

To Assess The Knowledge Attitude And Practices Of Bio Medical Waste Among Medical And Housekeeping Staff

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BATCH 2016-2018**

BACKGROUND

- In the persuasion of aim of reducing health problems, eliminating potential risks, and treating sick people, health care services inevitably create which itself may be hazardous to health.
- The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste.
- Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. It is estimated that yearly that about 0.33 million tons of hospital waste is generated in India and the waste generation rate ranges from 0.5 to 2.0 kg per bed per day

- Though legal provisions [Biomedical waste(management and handling) Rules 1998] (2) exist to mitigate the impact of hazardous and infectious hospital waste on the community, still these provisions are yet to be fully implemented.
- The absence of proper waste management, still these provisions are yet to be fully implemented. The absence of proper waste management, lack of awareness about the health hazards from biomedical wastes, insufficient financial and human resources and poor control of waste disposal are the most critical problems connected with healthcare waste.

RESEARCH OBJECTIVES

- To assess the knowledge, attitude and practices of bio-medical waste management among medical and housekeeping staff.
- To identify the existing lacunae and problems in management in bio-medical waste.

METHODOLOGY

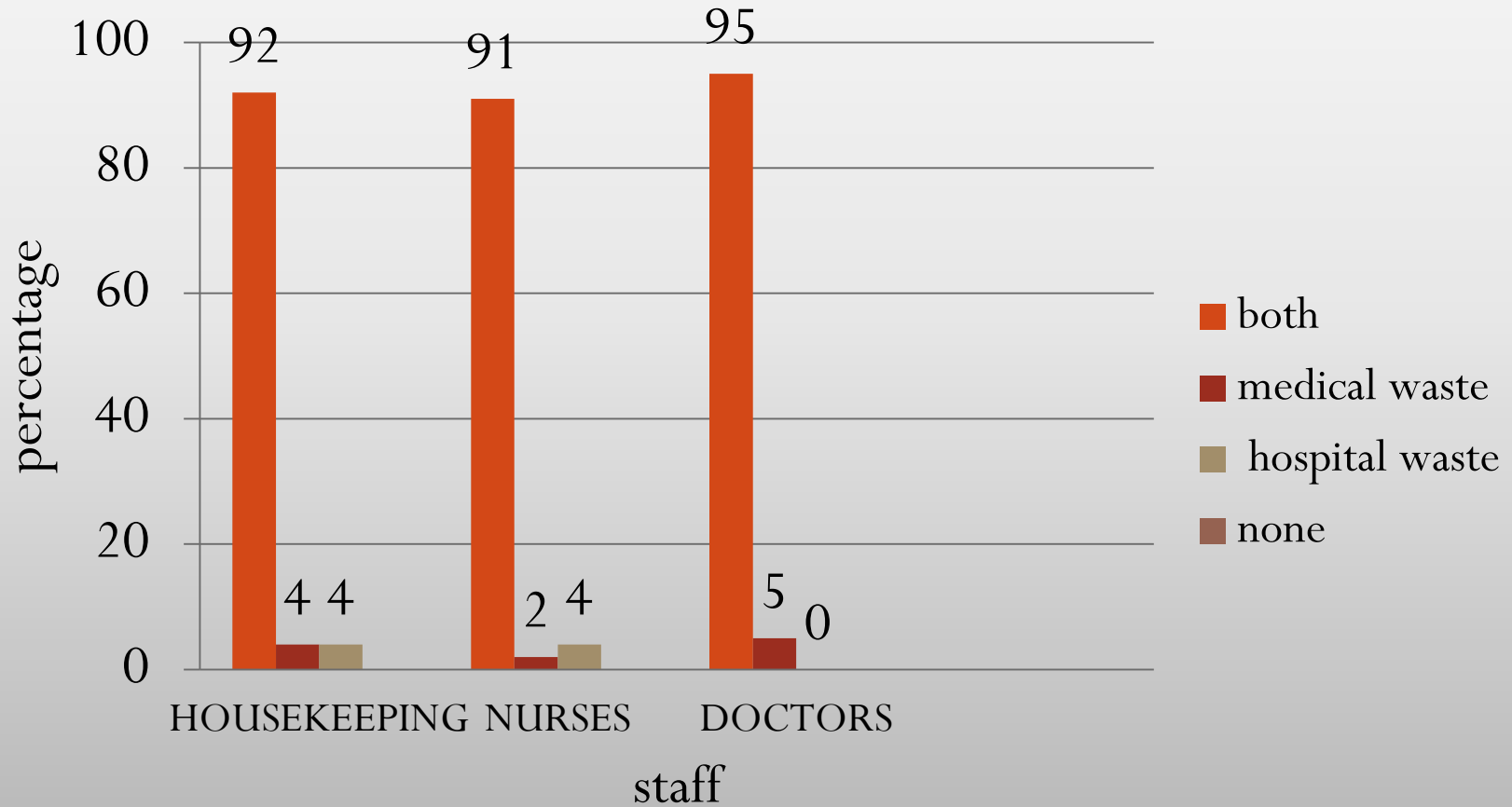
- Location of Study- Guru Teg Bahadur Hospital, Delhi
- Type of Study- Descriptive
- Sample- 15 nursing staff, 5 non medical staff, 22 doctors (2 specialist, 5 senior residents, 14 junior residents).
- Selection process- non-purposive convenience sampling
- Data to be collected- doctors, nursing staff and housekeeping staff.
- Data collection tools- interview and questionnaire.
- To fulfil objective 2, process mapping of BMW in GTB followed by comparison with WHO standards.

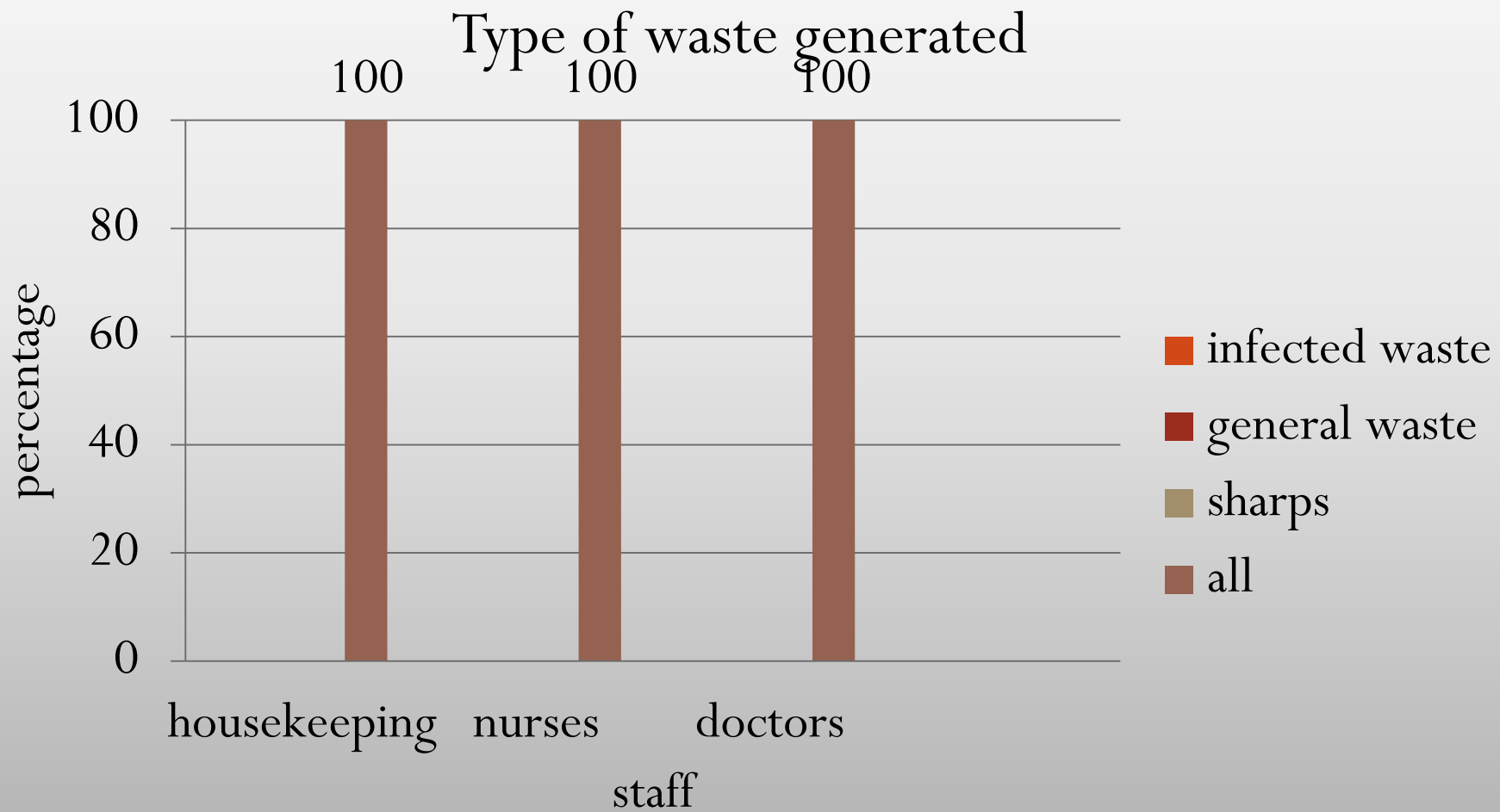
Results

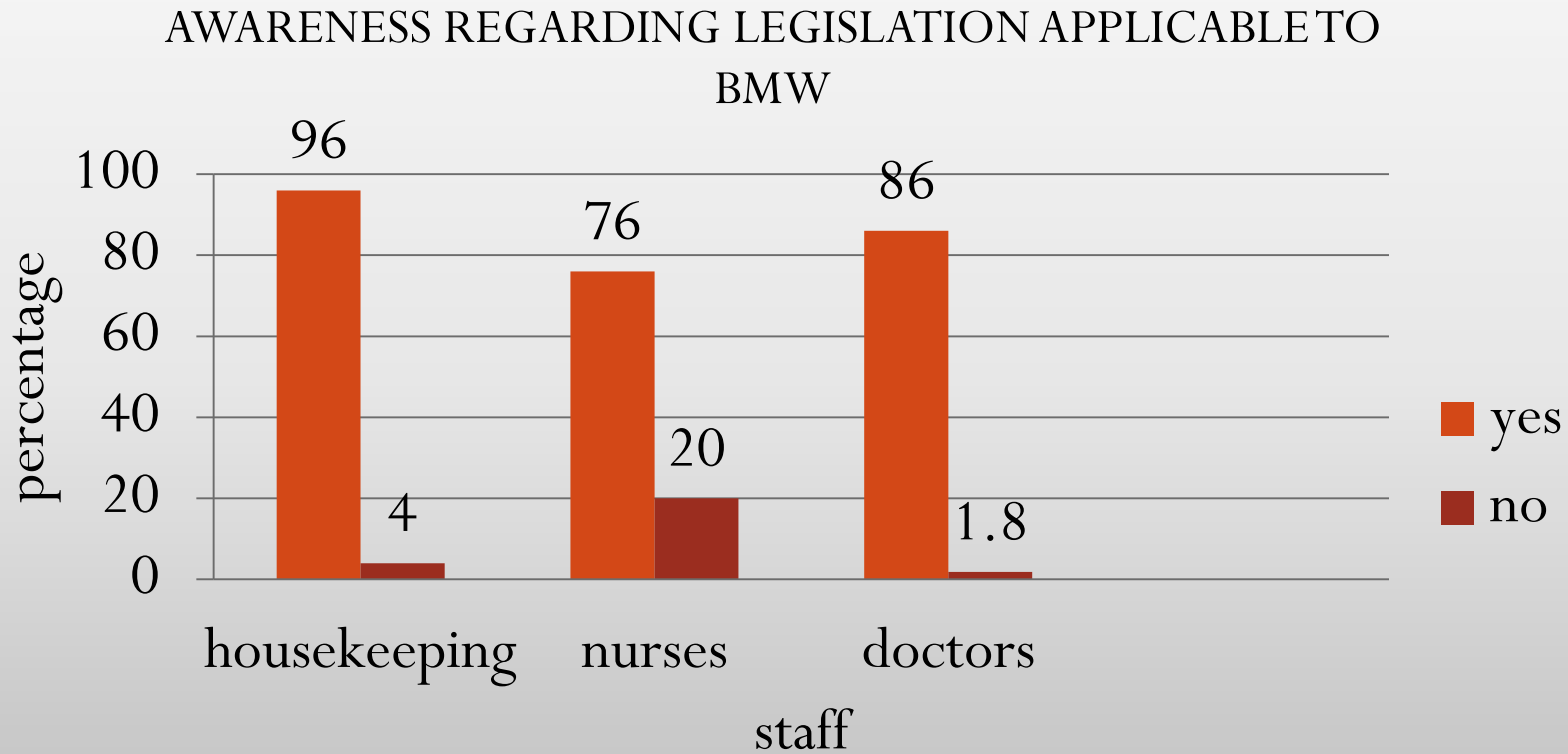
Distribution of participants-

- Participants are firstly being distributed on the basis of their profession.
- Like- HOD, specialist, senior residents, junior residents, head nurse (nursing in charge), nurses, non medical staff (housekeeping staff).
- So in total there were 42 staff in the department
- 2 specialists, 6 senior residents, 14 junior residents, 15 nurses, 5 non medical staff.

Understanding of staff about BMW

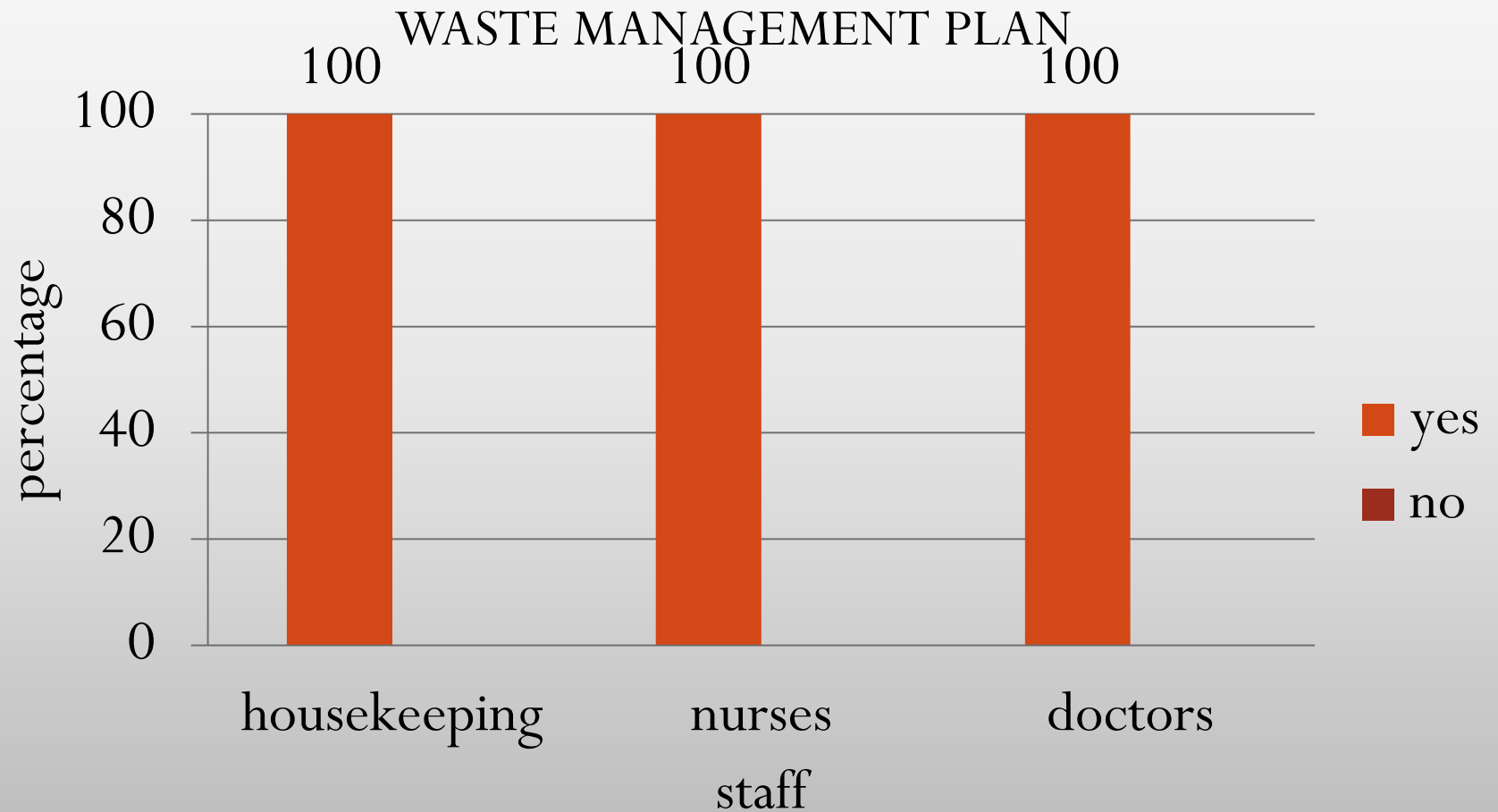


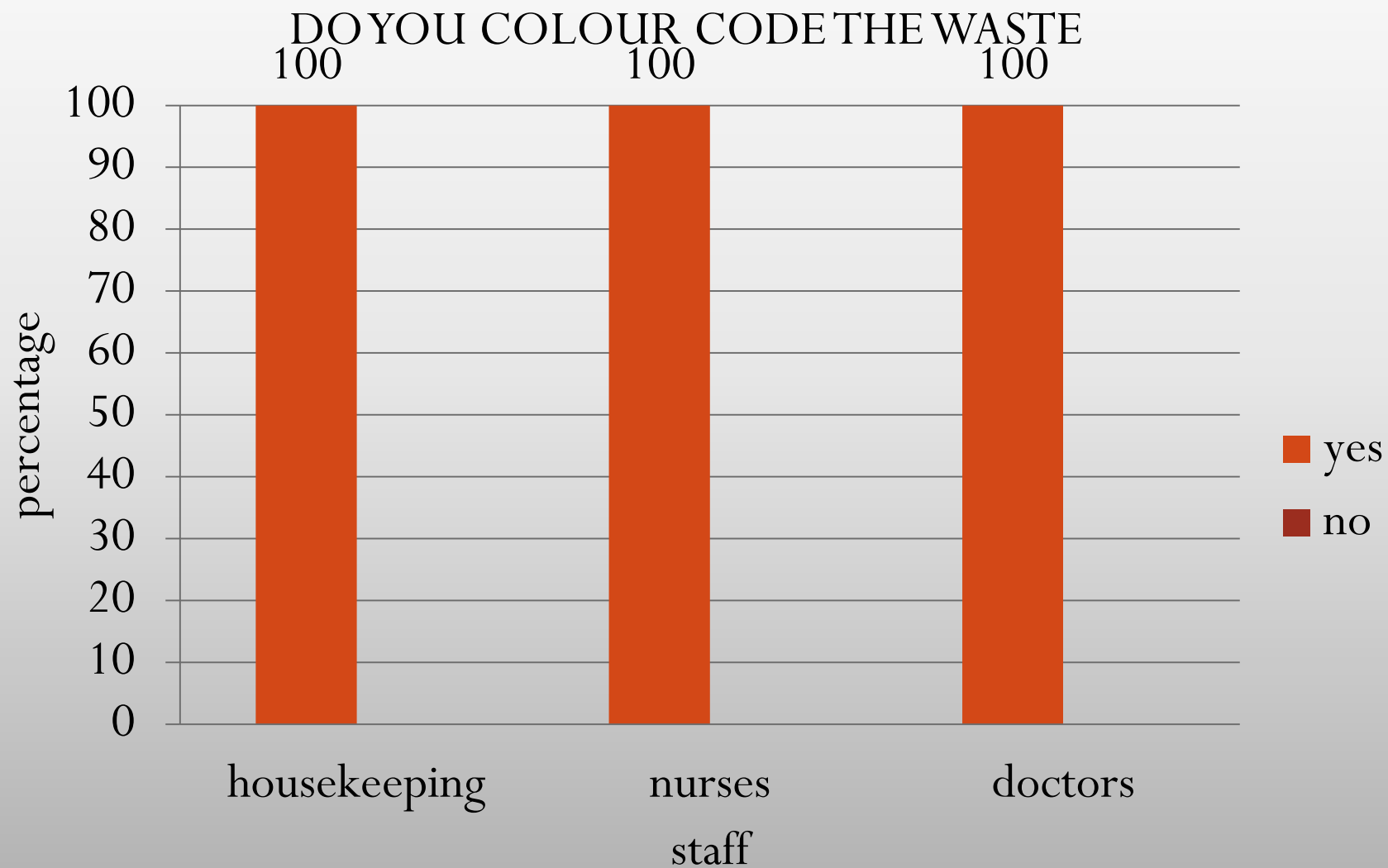




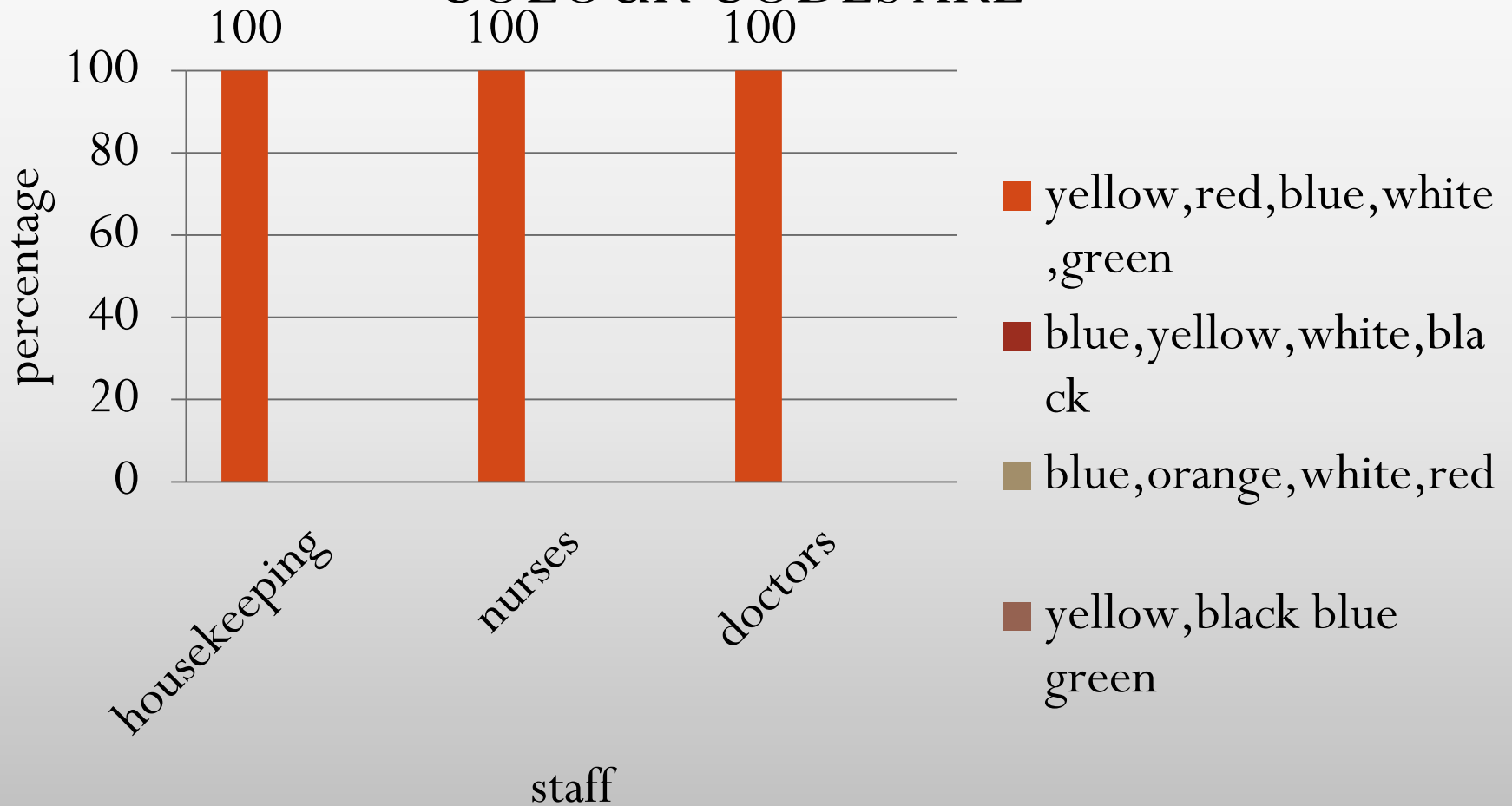
- In general about 86% staffs are aware about the legislature associated with BMW but only 23.3% of the environment pollution law.

WASTE MANAGEMENT PLAN

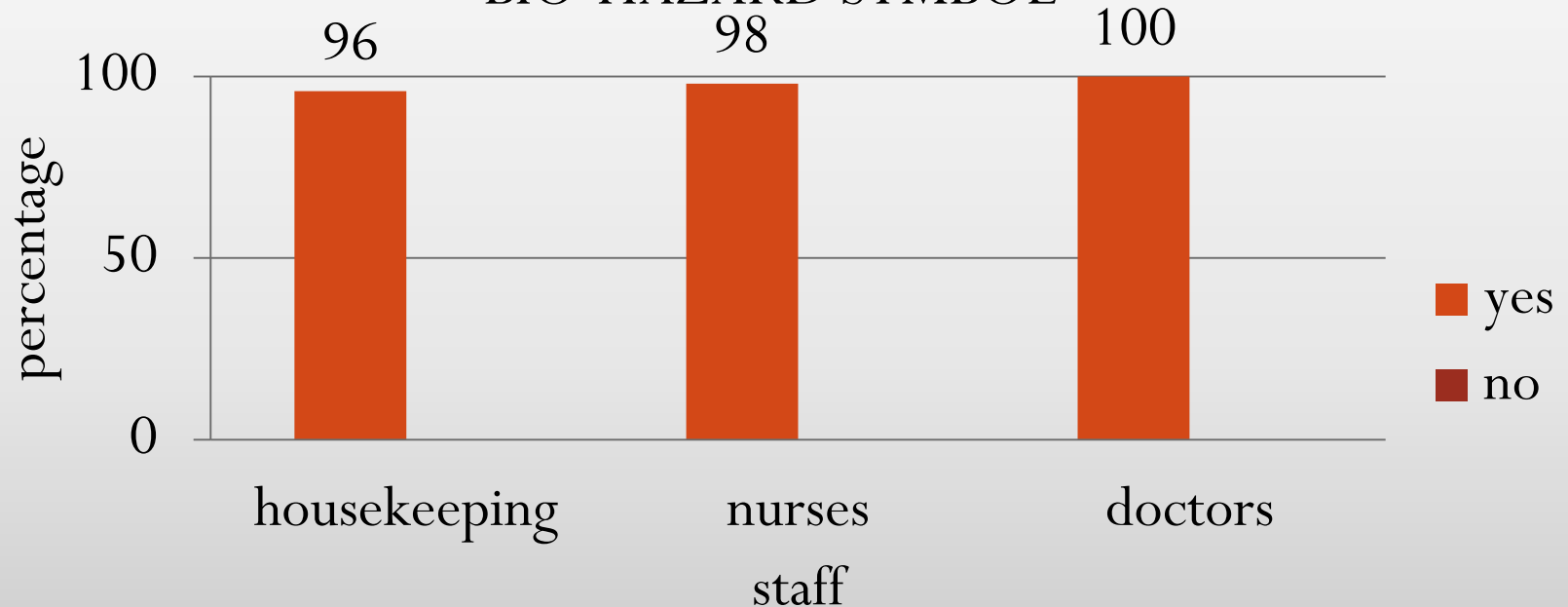




COLOUR CODES ARE-

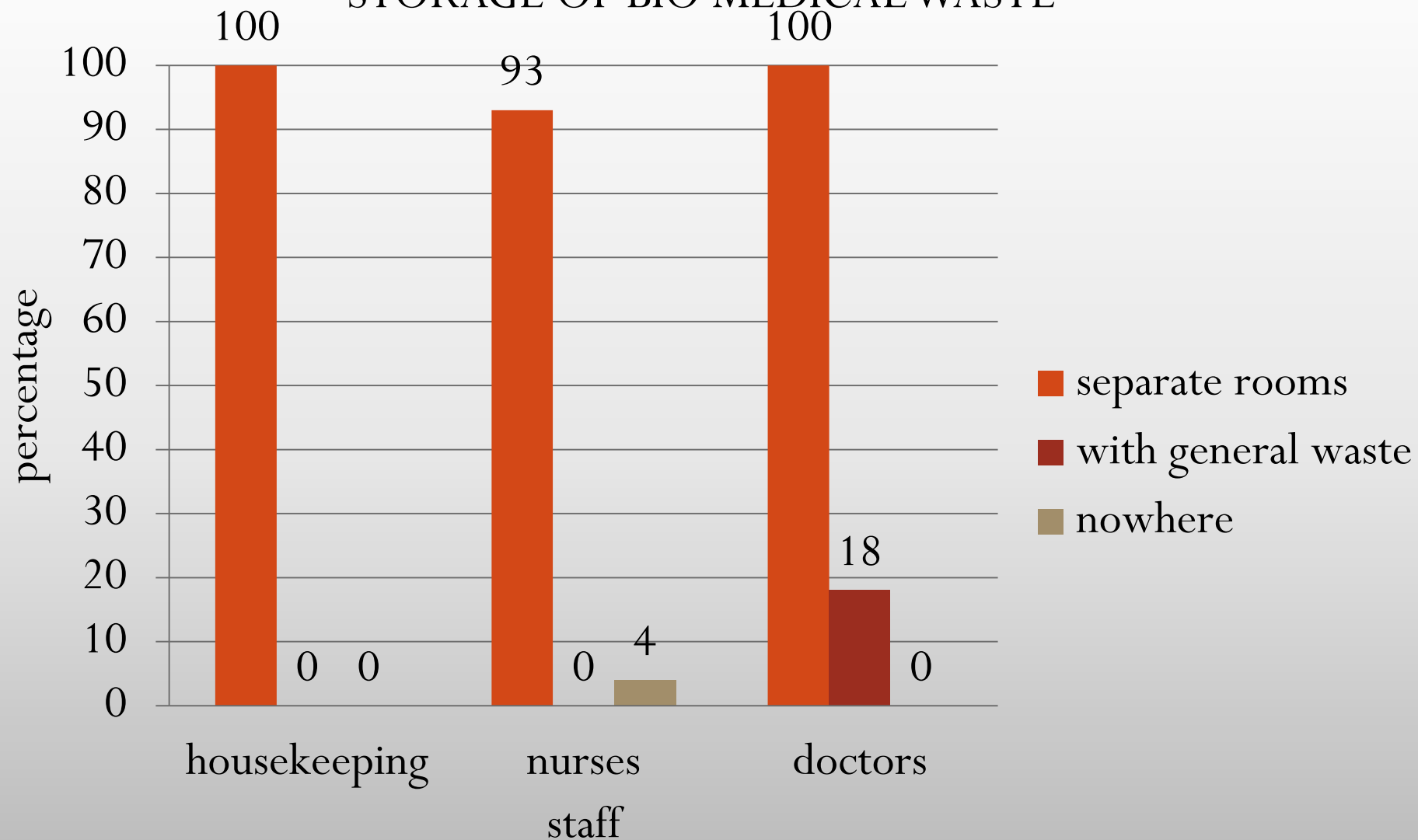


INFECTIOUS WASTE BAGS ARE LABELLED WITH BIO-HAZARD SYMBOL

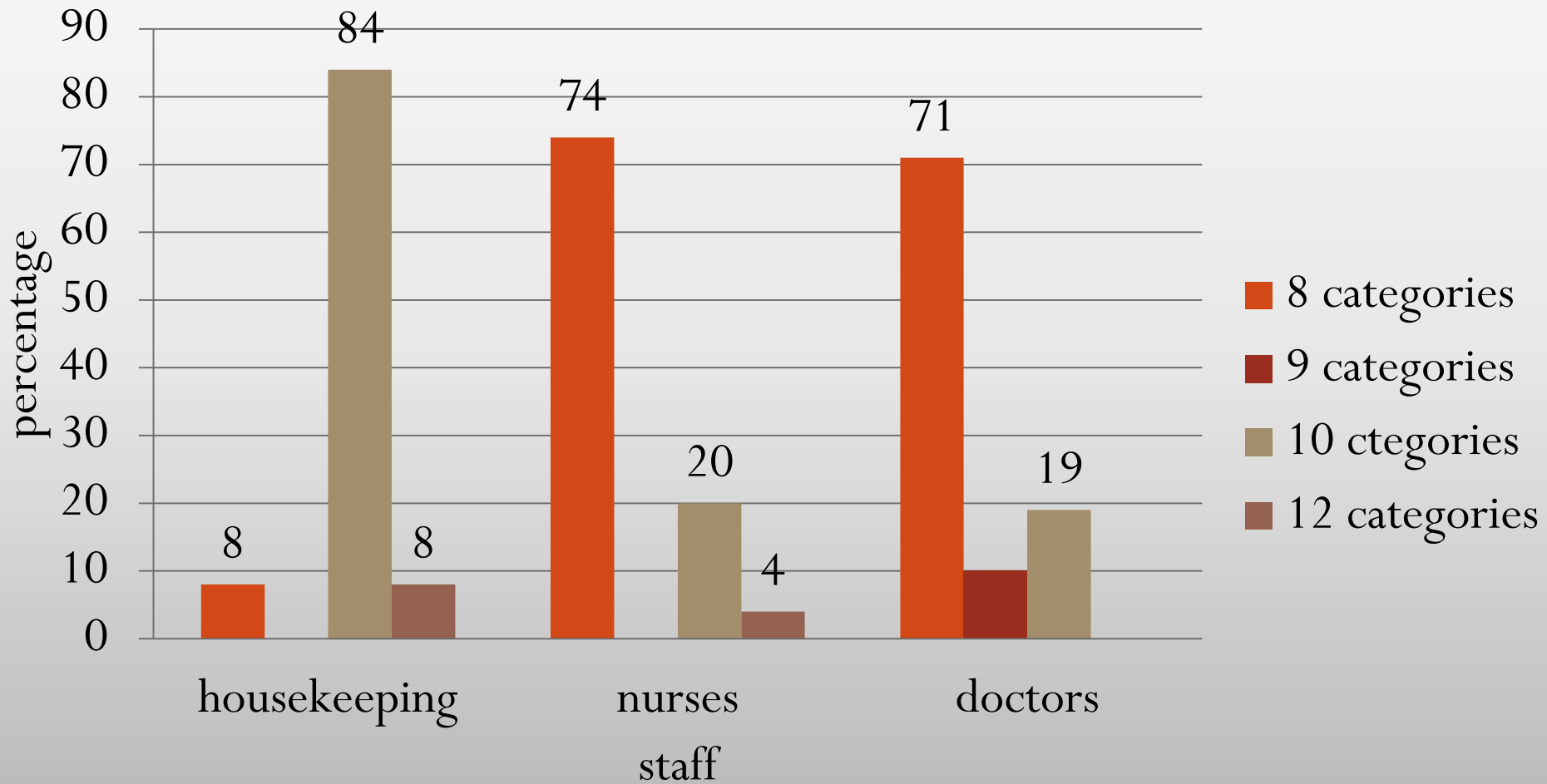


- 100% of the staff is aware about the bio-hazard symbol labelled on bags, on the other hand about 92% knows about the discarding of waste in colour coded bags.

STORAGE OF BIO MEDICAL WASTE

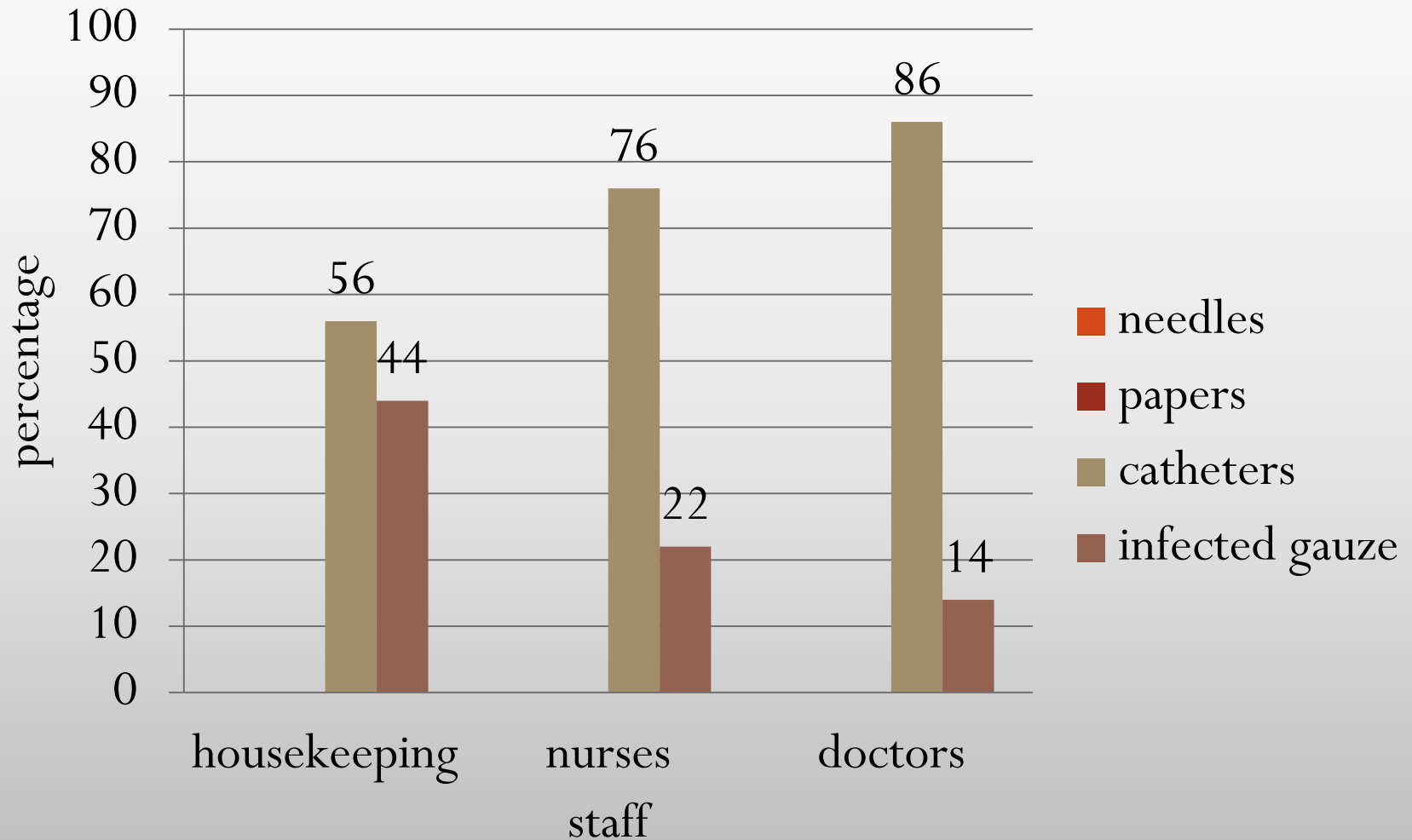


CATEGORIES OF BIO-MEDICAL WASTE

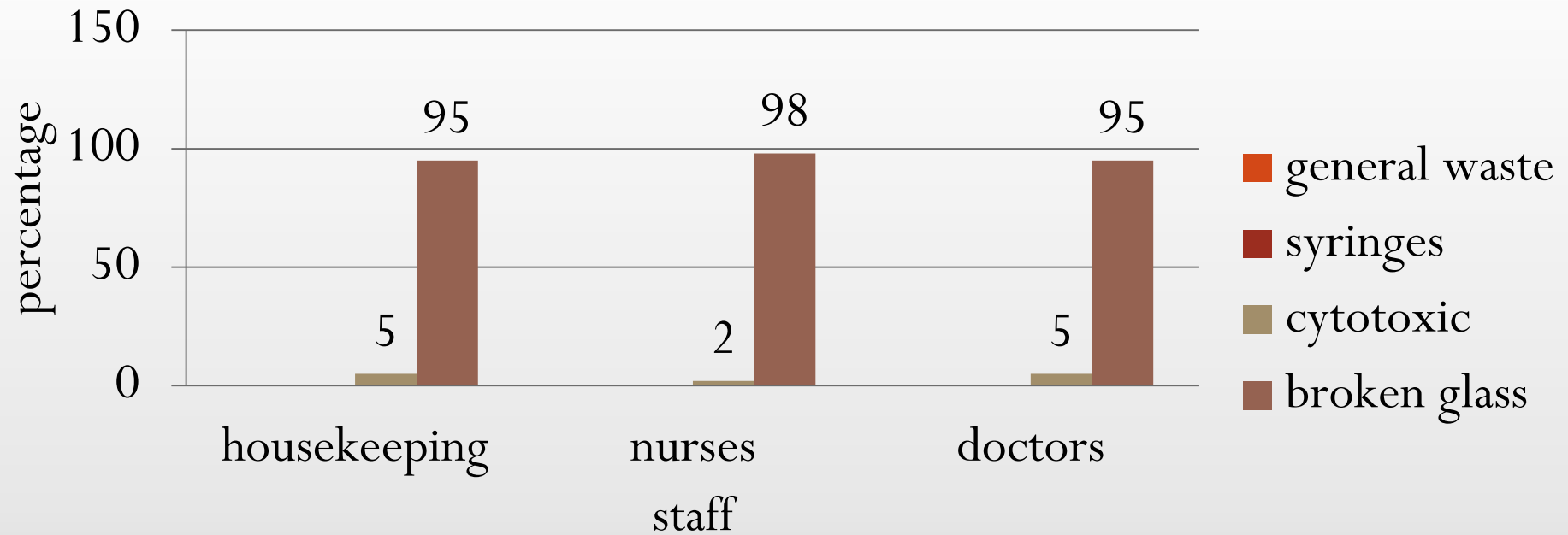


Only 51% of the staff was aware about the different categories of waste.

RED BAG IS TO DISCARD

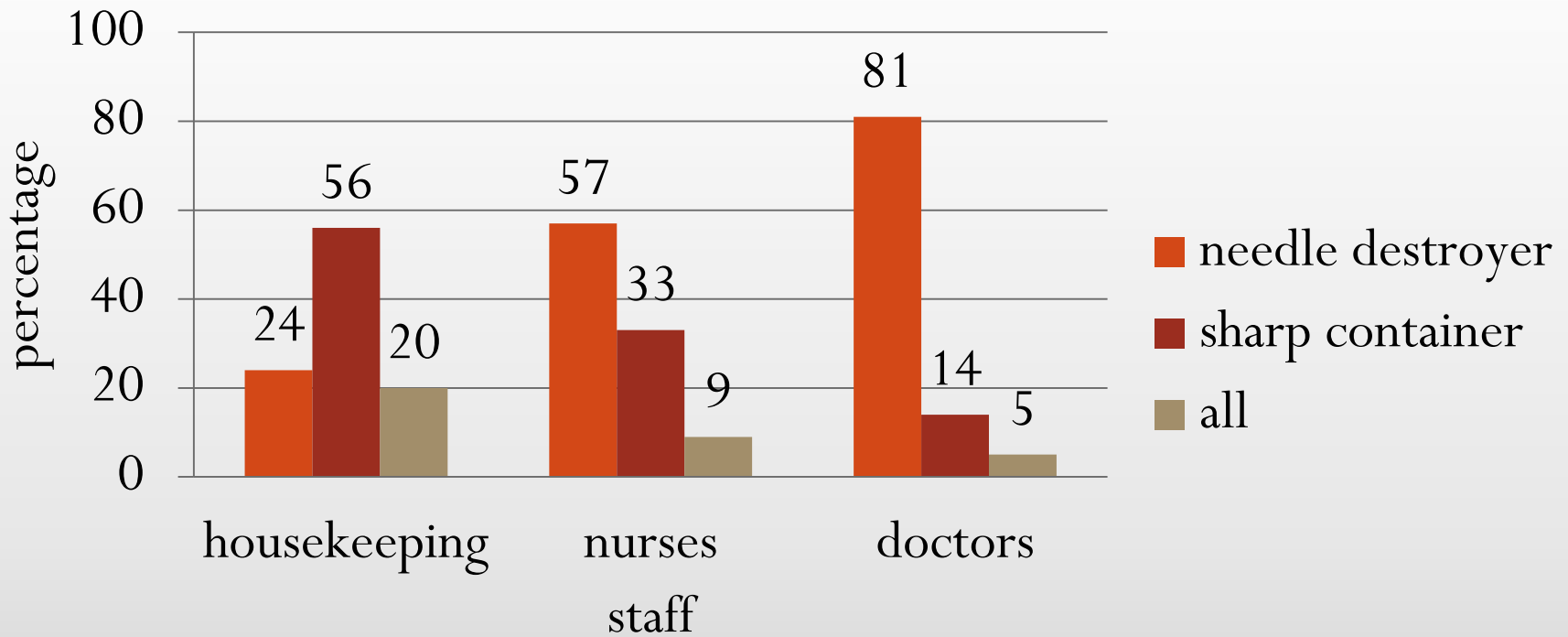


BLUE BAG ISTO DISCARD

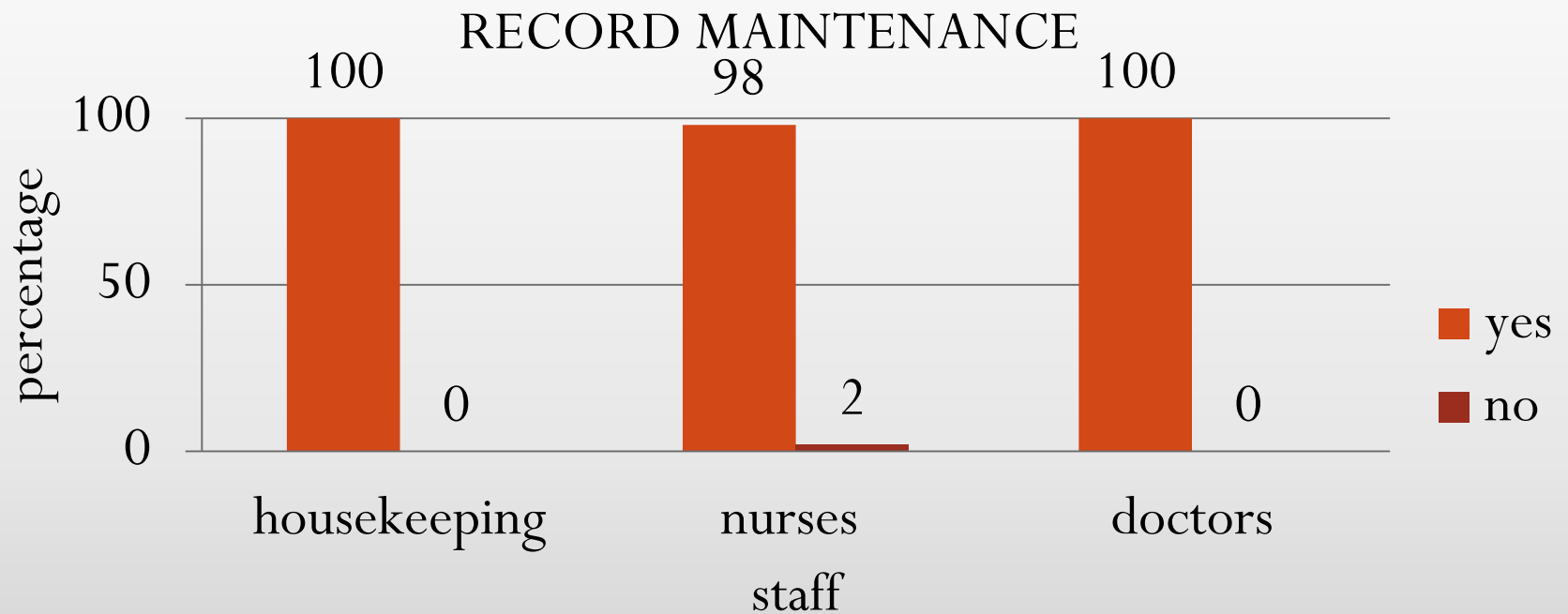


- As far as the plan for BMW is concerned 100% staffs are aware about it; irrespective of few almost all the staff knows the correct way of discarding the waste.

NEEDLES AND SYRINGES CAN BE DESTROYED BY

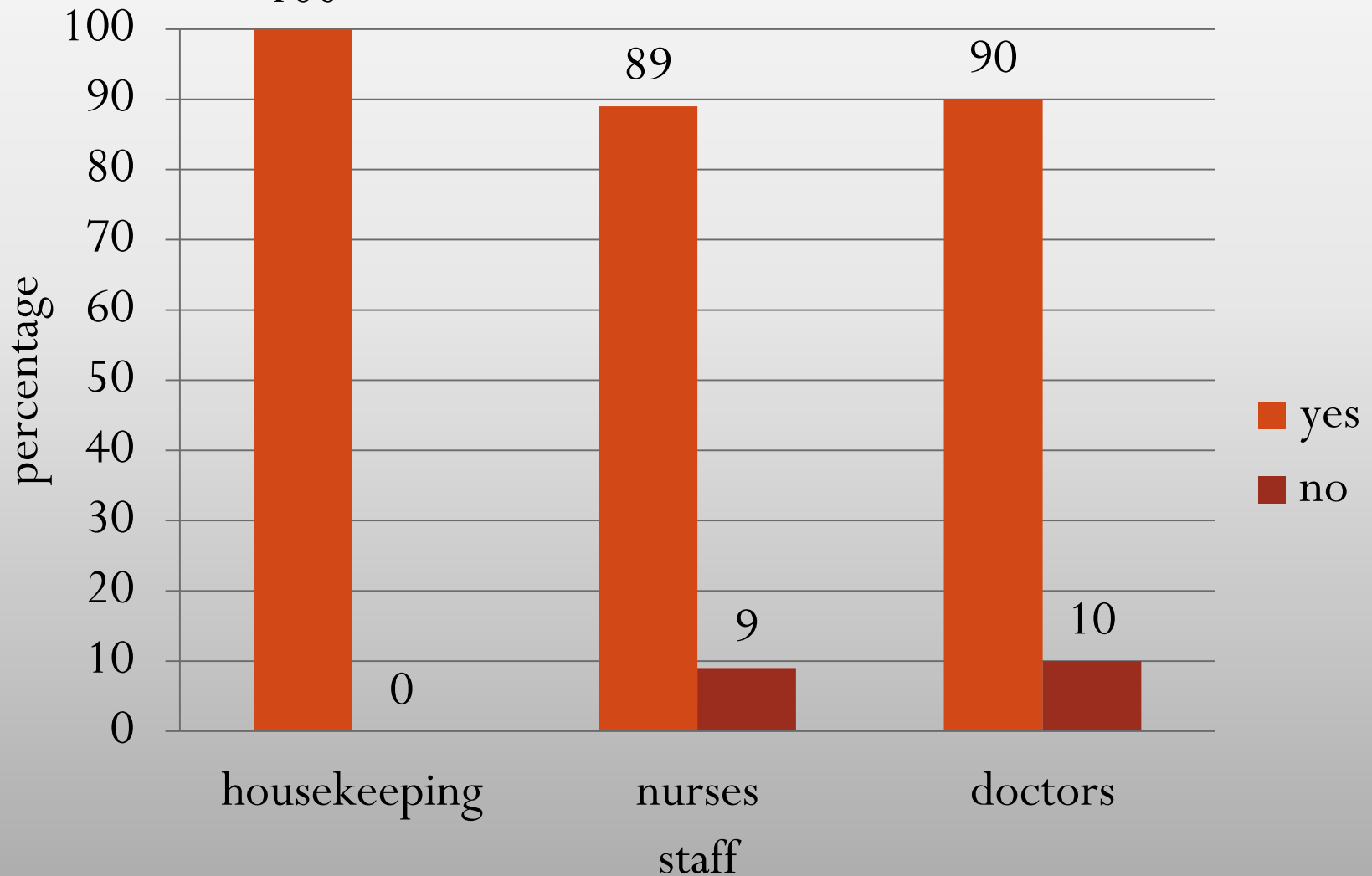


- 65% of the staff is aware about the equipment used for destroying the needles after use.

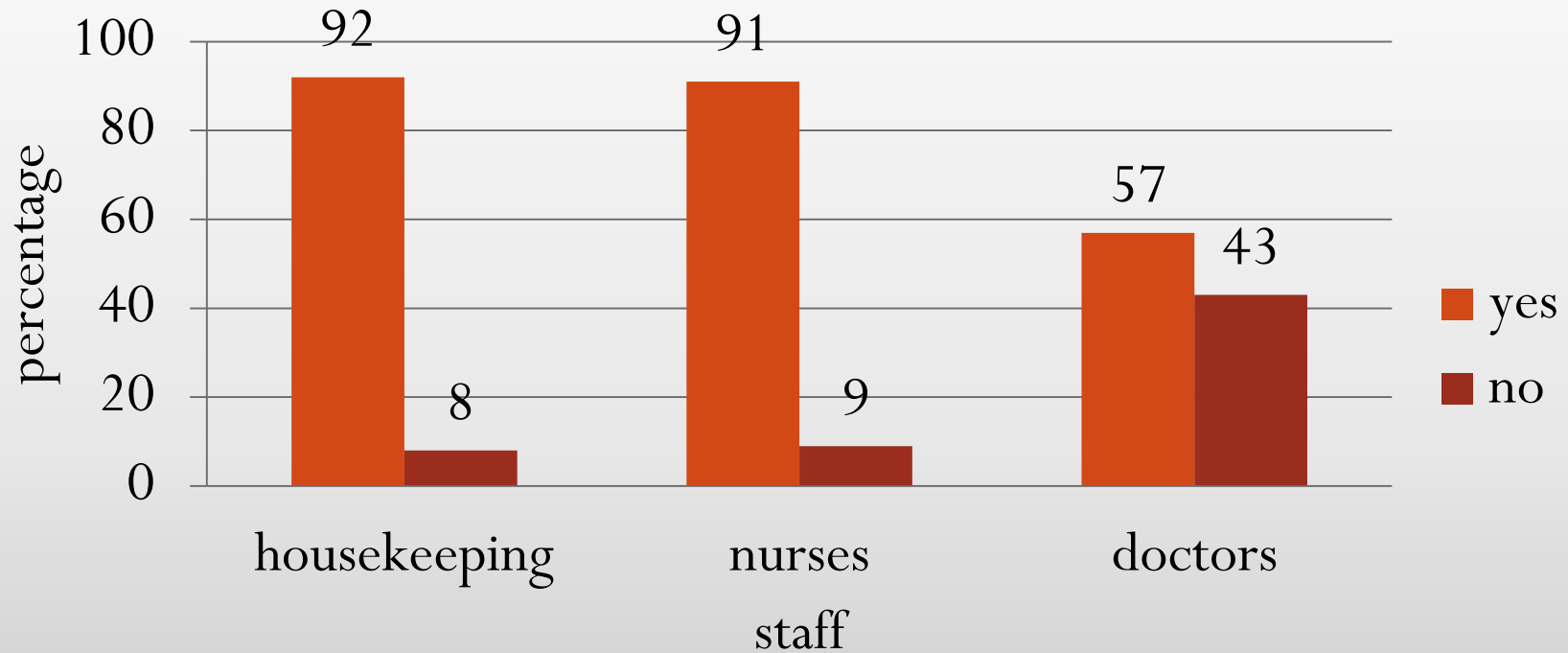


- 100% of the staff is aware about the registers and colour codes maintained for the daily bio-medical waste entry and disposal.

STAFF WHO UNDERGONE TRAINNING PROCESS

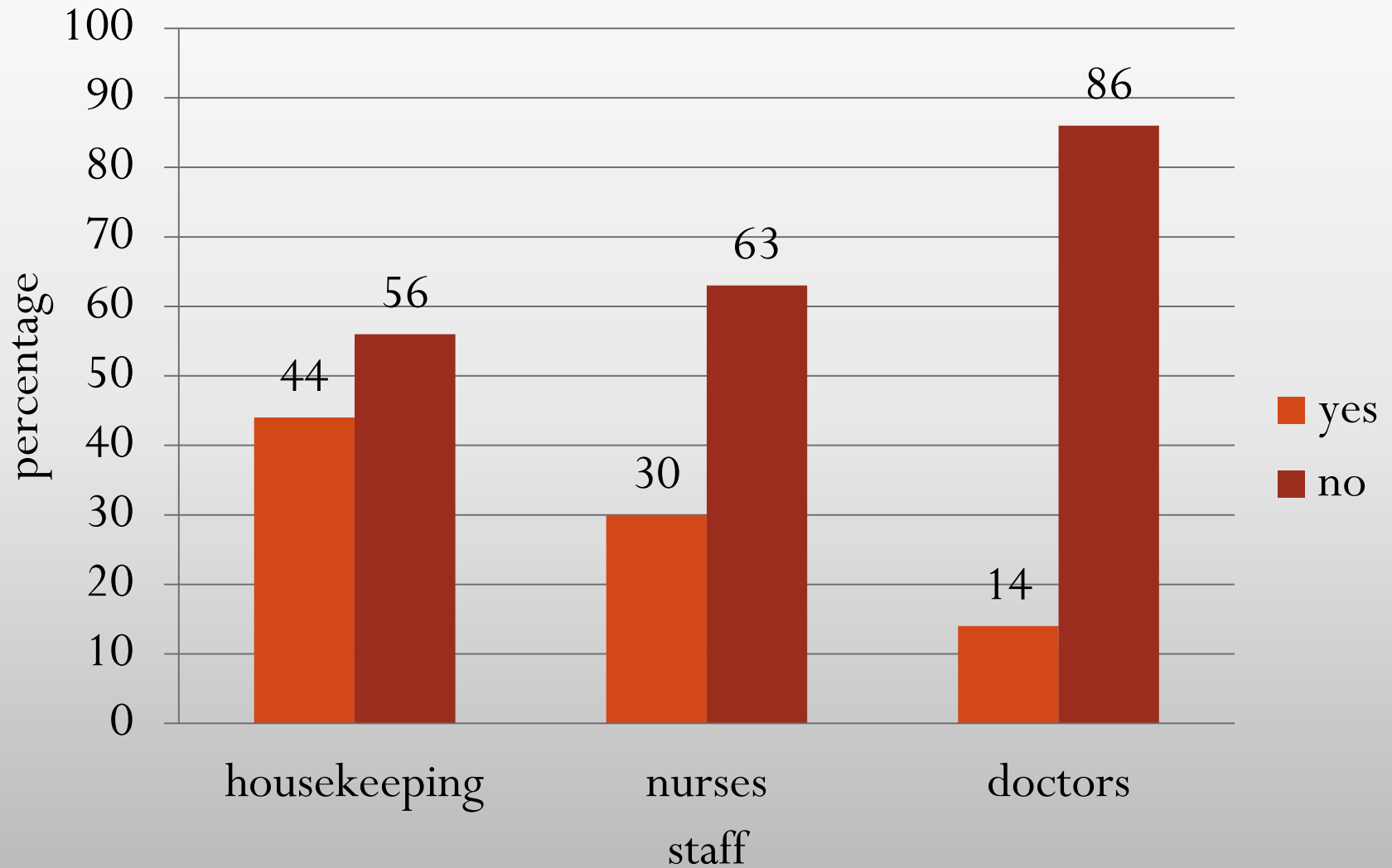


IF INTERESTED IN ATTENDING THE TRAINING PROGRAMME

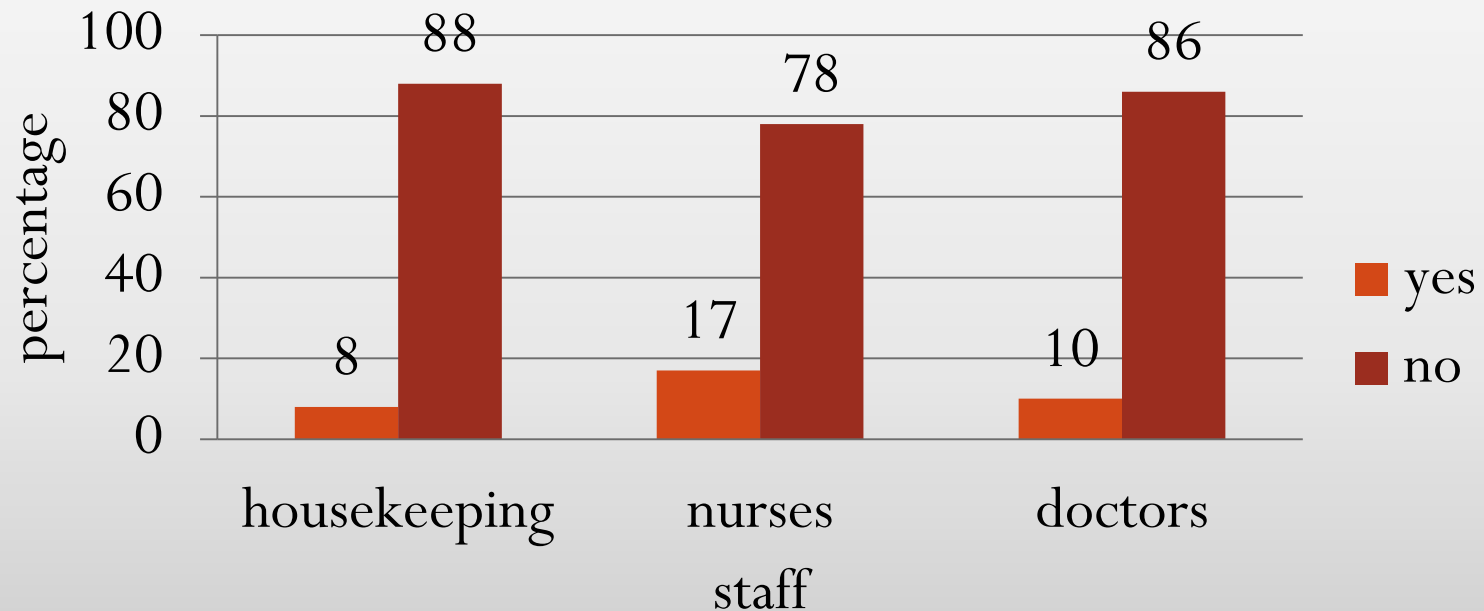


Regarding the current practices of bio-medical waste management that 92.7% of staff got training for biomedical waste management but only 80% are interested in attending the training sessions again.

Safe management of healthcare waste is not an issue to all



Safe management of healthcare waste is an extra burden?



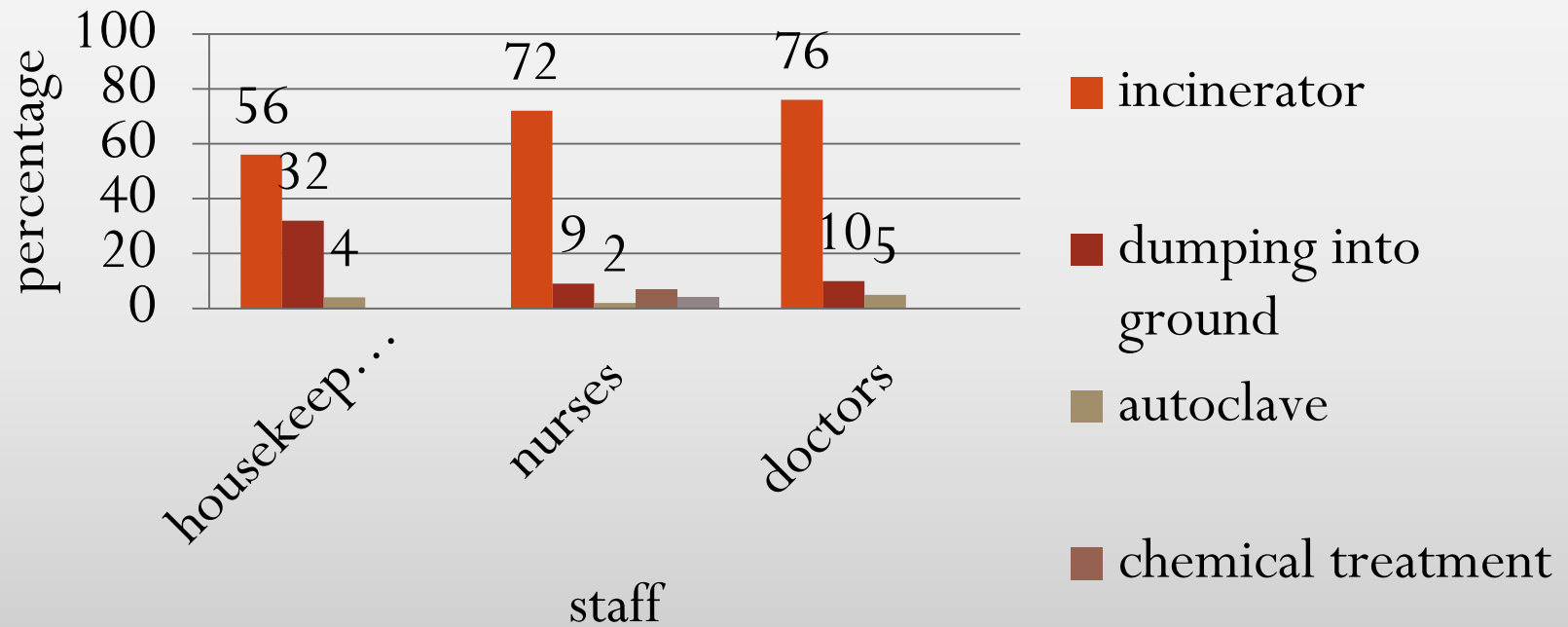
•When asked that is handling a waste is an extra burden to work only 10% felt so, rest consider it as daily or routine practice that needs to be followed.

Occupational safety to waste handlers is must?



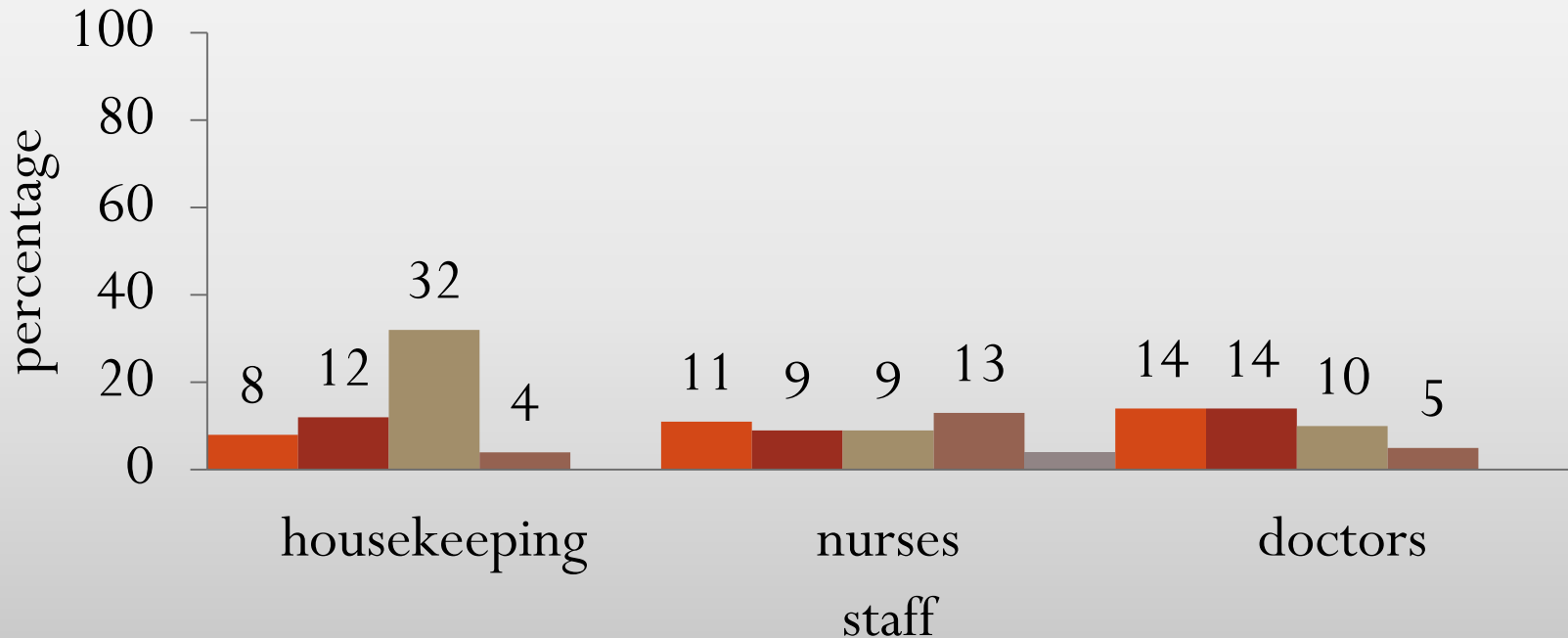
The best part is that more than 97.66% of the staff safe management is not issue at all and 81.66% of the staff thinks safety of waste handlers is a must.

Chart Title



98% of the staff is aware about the storage of the bio-medical waste but only 50% of the staff knows about the end treatment of the bio-medical waste

Red bag waste disposal is done by?

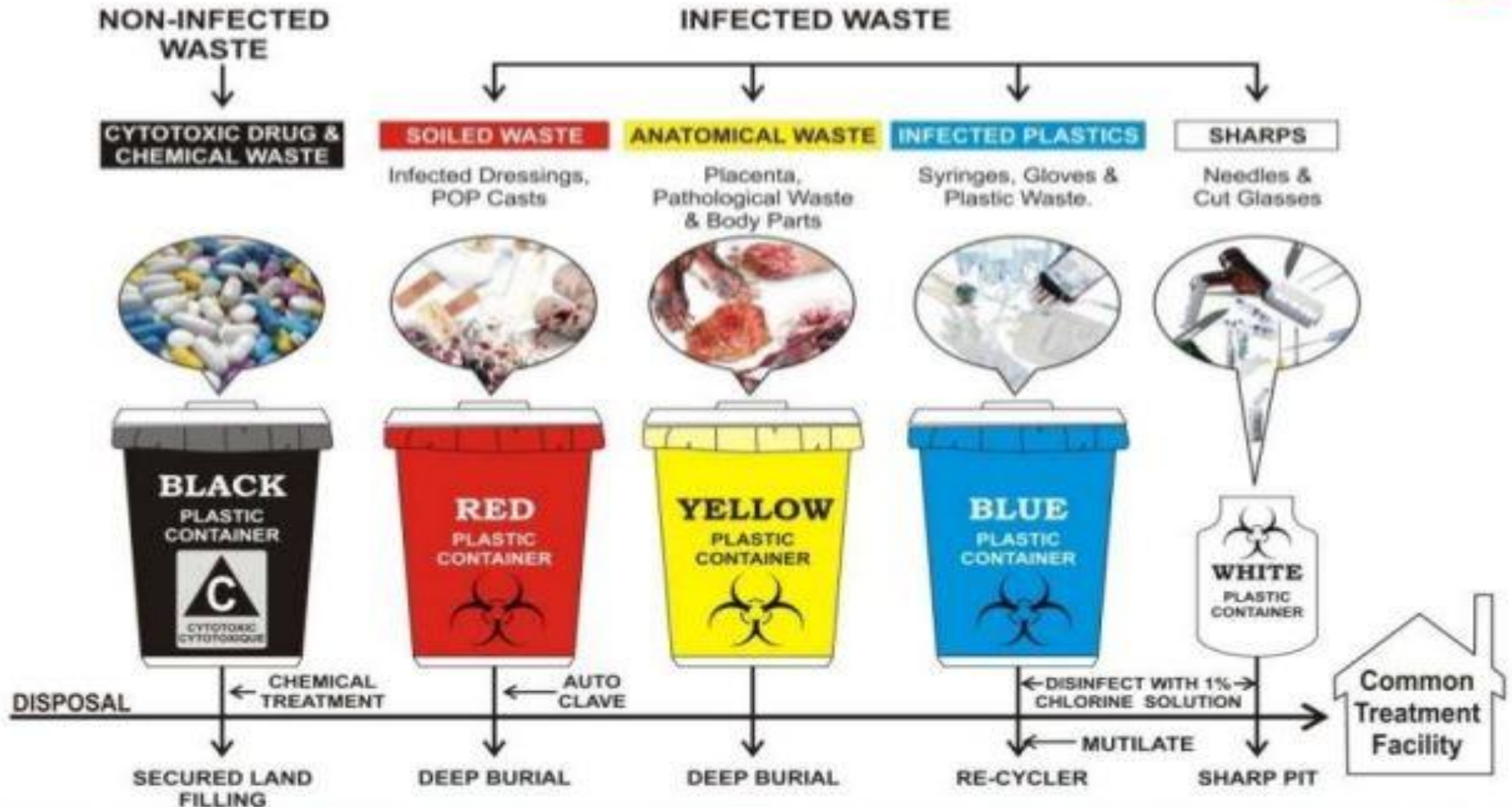


As far as the plan for BMW is concerned 100% staffs are aware about it; but only 44.6% of the staff knows about the proper segregation of the bio-medical waste.

Process mapping



SEGREGATION OF SOLID BIO-MEDICAL WASTE



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

Comparison with WHO standards

- WHO STANDARDS

1. Duties of the operator should be listed
2. BMW is divided into 4 categories
3. Chemical pre-treatment is done with 10% sodium hypochlorite
4. Outsourcing is strongly recommended (area should be within 75kms)
5. Waste sharp/metals are to be discarded in transparent puncture proof box

- GTBH MANAGEMENT

1. There is no such listings, as well as there is lack of hoardings and posters as well.
2. BMW is divided in 4 main categories
3. The pre-treatment is done with 10% sodium hypochlorite
4. Outsourcing is done as the area is within the 20kms to the hospital
5. Wastes like needles blade scalpels etc., are being discarded in puncture proof box

WHO COLOUR CODE FOR BIO MEDICAL WASTE

Cat.	Type of Bag/ Container used	TYPE OF WASTE	Treatment /Disposal options
Yellow 	non-chlorinated plastic bags Separate collection system leading to effluent treatment system ←	a) Human Anatomical Waste b) Animal Anatomical Waste c) Soiled Waste d) Expired or Discarded Medicines e) Chemical Waste f) Micro, Bio-t and other clinical lab waste g) Chemical Liquid Waste	Incineration or Plasma Pyrolysis or deep burial*
Red 	non-chlorinated plastic bags or containers	Contaminated Waste (Recyclable) tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles) and gloves.	Auto/ Micro/Hydro and then sent for recycling. not be sent to landfill
White 	(Translucent) Puncture, Leak, tamper proof containers	Waste sharps including Metals	Auto or Dry Heat Sterilization followed by shredding or mutilation or encapsulation
Blue 	Cardboard boxes with blue colored marking	Glassware	Disinfection or auto/ Micro/hydro and then sent for recycling.



Symbol for Bio-hazard

BIO-MEDICAL WASTE

DO YOU KNOW ?

- ☞ The Government has notified Bio-Medical Waste Management Rules, 2016 which are applicable to all.
- ☞ Defaulters are liable to be Prosecuted / Fined up to Rs. 1,00,000 (Rupees One Lakh) and 5 Years of Imprisonment.
- ☞ Bio-medical waste should be segregated at the source of generation in colour coded bags/containers.

YELLOW CONTAINER

Human Anatomical Waste

- Tissues
- Organs
- Body parts
- Placenta
- Fetus below viability along with MTP CERTIFICATE from Obstetrician

Animal Anatomical Waste

- Experimental animal carcasses
- Body parts organs, tissue
- Waste generated from animal used in experiments

Soiled Waste

- Contaminated with blood body fluids
- Dressing, plaster casts, cotton swabs
- Blood Bags containing residual blood/Blood components/

Discarded/Expired Medicines

- Antibiotics/ cytotoxic drugs alongwith glass/ plastic ampoules, vials.

Discarded Linen

- Mattresses & beddings contaminated with blood / body fluids

Chemical Waste

- Used in production of biological & used or discarded disinfectant

Chemical Liquid Waste

- Silver X-ray film developing liquid
- Discarded formalin
- Infected Secretions
- Body fluids
- Liquids from Laboratories
- Floor Washing Liquid
- Liquid from Housekeeping
- Liquid from disinfecting activities (Separate collection system leading to ETP)

Microbiology/ Biotechnology/ Clinical Lab Waste After Treatment

- Blood Bags
- Lab Cultures Stock
- Specimen of micro organism
- Live/attenuated vaccines
- Human/animal cell culture
- Residual toxins, dishes devices used for culture



INCINERABLE

RED CONTAINER

Recyclable Contaminated Waste

- Disposable tubing bottles
- IV Tubes sets
- Catheters
- Urine bags
- Syringes without needles
- Vacutainers with their needle cut
- Gloves



AUTOCLAVABLE

WHITE SHARP CONTAINER

- White sharp container translucent, puncture proof, leak proof tamper proof
- Metal sharp Needle
- Syringes with fixed needles
- Needles from needle tip cutter
- Scalpel, Blade
- Any Metal sharp



CARDBOARD BOXES WITH BLUE COLORED MARKING

- Broken, discarded Contaminated glass
- Medicine vials/ ampoules except those contaminated with cytotoxic waste
- Metallic implant



For Further details contact :
Department of Bio-Medical Waste Management
Guru Teg Bahadur Hospital
 GOVERNMENT OF NCT OF DELHI
 Room No. 509 & 322 Contact No. 011-22599474

CONCLUSIONS

- Concluding from the results, the importance of training regarding biomedical waste management cannot be overemphasized; lack of proper and complete knowledge about biomedical waste management impacts practices of appropriate waste disposal.
- More emphasis should be laid on attitude change of the staff depicting their concern for their co-staff which may lead to fatal infectious diseases and the record maintenance should be done as a part of duty not as a burden.

RECOMMENDATIONS

- High visibility could be achieved through hoardings near the bio-medical waste disposal bins.
- There should be proper display of posters regarding the right way of disposing, storing and transporting bio-medical waste.
- A regular audit should be done on how feedback calls are answered and recorded.
- Training should be carried out more often, specially housekeeping staff as they are ones who handles the waste and also there should be proper orientation program for the newly appointed staff regarding the disposal of the BMW, as they tend to do more mistakes.

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