Practices Regarding Hospital Waste Management at Public and Private Sector Hospitals of Lahore

Shahid Mahmood,[1] **Najam-ud-Din,**[2] **Jibran Mohsin,**[3] **Hassan Javed**[4]

Abstract

Background: Healthcare (Biomedical) waste is a term used for all waste arising from healthcare establishments. In most of healthcare centers of Pakistan, including Lahore, hospital wastes are simply mixed with the municipal waste in collecting bins at roadsides and disposed off similarly. Proper Management of biomedical waste, especially the hazardous one, being produced in hospital settings is important in terms of their ability to cause harm to the related persons and the environment as well.

Objective: To Observe and compare the practices regarding Hospital Waste management of the public sector hospital with private sector hospital.

Study Design: Descriptive, Cross sectional.

Place and Duration: Shalamar (Private) and The Children's (public) Hospitals, May – June 2010.

Methodology: Standardized checklist was used to assess the practices of nursing and sanitary staff.

Results: Practices regarding waste segregation were same at both hospitals. While practices regarding waste collection and transportation were better at The Children's Hospital.

C**onclusion:** Public sector hospital has, paradoxically, better practices regarding hospital waste management in comparison to private sector hospital.

Key words: Healthcare waste, segregation, collection, transportation.

Mahmood S.[1]
Professor Community Medicine, Services Institute of Medical Sciences, Lahore

Din N.U.[2]
Demonstrator Community Medicine, Services Institute of Medical Sciences, Lahore

Mohsin J.[3]
Medical Student, Services Institute of Medical Sciences, Lahore

Javed H.[4]
Medical Student, Services Institute of Medical Sciences, Lahore

Introduction

Healthcare waste (HCW) is a term used for all waste arising from healthcare establishments.[1] Between 75 – 90% of HCW is non-risk waste (paper, packaging, food waste etc), comparable to domestic waste. The remaining 10 – 25% (USA 15%, India 15 to 35%, and Pakistan 20%) of HCW is regarded as risk waste (infectious, pathological, sharps etc) and create a variety of health risk.[2-4] The institutions involved in generation of biomedical waste are public and private hospitals, nursing homes, dispensaries, clinics etc.[5]

In U.S.A. total Biomedical waste (BMW) generated is 3361100 tones / year (8 kg / bed / day). Out of this, 504000 tones is hazardous waste,[6] in Bangalore – India, 0.5 – 4 kg / bed / day in Govt. hospitals and 0.5–2.0 kg / bed / day in private hospitals.[7] In Pakistan 250,000 tones / year; (0.5 – 2.0 kg / bed / day)[6] and in Punjab it is 15 tones / day.[8]

In most of healthcare centers of Pakistan, including Lahore, hospital wastes are simply mixed with the municipal waste and disposed off similarly. This non-segregated collection and disposal of infectious / risk waste poses a serious threat to the exposed persons.

Main groups at risk are medical doctors, nurses, health – care auxiliaries, and hospital maintenance personnel, patients, visitors, workers etc.[2]

Pathogens in infectious waste causes serious infections e.g. HIV, HBV and HCV.[9] Poorly managed waste also produces Antibiotic – resistant microbes. Chemicals and pharmaceuticals are genotoxic, flammable, explosive and cause intoxication, and injuries, (burns). Radioactive waste causes headache, dizziness and serious congenital anomalies. General public is very sensitive to "visual impact" of healthcare waste particularly anatomical waste. Sharps cause cuts and punctures and wound infection. Chemical residues discharged to the sewage system affect the operation of biological sewage treatment plants and are toxic to natural ecosystems of recipient waters. Poor storage of healthcare waste causes several fatal vector – transmitted and zoonotic diseases.[2] Incinerators operating at sub-optimal conditions are an added environmental and health hazard.[10-12]

Globally, issue of appropriate waste management has been seriously considered. But, at present there is no available information that assesses the practice of handling the healthcare waste products of Hospitals of Pakistan (in general) and Lahore (in particular). As a result of this deficiency, this study was designed to collect data regarding practices of handling hospital wastes in public and private sector so that comparison can be made.

Materials and Methods

This descriptive cross sectional survey was conducted in one private and one public sector hospital. For this purpose, separate lists of each sector was made and out of it one private (Shalamar) and one public (The Children's) hospital were selected, who have their own incinerator. 12 wards (6 in each hospital) were randomly selected for observation. In each ward nursing as well as sanitary staff was observed, for their practices regarding waste segregation, collection and transportation of waste. Standardized checklist was used for this purpose.

Data was collected in May – June 2010. Computer software was used for tabulation and analysis of the data. Results are presented with frequency and percentage tables.

Results

Table 1: Practice of Waste Segregation at site of generation.

	Shalamar Hospital	The Children's Hospital
Segregation done at site of generation	6 (100%)	6 (100%)
Infectious waste placed in yellow plastic bags	6 (100%)	6 (100%)
Sharps placed in yellow boxes	6 (100%)	6 (100%)
Non risk waste placed in black bags	6 (100%)	6 (100%)

Table 2: Practice of Waste Collection from generation site.

	Shalamar Hospital	The Children's Hospital
Removal of yellow bags when 3/4th filled	2 (33.33%)	6 (100%)
Sealing of yellow bags on removal	2 (33.33%)	4 (66.67%)
Labeling of yellow bags on removal	0 (0%)	5 (83.33%)
Replacement of boxes for sharps when 3/4th filled	3 (50%)	4 (66.66%)
Utilization of Personal Protective Equipment (PPE)	0 (0%)	5 (83.33%)

Table 3: Practice of On – Site Waste transportation from generation site to disposal point.

	Shalamar Hospital	The Children's Hospital
Bags loaded on suitable trolley	4 (66.67%)	6 (100%)
Trolley easy to load	3 (50%)	6 (100%)
Waste temporarily left anywhere	4 (66.67%)	1 (16.67%)
Direct route followed	3 (50%)	5 (83.33%)

Discussion

Practices regarding waste segregation were quite good (100%) according to the standards, and were similar in both the hospitals (Table 1). Practices regarding waste collection were better in public sector hospital (66 – 100%) as compare to private hospital (0 – 50%). Most important observation was that, utilization of Personal Protective Equipment (PPE) by sanitary staff was much better (83%) in public hospital as compare to (0%) in private hospital, showing better supervisory structure and practices. It may be due to better training and creation of awareness in sanitary staff (Table 2). Similarly practices of transportation of waste to disposal point were better in public sector (The Children's) hospital in comparison to private sector hospital. Particularly practice of leaving the waste anywhere was only 16% in public hospital as compare to 66% in private hospital. This midway staging increases the risks to exposed people (Table 3).

Conclusion

Better practices observed at public sector hospital are most probably due to better government structure, practices and adequate funding. There should be special emphasis on the health education of personnel involved in waste handling. Proper training should be made mandatory under supervision of Health Care Waste Committee.

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