

## REVIEW ARTICLE

# HEALTH CARE WORKERS SAFETY: SCREENING AND IMMUNIZATION: A REVIEW

Al Johani Abdulrahman A.<sup>1,2,\*\*</sup>, Karmegam Karuppiah<sup>1,\*</sup>, Omar M Al Nozha<sup>2</sup> and Al Mutairi Alya O.<sup>3</sup>, Kulanthayan K.C. Mani<sup>1</sup> and Sivasankar Sambasivam<sup>1</sup>

<sup>1</sup>Department of Occupational Health and Safety, Faculty of Medicine and Health Science, Universiti Putra Malaysia, 43400 UPM Serdang, Malaysia.

<sup>2</sup>Faculty of Medicine, Taibah University, Medina, Saudi Arabia.

<sup>3</sup>Department of Mathematics, Faculty of Science, Taibah University, Medina, Saudi Arabia.

\*Correspondence: megam@upm.edu.my\* & johani2011@hotmail.com\*\*

## ABSTRACT

The paper puts forth the need for health care workers safety whilst undertaking their job on a daily basis. Presently there are number of factors that are directly linked to the safety of health care workers. However, Occupational Health is very important and useful for health workers that are exposed to their job hazards. Every year, many lives are lost because of the spread of infections in hospitals. Every hospital's occupational health departments should ensure that all new staff are vaccinated to protect them against microorganisms carried by other patients, and with vaccinated against preventable diseases. This will help to prevent the health workers from occupational exposure to patients' blood or any other bodily substances, including injury from sharp objects, and also guarantees that the new employees does not infect the patients with infectious diseases. Furthermore, all the new staff should be screened for blood borne pathogenic diseases.

**Keywords:** Occupational Health, Sharp employment screening, Healthcare Workers and vaccination.

## INTRODUCTION

This paper explains the Sharp Object Injury Report in Saudi Arabia that was collated utilizing the information from 21 different health care centres for the first three months of 2012. The report states that a total of 66.4% primary health care workers were injured compared to 70.8% physicians who were also injured. The main locations where these injuries occur are mainly in the Patient Rooms where the injuries percentage breakdown was 48.9%, 13.6% in the Emergency department, and 11.5% in the Recovery or Operating Room.

The main occurrence of these injuries is 17.9% while the injections are given, 17.2% is from drawing the venous blood samples and 14.8% is from suturing (Anjum Hashmi and Indah, 2012). Wounds initially occur on the hands of the affected staff, where 68.3% of the time the staff wore a gloves on a single hand when the sharp objects penetrated and 26.9% of the time the staff wore no gloves and only 4.8% of the times the infected needle penetrated when the staff wore the gloves on both hands (Tahir, 2000). Among the interventions that can be used are by firstly making a mandatory law for the use of gloves on both hands. The next intervention can be making it mandatory for the attendance to seminars or trainings on the safe use of Needlesticks and Sharp Objects. The safety of health care workers has to be stepped up as infectious diseases have been recognized as one of the key occupational risks and hazards for

health care workers. Health care workers can take steps to prevent the spread of infectious diseases as these steps are part of infection control.

## Procedure requirement on the screening test for Health Care Workers

The following are the right procedures to be carried out:

1. Each Health Care Worker is required to undergo the following pre-employment screening tests. They are:
  - a) HIV-Ab, HbsAg, HCV-Ab.
  - b) Anti-HBs Antibody test for those with history of HBV vaccination.
  - c) Varicella and Rubella Anti-body tests in case there is no history of suggestive infection with these viruses, or in case there isn't history of vaccination against these viruses.
  - d) TB skin test PPD.
  - e) Chest X-Ray.
2. These Health Care Worker should also be immunized against:
  - i) Hepatitis type-B: using three doses of Hepatitis B vaccine sequentially to be given to all non-immunized employees upon hiring.
  - ii) Hepatitis B antibody will be checked after the vaccination is complete, if the level is < 10 IU, a second series of 3 doses will be given.

- iii) If the repeat Hepatitis B Antibody is still <10IU, then the employee should be labelled as a non-responder.
- iv.) Varicella: should be offered to all non-immunized employees who are working in the Pediatrics and Hematology-Oncology Wards.
- v) Measles, Mumps, and Rubella immunization should be offered to non-immunized employees.
- vi.) Influenza vaccine should be offered before and during the community influenza season.
- vii) Diphtheria and Tetanus should be offered to employees once in every 10 years.
- viii) Meningococcal vaccine should be offered to employees every 3 years.

### Environmental Services

**Personnel:** Personnel should wash their hands before and after each interaction with the patients at all the times as prescribed. Personnel should abide by the guiding principles of the Health Department in their respective areas. The workers should attend their yearly routine training for standard safety measure and principles of infections control. Taking food and drinks should only be done in the reserved areas only. The Health workers should comply with their respective units' dress code. While inside the patient's room, health professionals should always be cautious and ensure that their attires do not get in contact with the patient and/or have any contact with the blood of the patients, fluids from their body or body excretion.

All of the health professionals should adhere to the the guidelines pasted on the door panel leading to the patients' isolation rooms. The documents used for the patients (e.g. chart, records, and papers) should not be kept on the surface of the patients' rooms but instead be properly disposed of. Suspicious or known contact and/ or acquired infections or transmittable diseases should be immediately alerted to the Health care and diseases control Units or the workers' Health units immediately. All workers should wear clean uniform every day. In case of accidental cut and laceration it should be should be protected with a watertight bandage. The usual policy on precautionary measures should be observed in the case of any or all blood or body fluids contact.

### Environmental Cleanliness

There should be complete cleaning and sterilization of all of the surrounding environment and surface of the admitted patients' surroundings. Anti-septic substances meant for skin use should not be used to clean the surfaces. Sterilizer fogging should be avoided. Aeration of rooms should be restricted for only tuberculosis patient areas. There should

be a daily routine cleaning of uncarpeted floors and the sides of the patients' bed in all of the wards. The vacuum cleaners should be the appropriate designed to clean and remove air without re-suspending dust particles from the floor. All stores where carts and other housework carts are stored and store rooms should be well - cleaned daily. Water containers like buckets should be kept empty and dry before they are stored. All refuse containers should be covered with waterproof plastic materials and should be wrapped until it is disposed of.

All dispensers including paper towel, soap, and tissue paper should always be replaced. Sharp containers should be moved away from patients' ward by the nurses and kept in the in the laundry rooms. Antiseptic cleansing agents shall be prepared prior to each use preferably in less than sixty minutes while the patient is discharged from the room. Also the furnitures' horizontal arms and beddings should be scrubbed with antiseptic soaps. All the floors in the wards should be washed and dried or washed with an antiseptic cleansing agent. Walls, screens and draperies should be regularly washed when they appear to be dirty. Partitioning draperies should also be replaced when they are dirty as well. Cleaning items such as disinfectants, water, bucket, cleaning cloths, and mop heads, should be changed routinely, for instance, after cleaning of every 4 to 5 rooms, and after the cleaning blood spills.

The Health care unit and Epidemiological units should be referred to when trying to clean room of the patient's room affected by Smallpox, or any dangerous type fevers (such as Lassa, Ebola, or haemorrhage fevers). The Health care environmental services unit should be responsible for the regular and routine procedural clean upkeep of the patients' room, bathroom, corridor, nursing station, out- patient wards and other surroundings. The antiseptic and disinfectant solutions to be utilized by the environmental workers should be constant routinely reviewed and approved by the Health Care Epidemiological unit.

### Cleaning Schedules

Inpatient rooms should have daily routine cleaning and dusting. Isolation room should be procedures cleaned on a daily basis. When a patient is discharged, the room should be cleaned thoroughly. The patient's bed should be cleaned before being occupied by other patients. Patient equipment should also be attended to. Procedure rooms' floors should be cleaned with a disinfectant solution after each patient leaves and on a daily basis. Offices and conference rooms should be dusted and cleaned weekly unless if visibly dirty. General cleaning and waxing should be carried out every week or as needed and when there is vacant room. Monthly

general cleaning of all patient rooms and stripper (wax remover) should be carried out. Terminal cleaning for isolation rooms after the discharge of patients utilising Clorox with detergent (tide), and then Dettol.

## CONCLUSION

The paper reviews the precautionary measures that are imperative in ensuring the Health industry workers' occupational safety and steps needed towards achieving effective infection control arising from occupational risks involving newly contracted Health Care workers.

A number of Health care workers and physicians suffered injury while on duty either at the patients' room, emergency section, recovery/theater room, or while conducting sutures.

Greater cases of the injury resulted when Health care workers wore either single or no globe on their hands with few instances when globe is worn in the two hands.

As such, this paper raises important precautionary preventive measures that could help reduce occupational risks and ensure safety. These includes outlawing mandatory wearing of globes, seminars and training of Health care workers on the use of needle sticks and other sharp objects, pre-employment screening tests, provision of immunization against infectious diseases, ensuring effective environmental services and environmental hygiene. These steps will go a long way towards achieving effective control of infections due to occupational risks of the Health care workers.

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## COMPETING INTERESTS

There is no conflict of interest.

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