

DETECTION OF CRITICAL POINTS IN IMPLEMENTATION OF PROPER HAND HYGIENE AMONG HEALTHCARE STAFF FROM MICROBIOLOGY DEPARTMENT

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Abstract

Hand hygiene has a fundamental role in the prevention of one of the most challenging problems in the management of modern hospitals: nosocomial infections and occupational diseases. Aim of this survey was to detect the negligence of obeying the protocol for hand hygiene among laboratory staff in the Microbiology Department, Clinical Center in Skopje after participating in a training course for implementation of WHO guidelines. The group of 36 Health Care Workers (HCW) has been divided into seven different groups, based on their specific work in the Institute of Microbiology. The investigation was conducted in two phases: phase-1 was before the training course and phase-2 immediately after taking the 6 months training course. Hand samples were taken with the technique of the moist swab on the left hand and the fingertips touch method on the right hand. Special fluorescent chemistry mixed to an alcoholic based disinfectant was used to make visible under UV-light (366nm) negligence in the 6-step procedure for proper hand hygiene. Pathogenic bacteria as transient micro flora have been detected on the hands of 67% persons in phase-1 and 39% in phase-2. It was found that 17% of the cultures from the left hand detected pathogenic bacteria and 39% on the samples taken from the right one (significant difference ($p = 0.041$)). Dorsal face of the hand was mostly neglected area during performing hand-washing procedure. Training experience has given better professional behaviour and awareness of all lab staff. The Touch Method appears to be the more sensitive method than swabbing the critical areas of the palms. It is also evident (significant) that awareness of the problem of the staff, obtain some changes in their attitude and practice.

Introduction

Hand hygiene has a fundamental role in the prevention of one of the most challenging problems in the management of modern hospitals: nosocomial infections and occupational diseases

Aim of the survey

To detect the negligence of obeying the protocol for hand hygiene among laboratory staff in the Microbiology Department, Clinical Center in Skopje after participating in a training course for implementation of WHO guidelines

Material and methods

Working group

36 HCW included and divided in seven different groups, based on their specific work.

Design of study

The investigation was conducted within Multidimension Hand Hygiene Approach (IMHHA: administrative support, supplies availability, education and training, reminders in workplaces, process surveillances and performance feedback) and divided in two phases: phase-1 was before the training course and phase-2 immediately after taking the 6 months training course (every Monday morning before starting the laboratory work).

Investigation

Hand sampling technique: a) moist swab (left hand) and b) the fingertips touch method on the right



Special fluorescent chemistry mixed to an alcoholic based disinfectant was used to make visible under UV-light (366nm) negligence in the 6-step procedure for proper hand hygiene, by UV optics camera

Resultes

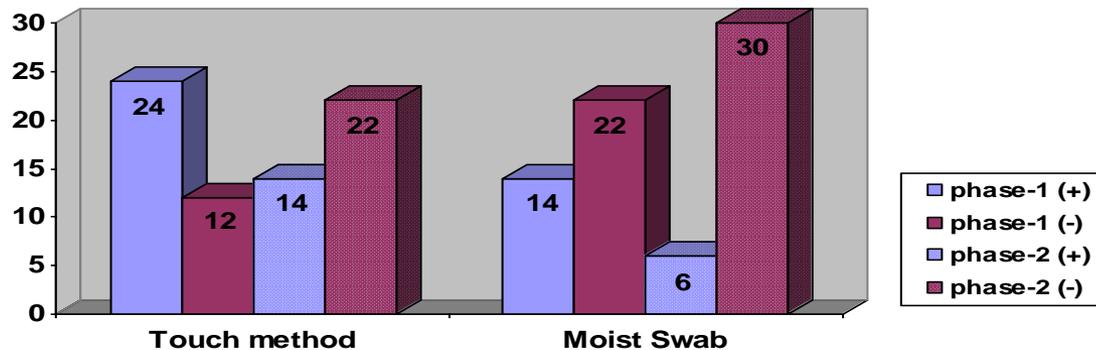


Fig1. Isolation of pathogenic bacteria with two different techniques of taking samples from hand in phase-1/ phase-2

Groups	I (N=4)	II (N=4)	III (N=6)	IV (N=2)	V (N=8)	VI (N=4)	VII (N=8)	TOTAL 36
<i>Enterobacter spp.</i>	2/0						4/2	6/2
<i>Enterococcus spp.</i>		2/2			4/2			6/4
<i>Klebsiella pneumoniae</i>			4/0			2/0	2/4	8/4
<i>Pseudomonas aeruginosa</i>	2/0				0/2	0/2	2/0	4/4

Table I Results from microbiological testing of hand hygiene within laboratory staff I phase 1/phase 2

Legend

N° of colonies = number of saprophytic bacteria

Group I - administrative staff

Group II - technicians plating samples

Group III - technicians in bacteriological laboratory

Group IV - technicians in serological laboratory

Group V - Microbiologists

Group VI - doctors running specialization Microbiology

Group VII - cleaning staff

RESULTES

Method	Pathogenic bacteria				Total
	phase-1		phase-2		
	(+)	(-)	(+)	(-)	
Touch method (right hand)	24(67%)	12(33,%)	14 (39%)	22(61%)	72
Moist Swab (left hand)	14(39%)	22 (61%)	6 (17%)	30 (83%)	72
Total	38	34	20	52	144
	$\chi^2 = 5,57$ df = 1		$\chi^2 = 4,43$ df = 1		
	p = 0,0182		p = 0,0353		

Table 1. Isolation of pathogenic bacteria with two different techniques of taking samples from hand in phase-1/ phase-2

Conclusions

Training experience has given better professional behavior and is essential for higher awareness of the stuff.

Tips of the fingers are the place which is most heavily contaminated during laboratory work.

Dorsal face of the hand was mostly neglected area during performing hand-washing procedure.