

Occupational Health Hazards in Emergency and Triage of Health Care Setting

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Introduction

An emergency is a situation that poses an immediate risk to health, life, property, or environment. Emergency Department is a medical treatment facility specializing in emergency medicine, that is, acute care of patients who present without prior appointment, either by their own means or by ambulance^[1]. Triage is the process of determining the priority of patients' treatments based on the severity of their condition^[2]. Where as health care workers define to be all people engaged in actions whose primary intent is to enhance health. They make important contributions and are critical to the functioning of most health systems. Health care workers (HCWs) working in emergency & triage setting are exposed to wide range of physical, chemical, and biological hazards in the workplace. Majority of HCWs are the first in hospital to come in contact of patients with traumatic injury and high acuity illness. Because of the emergent nature of their conditions, emergency department (ED) environment may be less controlled. Because of life-threatening conditions, proper steps of procedures may not be followed by HCWs. The rapid turnover of patients during a single shift ED allows HCWs to come in to contact with a large number of sick patients and wide variety of hazardous circumstances^[3].

Health care workers who are involve in caring patients in emergency are Doctor, Nurse, Pharmacist, Dentist, Laundry worker, Housekeeper, Dental hygienist, Maintenance staff, Laboratory technician, Radiology technician, Physical therapist.

Types of Health Hazards

Physical aspects: it includes injuries and accidents, Blood borne

infections, Needle stick injuries, Hazardous Chemicals, slips or falls, latex allergy, equipment & electrical hazards, Workplace violence, ergonomic problems, communicable diseases.

Psychological Aspects: Work place Stress

Blood, OPIM, Blood borne Pathogens: Emergency Department (ED) workers are at particular risk for exposure to blood, OPIM, and blood borne pathogens because of the immediate, life-threatening nature of emergency treatment^[4]. Percutaneous exposure (PCE), mucocutaneous exposure (MCE) to blood and blood-containing body fluids and Venipuncture procedures also cause for blood borne pathogens^[5]. Blood borne pathogens may get transmission by needle stick injury^[6]. Infectious diseases, such the immunodeficiency virus, hepatitis B, C & G viruses and tuberculosis. The likelihood of being exposed in the emergency and triage setting more compare to other^[7].

Needle Stick Injuries: Needle sticks injuries are the single greatest reason for health occupational hazards among health care providers. Rate of exposing is high in emergency department (19.2 %) as compare to other areas of hospital. Among health care personal Nurses are more exposed (65.8%) to needle stick injuries, than physicians (19.2 %) Technicians (9.6 %) and others (5.5 %)^[8]. Causes of most recent needle stick injury among health care workers is Fatigue (50.4 %), lack of assistance (27 %), rushed (11.7 %) and 10.9 % couldn't have been prevented^[9]. Overall 34.8 % of health care workers are getting

needle stick injuries during their life time. Most of the needle stick injuries occurred during sharps disposal (31.7 %), operative procedures (21.6 %), while collecting blood samples (13.8 %), while starting an intravenous line (13.4 %) and while giving injections (13.2 %)^[7]. Because of these needle stick injuries 37 % of the hepatitis B among Health Care Workers (HCWs) were the result of occupational exposure (Sharp injuries) whereas less than 10% of the HIV among health workers is the result of an exposure at work, needle stick injuries. But 95 % of the HIV and Hepatitis occupational exposure are preventable with safe practical, low-cost measures^[10].

Conjunctiva exposure: Conjunctiva exposures are happening because of lack of eye protection and it is most frequently associated with pathogen transmission among all types of blood exposures^[11]. HCWs should wear eye and face protection during invasive procedure. Eyeglasses aren't enough. Eye protection should incorporate a seal above the eyes to prevent blood from dripping from the forehead into the eyes^[12].

Slips/Trips/Falls: Falling and slipping may be there because of the emergency atmosphere, (i.e., high traffic and compact treatment spaces). Slips/trips/falls may be a specific concern for ED areas. There is a potential slip and fall hazard if water is spilled on the floor accidentally, electrical cords run across pathways, and/or if emergency equipment or supplies block passageways^[4].

Latex Allergy: Gloves must be worn frequently in the ED, because of occupational exposure to blood and OPIM, creating a potential for employees to develop latex allergy from wearing latex gloves. Healthcare workers exposed to hypoallergenic latex gloves are at risk for developing latex sensitisation^[13,14]. It is reaction to certain proteins when HCWs change the gloves (skin rash; flushing; itching; nasal, eye, or sinus symptoms; asthma & shock). 6% Health care workers reported symptoms consistent with latex allergy^[15].

Equipment & Electrical hazards: Injury may occur to employees from improper training or use of equipment (e.g., defibrillators). Electric shock may also occur as a result of lack of maintenance or misuse of equipment and/or its controls. Oxygen-enriched atmospheres and water may contribute to hazardous conditions. Employee exposure to electrical hazards including Electric shock, Electrocutions fires, and explosions. Damaged electrical cords can lead to possible shocks or electrocutions. A flexible electrical cord may be damaged by door or window edges, by staples and fastenings, by equipment rolling over it, or simply by aging^[4].

Ergonomic problems: The chief problem relating to ergonomics in nursing is the musculoskeletal work-related disorders (back injuries, neck, shoulder, arm, wrist and knee disorders). Low back pain is a persistent problem in the population of nurses^[16].

Workplace Violence: It is an issue in EDs because of the crowded and emotional situations that can occur with emergencies. ED patients could be involved with crimes, weapons, or violence from other people that could put the ED employee at an increased risk of workplace violence. Approximately 25 %

of Nurses had experience of physical violence and verbal abuse more than 20 times within 3 years. HCWs who ever experiencing physical violence, verbal abuse indicated fear of retaliation and lack of support from hospital administration and ED management as barriers to reporting workplace violence^[17]. In USA, 74.9 % Emergency physicians had Verbal threats at least once in the year. 28.1 % were victims of a physical assault, 11.7 % were confronted outside of the ED. Female emergency physicians were more likely to have experienced physical violence, but not other types of violence. 76 % emergency physicians were occasionally fearful of workplace violence, whereas 9.4 % were frequently fearful. Forty-two percent of emergency physicians sought various forms of protection as a result of the direct or perceived violence, including obtaining a gun (18 %), knife (20 %), concealed weapon license (13 %), mace (7 %), club (4 %), or a security escort (31%)^[18].

Factors responsible for violence in ED: Patients and their relatives were identified as the main perpetrators of this violence. The contributing factors to workplace violence identified are overcrowding, lack of resources, staff shortages, and the absence of effective antiviolence policie^[19].

Communicable Diseases: National Institute of Occupational Safety and Health (NIOSH) recognise that occupational exposures for tuberculosis, SARS, influenza are common among health care workers. Respiratory protection involves preventing exposure to communicable agents through proper donning, isolation. Staff may be treating an emergency and be unaware of other pre-existing infectious conditions^[20].

Workplace Stress: Occupational stress is a recognized problem in HCWs. Nurses were found to be one of the occupations that had a higher than expected incidence of stress related health disorders^[20]. Studies suggest work stress may increase a person's risk for cardiovascular disease, psychological disorders, workplace injury, and other health problems. Early warning signs may include headaches, sleep disturbances, difficulty concentrating, job dissatisfaction, and low morale. Emergency Department nurses are in a position that is expected to deal with additional stressors. These include^[21]

- Unexpected numbers of patients at any time,
- Unexpected rapid changes in patients' situations, and
- Response to distressing or traumatic incidents such as - sudden death, patient violence, inappropriate attendees, and physical or verbal abuse on a daily basis.

Emergency nurses often care for persons exposed to traumatic events. In the presence of empathetic caring, nurses exposed to such stressors over time can suffer from Secondary Traumatic Stress (STS) or Compassion Fatigue (CF). STS symptoms (intrusion, avoidance, and arousal) may lead to job dissatisfaction or burnout^[22].

Potential Hazard: All hospital employees, especially ED employees, are exposed to many stressors at work that can cause workplace stress, and burnout, due to factors such as shift work, long hours, fatigue, and intense emotional situations, (e.g., the suffering and death of patients)^[23]. Following coping strategies will be useful for nurses who working in Emergency depart-

ment:-

- a) Self - Controlling :- Exercising self-control is a cultural character trait common in nurses within Asia
- b) Positive Reappraisal:- It has coping strategy as a part it, and it has a religious dimension
- c) Accepting Responsibility.

Conclusion

Health-care workers (HCWs) need protection from these workplace hazards. Yet, because their job is to care for the sick and injured, HCWs are often viewed as “immune” to injury or illness. They are often expected to sacrifice their own well-being for the sake of their patients. Indeed health protecting health-care workers has the added benefit to contributing to quality patient care and health system strengthening. Some of the same measures to protect patients from infections, such as adequate staffing, protect health-care workers from injury. Occupational hazards among HCWs in ED can be prevented by simple measures like universal precautions, immunization, and special care for hazard exposed HCWs, Strategic management of conditions which promotes stressful situation and injuries in ED. The fact that needle stick injuries are more likely to occur in ED than other area of hospital.

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