



Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com



Short report

Hospital hygiene and communicable disease in RMS

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ARTICLE INFO

Keywords:

ABSTRACT

Objectives: To reduce and prevent the risk of infection and complications, also to improve the basic hygiene practices by health care workers. **Methods:** This descriptive-analytical study was conducted in 13 hospitals in Jordan from the Royal Medical Services (RMS), between February to April 2013. After providing written Consent, 340 medical workers participated in the questionnaire to collect information. The data were analyzed by reliability statistics (Scale: all variables), descriptive statistics, and other appropriate tests using SPSS software Version 17.0 **Results:** We found out that the designed questionnaire Fit to our study, since the reliability statistics Shows that (Cronbach's Alpha is 0.878). The Descriptive analysis shows that medical staff agrees with the hygienic procedures in the hospitals of RMS. **Conclusion:** It is necessary to continue to assure the hygienic Regulations and procedures among the medical Staff in the hospitals of the Royal Medical Services (RMS) through staff induction yearly workshops and training sessions, that help the workers of this important field to be able always up to date with the new techniques and procedures in the basic principles of prevention and control of the infections that may be acquired in health-care.

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1. Introduction

Following and performing the hospital hygiene and infection control procedures to outlines the basic principles of prevention and control of the infections that we may have in the health-care facilities through:

- Epidemiology of nosocomial infections

There are two forms:

- Endogenous infection, Self-infection, or auto-infection
- Cross-contamination followed by cross-infection
- The transition from contamination to infection

Healthy individuals have a normal general resistance to infection. Patients with underlying disease, newborn babies, and the elderly have less resistance and will probably an infection after contamination. Health-care workers are thus less likely to become infected than patients.

Guidelines are provided here for:

- Cleaning the general hospital environment;
- Cleaning items of shared equipment; and
- Education and training of staff.

Transmission of microorganisms from the environment to patients may occur through direct contact with contaminated equipment, or indirectly as a result of touching by hands.

Evidence suggesting that environmental contamination is to blame for the transmission of HCAs is therefore not conclusive. Nevertheless, the evidence that pathogens responsible for HCAs can be widely found in the hospital environment and hence readily acquired on hands by touching surfaces does demonstrate the importance of decontaminating hands before every patient contact.

Many microorganisms recovered from the hospital environment do not cause HCAI. Cleaning will not completely eliminate microorganisms from environmental surfaces and reductions in their numbers will be transient (3).

Some evidence suggests that routine cleaning methods may not be sufficient to eliminate surface contamination with MRSA (6), (9). Disinfectants have been recommended for cleaning hospital

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environment, but a systematic review failed to confirm a link between disinfection and the prevention of HCAs, though contamination of detergent and inadequate disinfection strength could have been an important confounder (4).

In laboratory tests a combination of cleaning with detergent followed by hypochlorite was required to consistently eliminate norovirus from surfaces and prevent cross contamination(5). Dusting and cleaning using detergent was reported to have no effect on the number of MRSA isolated from the hospital environment, but the organism was virtually eliminated by exposure to hydrogen peroxide vapour(6)

Staff education was lacking on optimal cleaning practices in the clinical areas. Knowledge deficits may hinder the application of cleaning practices and monitoring and evaluation was indicated. This is further reinforced by an observational study, which noted that lapses in adhering to the cleaning protocol were linked with an increase in environmental contamination with isolates of *Acinetobacter baumannii* (3).

A second systematic review of four cohort studies comparing the use of detergents and disinfectants on microbial contaminated hospital environmental surfaces suggested that a lack of effectiveness was, in many instances due inadequate strengths of disinfectants, probably resulting from a lack of knowledge(4)

The choice of disinfectant, concentration, and exposure time is based on the risk of infection associated with the use of the item. The sterilization methods briefly discussed include steam sterilization, ethylene oxide, new low-temperature sterilization technologies and dry heat. When properly used, these disinfection and sterilization processes can ensure the safe use of invasive and noninvasive medical devices. However, this requires strict adherence to current cleaning, disinfection, and sterilization guidelines.

Potential sources of cross infections are doctors' white coats, hospital workers' uniforms (scrubs), hospital garments, privacy drapes, stethoscopes, bed rails and common hospital surfaces.

Infections lead to serious illnesses, increased resistance of microorganisms to antimicrobials, prolonged hospital stays, tragic loss of life and additional financial burden to patients and healthcare systems. In developing countries, poor hygiene and sanitation, limited financial resources compounded with malnutrition and endemic diseases increase the burden significantly (WHO).

The mission of Hospital Hygiene (HH) is to raise Global Awareness of the burden of HAI and implement basic and proven protocols to reduce and prevent the risk of infection deaths in Developing Countries. Risk prevention will be achieved through education. Education will be aimed at improving basic hygiene practices by healthcare workers in developing countries in the form of:

- Hand Washing Protocol
- Uniform Hygiene Protocol
- Donation of scrubs to healthcare workers in developing countries
- Acquisition of HAI surveillance and compliance data.

Table – 1 Characteristics of the main disinfectant groups used in RMS

Disinfectants	Applications			Dilution	Efficacy after dilution
Anios	Alcohol hand rub	1 puff	Merge instrument 10-15 min	10 ml / liter	Up to 24 hr
Bodedex	Glitter Alde Hyde for instrument	Clean instrument Disinfectant	Merge instrument 10-15 min	Ready to use	Up to 28 days until it became turbid
Steranios	Disinfectant and sterilizer for instrument	sterilizer Isolation rooms and	One hour	Ready to use	Up to 28 days until it became turbid
Microbac	Disinfectant and sterilizer for surfaces	high critical areas	Wet towel or spry and wait just to be dry	10 ml / liter	
		All areas		2.5 ml / liter	Up to 24 hr

Table 2 – Mean Sterilization Procedures item score in rank order

Item	I completely agree 1	2	3	4	I do not agree at all 5	Mean Score
	Score (%)					
1. Did you hear about disinfectants?	65.7	9.3	5.7	9.0	10.1	1.88
2. Do you know how to use disinfectants?	47.2	25.4	16.4	7.8	3.0	1.93
3. Are their training courses on how to use disinfectants?	46.6	19.4	18.2	9.6	6.0	2.08
4. Is there a follow-up to the application of the training courses?	42.4	23.3	17.0	13.7	3.3	2.11
5. Are there inspection committees to follow up sterilization procedures?	51.0	18.2	17.0	7.8	5.7	1.98
6. Is there a way to make sure about the effectiveness of sterilization?	51.0	22.7	15.2	9.3	2.4	1.90
7. Is there any health problems associated with poor sterilization?	43.6	21.5	20.0	9.9	4.8	2.10
8. Are reusable objects being sterilized before usage?	55.8	22.1	11.9	6.9	3.0	1.78

On the basis of these results, it is necessary to continue to follow and to upgrade the sterilization procedures in the hospitals of the Royal Medical Services

4. Discussion

The gathered data were analyzed using descriptive statistics using descriptive statistics, and reliability analysis test by Statistical Package for Social Sciences version 17.0 (SPSS Inc., Chicago, IL, USA). Under the consultation of a statistician, we used descriptive statistics to depict the sterilization procedures and reliability analysis (scale: all variables) test to measure the Cronbach's Alpha which is 0.878 that assure that the main items in the study were reliable to measure in this questioners. The results of the descriptive statistics were summarized in table 2.

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