





Development of a training module on infection control practices for interns and postgraduate students

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Introduction:

 Training session on Infection Control practices improves the knowledge of interns and postgraduate medical students regarding Standard precautions, Biomedical waste management and hand hygiene practices leading to better patient care.

Objectives of the study

- To determine the effectiveness of training sessions conducted on Infection control practices among health care professionals.
- To assess the standard and scope for improvement of a training session.

Material and methods:



- The study was carried out during April June 2025 among interns & post graduate residents by the Microbiology & Community medicine department.
- The participants were given a pre-test audit questionnaire to assess their preliminary knowledge on IPC practices.
- The participants were then given training regarding Standard precautions, Biomedical waste management & Hand hygiene practices for 1 hour by different faculties. Standardized materials were used for the training.
- Following the training, the post–test audit questionnaire was given to assess the change in the performance post training. The audit questionnaires were made based on the guidelines of CDC and WHO ¹²³.



Material and methods contd..

- •For all questions, a correct response of each categorical variable was scored 1 and an incorrect response was scored 0.
- •Participants were evaluated for their pre & post training knowledge after submission of the questionnaires and were divided into 3 categories based on their scores.
- •0-9 = POOR
- •10-15= MODERATE
- •16-20 = GOOD

A feedback form was given to the participants at the end of the training.

QUESTIONNAIRE GIVEN TO THE PARTICIPANTS:



STANDARD PRECAUTIONS	1 Standard precautions are used for the care of all patients regardless of their diagnosis and perceived infection status.					
	2 Isolation precaution is one of the components of standard precaution.					
	3 PPE is important in infection control because it acts as a barrier between infectious materials such as viral and bacterial contaminants and your skin, mouth, nose,					
	4 Surgical masks can protect the nose and mouth when procedures and activities are likely to generate splashes or sprays of blood and body fluids.					
	5 Mask must be placed on coughing patients to prevent potential dissemination of infectious respiratory agents from patients to others					
	6 The purpose of using a gown or apron is to protect clothes from splashes or sprays of blood and body fluids					
	7 Remove all personal protective equipment (PPE) before leaving the patient's environment.					
HAND HYGIENE	8 Stationary, telephones kept in wards, and doorknobs cannot be sources of infections.					
	9 Gloves must be worn every time during handling potentially infectious materials.					
	10 Gloves must be changed during patient care if you move hands from 'contaminated body site' to 'clean body site'					
	11 Alcohol based rubs are used before removing gloves.					
	12 Performing hand hygiene is required before and after patient care.					
	13 Hands should be washed with soap and water before and after handling potentially infectious materials irrespective of wearing gloves.					
	14 Washing hands after contact with the patient's environment is one of the elements in standard precaution.					
3MW	15 If you puncture hand with sharp instruments, you must report to the concerned authorities.					
	16 Segregation of clinical and non-clinical waste is important for preventing the spread of infection.					
	17 Ampoules injection that has been used must be disposed of in the clinical waste bin.					
	18 Puncture-proof containers should be used for disposal of sharps objects.					
	19 All linen from an infectious patient should be thrown in a red linen bag even when it is free from visible blood or body fluids.					
	20 Recapping of needles, in general, is appropriate.					

RESULTS



• A total of 108 Healthcare Workers (82 Post graduates and 26 Interns) participated in the study.

<u>Table 1: Distribution of participants according to the categories of knowledge in pretest and post-test (n=108).</u>

Categories	Pre-Test, N%	Post-Test, N%
POOR	33 (30%)	6 (6%)
MODERATE	60 (56%)	22 (21%)
GOOD	15 (14%)	80 (73%)

- The mean pre-test score of the participants was 12 ± 3 SD whereas the mean post test score was 17 ± 3 SD.
- Majority of the participants in our study had moderate preliminary knowledge of IPC practices in the pre-test which is similar to findings of Shrestha et al ⁴ and Assefa et al ⁵
 Table 2: Comparison of Pre-test scores of participants in related studies:

Present Study	Shrestha et al	Assefa et al
12±3 SD	13±2 SD	11±2 SD

RESULTS:



- In our present study, it was observed with training, there was a significant improvement in knowledge
 of healthcare workers.
- There was overall significant statistical change in the pre-test and post-test knowledge of participants regarding IPC practices (p value < 0.001)
- Significant statistical change was observed in the subtopics of IPC Standard precautions, Hand hygiene & Biomedical waste management between the pre–test & post-test scores of the participants.

<u>Table 3 – Paired T test to show statistical significance between pre-test & post-test scores</u>

		Topic	Co-relation	P - value
Pair 1	PreTest & Post Test	Standard precautions	0.573	< 0.001
Pair 2	PreTest & Post Test	Hand hygiene	0.554	< 0.001
Pair 3	PreTest & Post Test	Biomedical waste management	0.509	< 0.001
Pair 4	PreTest & Post Test	Overall	0.616	< 0.001

 A similar statistically significant increase in knowledge was observed after training in studies done by Savul et al ⁶ and a multicentric study on IPC ⁷



OUTCOME OF THE STUDY:

- With the improvement in infection control practices compliance, good practices among Health care providers was established.
- This will help in substantial reduction of Hospital Acquired Infections among patients.
- A standardized infection control training module was devised based on the analysis of the knowledge of the students as well as their feedback.
- There was positive feedback from the wards and clinicians regarding the IPC practices of the participants post training.
- We were encouraged to hold such training sessions more frequently for other healthcare workers in the hospital.

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PDF Links to the QUESTIONNAIRE and STUDY

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