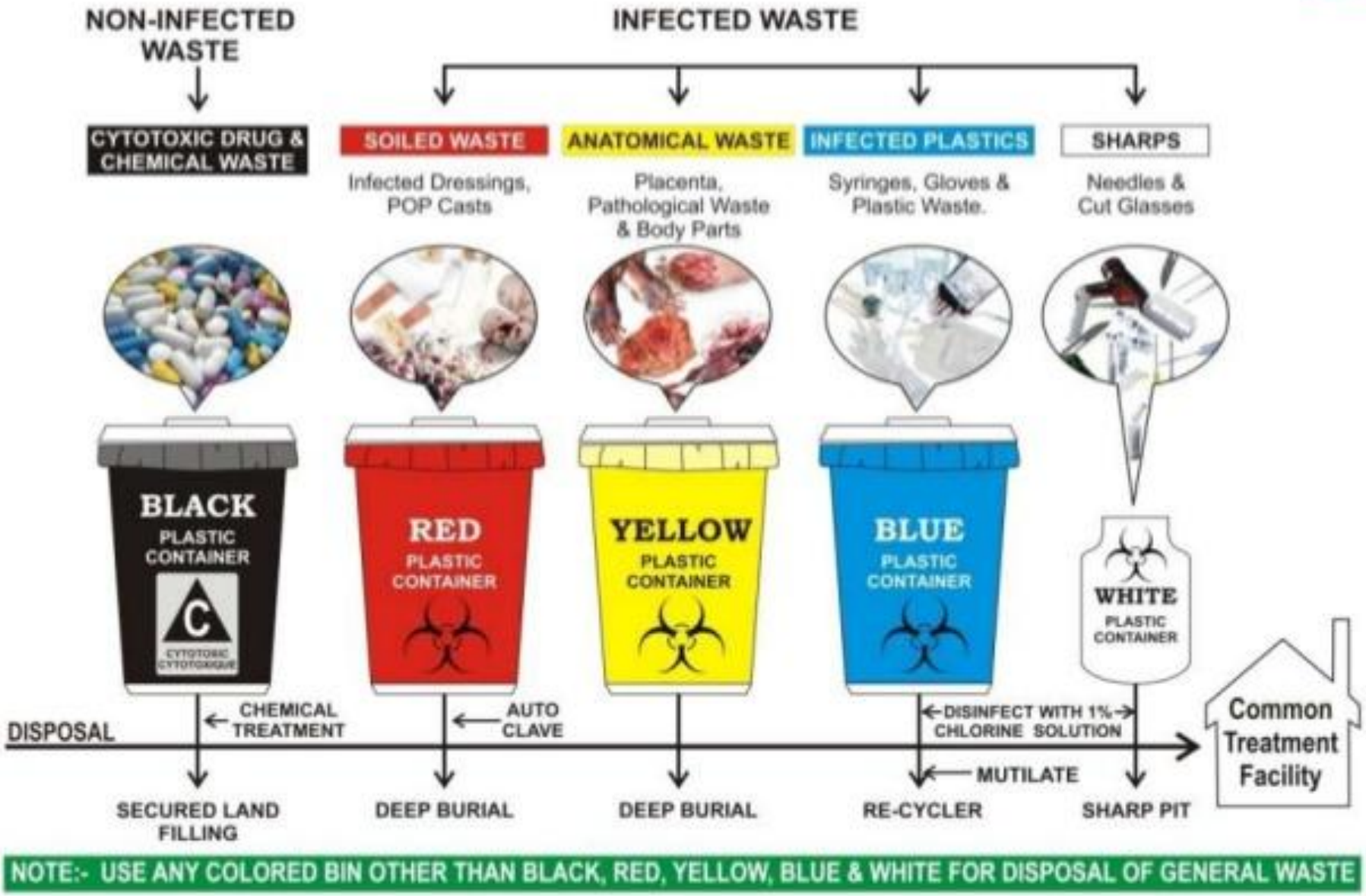

AVSEQ01
Category No.7
Soild waste Which is the waste generated from disposable items
10:00
Windows Media P...
Presentation1.ppt...
06:02
16-05-2015


Category No.8
Liquid waste which consists of waste generated from laboratory and washing cleaning, house keeping and disinfectant activities.


AVSEQ01
Category No.9
Ash from incineration of any bio-medical waste.
10:21

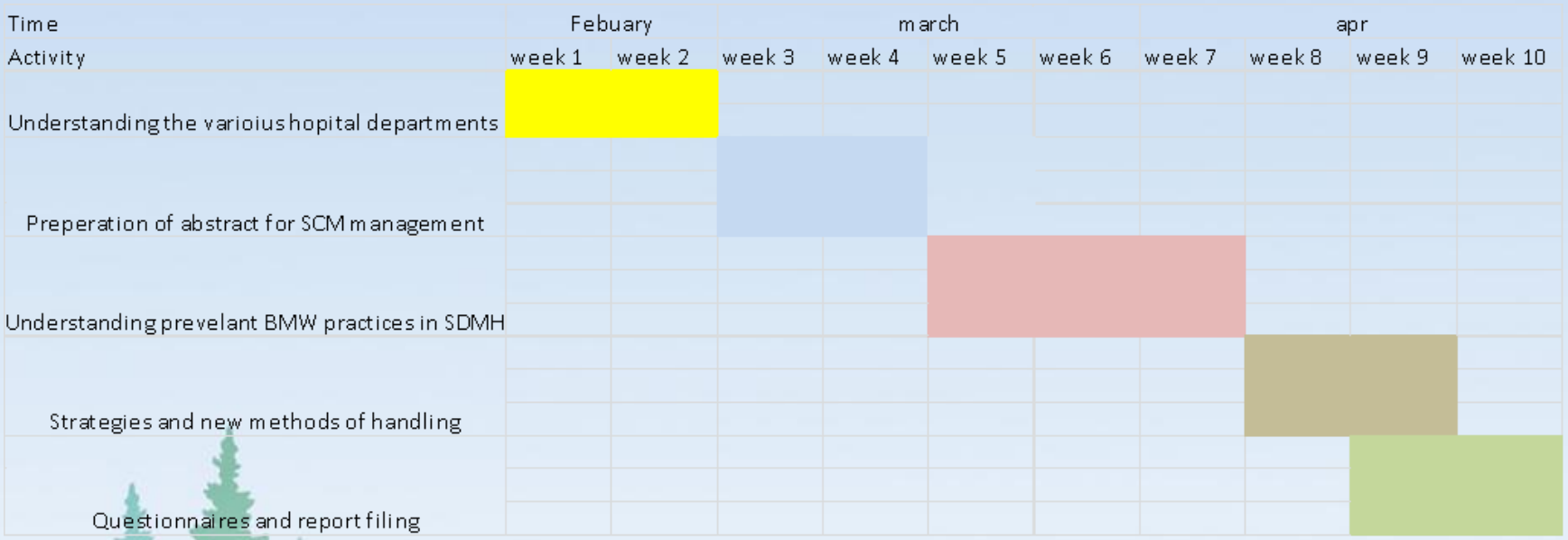

AVSEQ01
Category No.10
Chemical waste are solutions such as formaldehyde used for preserving tissues, fixer and developer used in radiology department and the chemicals used in disinfection.
FORMALIN SOLUTION
10:33
Windows Media P...
Presentation1.ppt...
06:03
16-05-2015

SEGREGATION OF SOLID BIO-MEDICAL WASTE



NOTE:- USE ANY COLORED BIN OTHER THAN BLACK, RED, YELLOW, BLUE & WHITE FOR DISPOSAL OF GENERAL WASTE

Activity Plan



AIM

To strengthen the Bio-Medical Waste management practices in a hospital by ensuring timely and proper disposal of the bio-medical wastes

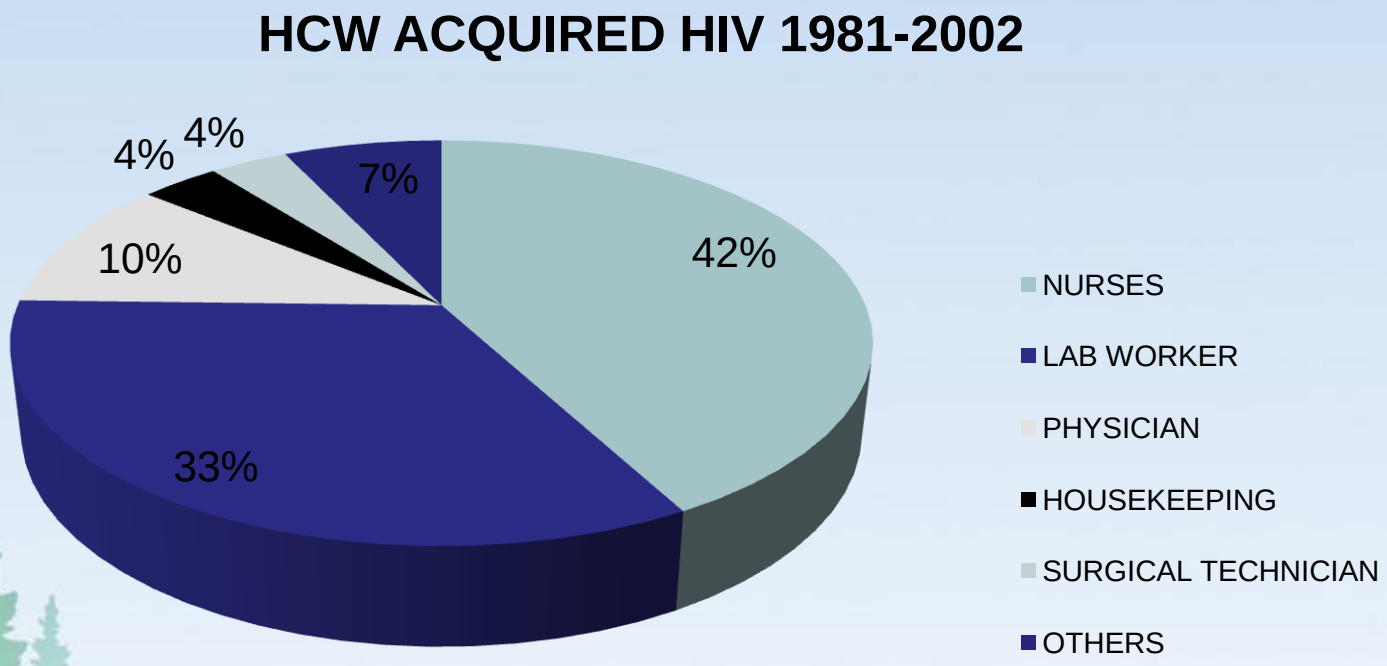
Objectives

- To examine the BMW management system existing the hospital under study
- To identify the bottlenecks in the BMW management system
- To provide recommendations to over come the same

Rationale

- The subject is assuming alarming proportions with the increase of healthcare facilities in the country.
- It has far reaching consequences on the image, legal obligations, environmental concerns and health of entire community.
- Associated with various hazards :
  - ✓ Risk of injuries
  - ✓ Risk of infections
  - ✓ Risk to hospital staff and general community from patients suffering from communicable diseases
  - ✓ Risks associated with hazardous drugs, chemicals, radioactive wastes
  - ✓ Disposables being recycled and sold by inscrupulous elements

Rationale



Rationale

WHO IS AT RISK??

Methodology

- Study design
- Data type
- Sample size
- Methods
- Analysis plan
- Limitations of study

Study Design

- Descriptive research to gather data

- Steps taken:
  - Visit to all departments
  - Observations on various practices
  - Questionnaire prepared to assess awareness

Data Type

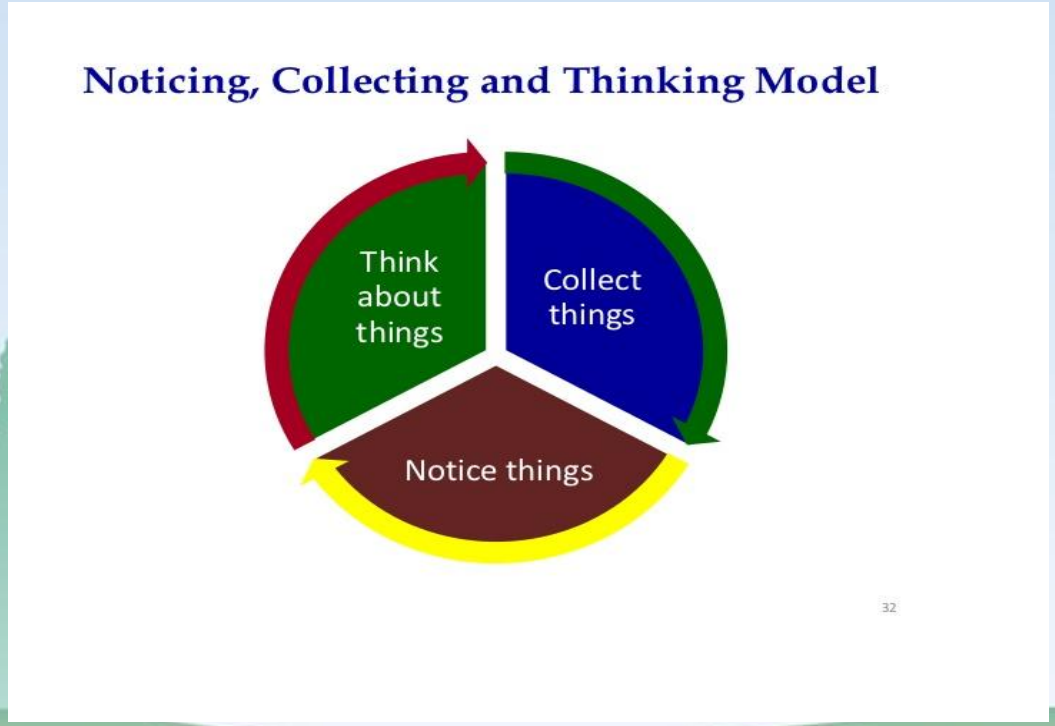
- Data is the basic input for any decision making process
- Primary Data: Questionnaire and interviews
- Secondary Data: Already existing records
  - ✓ Registers and record books
  - ✓ Books on the subject
  - ✓ Internet

Sample size

- In this empirical study, the sample taken was:
  - Doctors x 10
  - Nurses x 15
  - Housekeeping staff x 15

Analysis Plan

- Data collected on hypothetical questions designed to be interpretive, leading with multiple choices



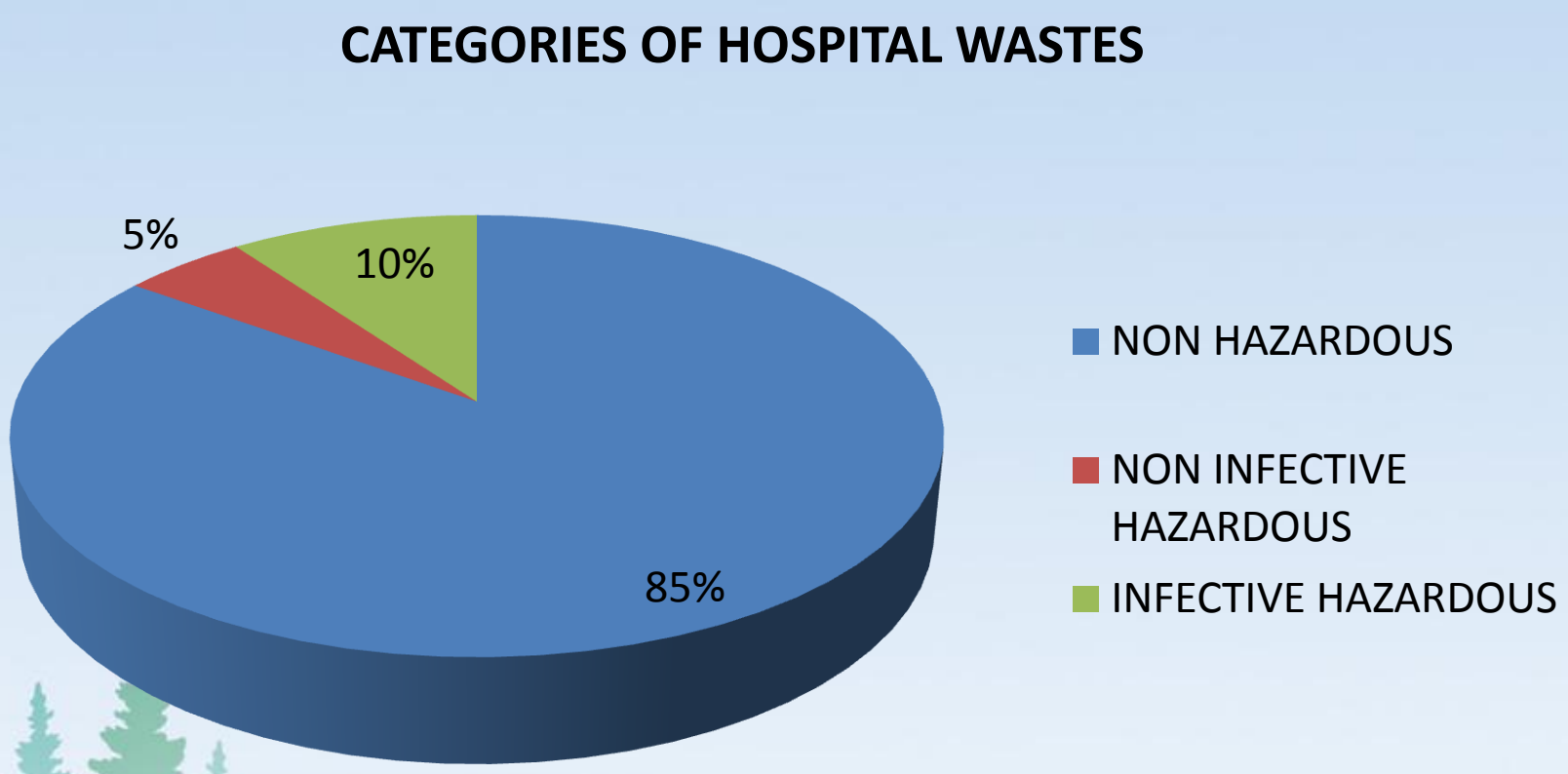
Limitations of Study

- Present administration setup being streamlined
- Bio-Medical waste contract company very reluctant to share
- Answers to the questionnaire taken verbally due to busy schedule of doctors and nurses
- STP company shy of sharing technical know how

Data Analysis

- Data collected through questionnaire converted in to bar charts through Excel sheet.
- Moments were captured by camera to re-emphasise certain points observed.

General Findings



General Findings

- Segregation
  - Segregation in night duties casual
  - Waste bags being kept in washrooms

General Findings

- Collection
  - Trolleys uncovered
  - Bags not labelled

General Findings

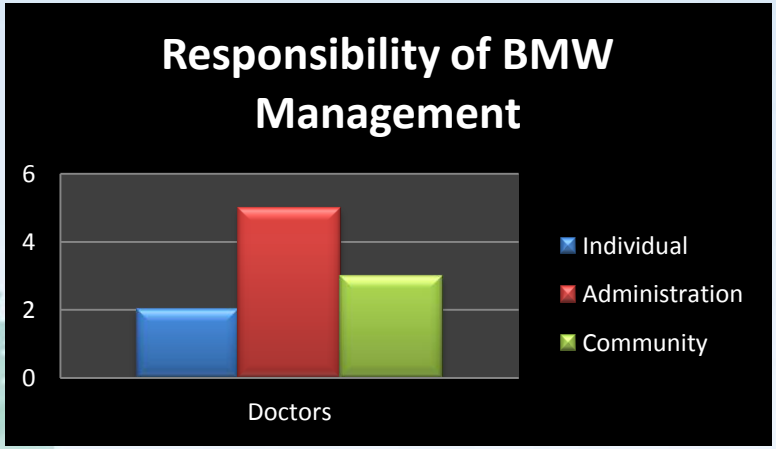
- Intra-mural transportation
  - Waste Trolleys move through common passage
  - No warning signs for patients / attendants
  - Lifts being used for movement

General Findings

- Extra-mural transportation
  - Contract labourer not using PPE.
  - Wastes being rummaged creating bad odour and sigh
  - No warning signs for patients / attendants
  - Lifts being used for movement

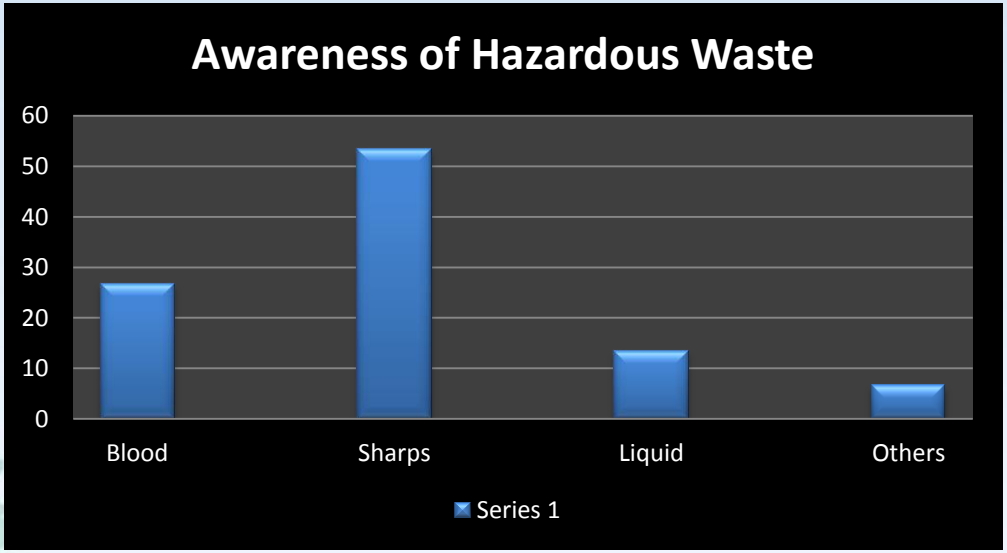
General Findings

- Doctors' findings
  - 80% believe BMW is waste disposition, 10% disease control while 10% feel segregation of waste.
  - All follow universal precautions
  - 80% have no knowledge of waste audit
  - 70% aware of BMW guidelines



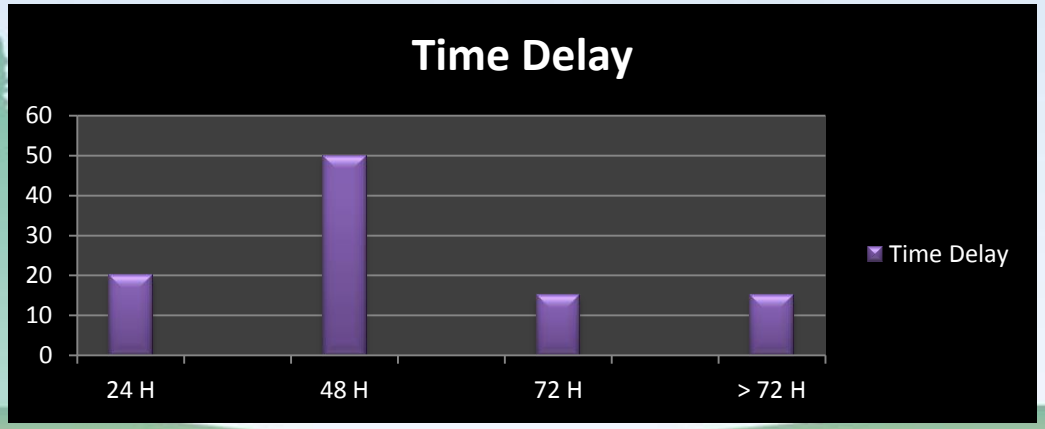
General Findings

- Nurses' findings
  - 17% aware of BMW guidelines
  - 84% feel hospital waste is hazardous
  - 35% nurses did not get any training on segregation
  - 72% feel HIV is most common disease spread from BMW



General Findings

- Housekeeping findings
  - 70% felt sharp is real cause of infection while 20% felt blood.
  - 66% staff use PPE sometimes while only 26% use it always
  - 50% feel that waste can be kept for 48h, 20% feel not more than 24 h
  - Most vaccinated but have no records



Critical Findings

- Regarding Staff
  - No duty rotation
  - Training not customised
  - No dedicated supervisor; no briefing/debriefing
  - Low motivation and lack of recognition

Critical Findings

- Regarding Garbage area
  - Bad odour persistent
  - Small sized gloves to staff
  - Garbage bags not weighed
  - No records of weight, cleaning of central storage rooms or trolley kept

Critical Findings

- Regarding transportation of waste
  - Trolleys overloaded
  - Wastes mixed up causing cross contamination
  - Trolley causing dent and discomfort in lifts
  - Trolleys move very close to attendants in corridors

Recommendations

"*Good quality does not mean high quality. It means predictable degree of uniformity and dependability with the quality suited to the requirement*"

WE Deming
Quality Guru

Recommendations

- HR department must ensure rotation of duties
- Special allowances be considered
- Small weigh machines proposed for all departments
- Dedicated supervisor could facilitate day to day coordination
- Trolleys of variable sizes recommended
- Consider better coordination between security, sweepers and BMW staff
- Waste audit proposed to be held sincerely
- High powered BMW committee be constituted with monthly monitoring
- Customised training for all cadres of hospital
- Better awareness about BMW through IEC material and posters to be considered

Conclusion

- Outlook towards BMW management as mundane and non-technical work needs to be changed. Need to change the mind-set and attitudes of people.
- Stricter rules for ICUs, OTs and blood banks recommended
- Technology driven advancements in treatment and disposal of wastes
- While lot of steps have bee taken towards the BMW management, a lot more is still required for this alarmingly increasing problem of society.
- Government to think of devising more comprehensive laws after BMW(management and handling)Rules1998

"Let the waste of the sick not contaminate the life of healthy"

“ BE THE CHANGE YOU WANT TO SEE IN THE WORLD”