ORIGINAL ARTICLE

Reasons Responsible for Non Acquiescence to Excellent Hospital Waste Management Practices

ARSHAD WAHAB SHAH[1], ABDUL RAHMAN[2], RANA MUHAMMAD AKHTAR KHAN[3]

ABSTRACT

Aim: To identify reasons responsible for non acquiescence to excellent hospital waste management practices.
Study Design: Cross-Sectional (Descriptive).
Place and duration of study: Rural Health Centre, Manga Mandi; District Lahore, from January 15 to February 14, 2012.
Methods: This was a descriptive type of Cross Sectional Study conducted on 50 staff members of Rural Health Centre Manga Mandi of District Lahore. Non probability convenience sampling method was used due to small number of sampling frame.
Results: The results showed that Doctors (6.8%), Paramedical staff (78.6%), sanitary workers (6.6%) and management staff (8%) were the study participants. The existing scenario regarding waste segregation, storage and disposal was totally different. Although a little excellent practices such as use of gloves, masks, aprons, boots and separate containers during waste segregation and disposal were seen. Syringe cutters were observed in only wards. The waste from the laboratories and the X-ray department was being thrown in the drains without any prior treatment. There was no system of daily waste estimation from this health facility.
Conclusion: The waste management practices were neglected and were not in line with the standard protocols.
Key Words: Waste Practices, Health Risks, Rural Health Centre.

INTRODUCTION

In Pakistan it was shown that around 2Kg of waste/bed/day is produced out of which 0.1-0.5 kg can be categorized as risk waste. Daily about 4 to 2,000 Kg of waste is generated by various health outlets; of which 75% to 90% is non-risk produced by the health care premises, housekeeping, and administrative functions while only 10-25% is infectious and needs more careful disposal[1]. Health care workers have only a basic understanding of health care waste and do not perceive handling or disposal of medial waste as a hazardous work. Laboratory analysis shows existing contamination of infectious agents in the environment. Some staff members interviewed was suffering from various kinds of infectious diseases such as viral hepatitis B/ C, typhoid, skin disease/allergy, diarrhea, dysentery, tuberculosis, and malaria. The study indicates that there is a need to improve the handling and disposal methods of hospital waste in almost all the available medical facilities[2]. A study carried out in Thailand for future development. The important finding was the amount of medical waste was 0.41 kilogram per bed per day. Problems identified were inadequate knowledge in management, improper practices, and high incidence of sharp injury at work. Laboratory tests in dustmen showed evidence of pulmonary tuberculosis in 3.4%, parasites and intestinal pathogens in stools 5.1% and positive for HBsAg in 8.5%. Finally it was concluded that improper management of medical waste was present in all hospitals. Risks of exposure and incidence of infection related to the management were at concerned levels. Education and practice guidelines are needed[3]. Medical waste management is of great importance due to its infectious and hazardous nature that can cause undesirable effects on humans and the environment. A comprehensive inspection survey was conducted for 15 hospitals, 3 disposal companies and 200 patients. Field visits and a questionnaire survey method were implemented to collect information regarding different medical waste management aspects, including medical waste generation, segregation and collection, storage, training and education, transportation, disposal, and public awareness. The results indicated that the medical waste generation rate ranges from 0.5 to 0.8 kg/bed day with a weighted average of 0.68 kg/bed day. The segregated collection of various types of medical waste has been conducted in 73% of the

[1]Assistant Professor Community Medicine; [2]Associate Professor Community Medicine;
[3] Professor & Head Department of Community Medicine Avicenna Medical College Lahore.
Correspondence to Brig. Dr. Arshad Wahab Shah, Email: arshad_wahab@hotmail.com Cell: 0300-5048434

hospitals, but 20% of the hospitals still use unqualified staff for medical waste collection, and 93.3% of the hospitals have temporary storage areas. Additionally, 93.3% of the hospitals have provided training for staff; however, only 20% of the hospitals have ongoing training and education. It was found that the centralized disposal system has been constructed based on incineration technology, and the disposal cost of medical waste is about 580 US$/ton. The results also suggested that there is not sufficient public understanding of medical waste management, and 77% of respondents think medical waste management is an important factor in selecting hospital services[4].

A study done on 258 doctors (including consultants, registrars and residents), 159 nurses and 169 Para-medical staff. The awareness was significantly satisfactory among doctors and nurses whereas there is lack of knowledge and awareness among laboratory personnel and other members of the paramedical staff, which needs effective teaching and training to prevent adverse outcome on human health. It was conclude that the effective means of waste management involves effective knowledge of the medical and paramedical staff, which needs to educate them through proper educational porgrammes and provision of resources involving political intervention is vital for the better outcome in future[5]. Regarding practices related to waste management, sanitary staff was ignorant on all the count up. However, injury reporting was low across all the groups of health professionals. Finally it was concluded that the importance of training regarding waste management needs emphasis i.e., Lack of proper and complete knowledge about biomedical waste management impacts practices of appropriate waste disposal[6]. There was a significant association between knowledge and access to documents ($p<0.001$). Ease of access is therefore important in generating knowledge among health professionals about HCW management. Those with access to the documents reported good HCW management practices. Most respondents 115(90%) treated health care risk waste differently from health care general waste; 124(97%) reported readily available bins for different types of HCW; 123(96%) knew the various types of bins and used them appropriately; and 122 (95%) always used gloves when handling HCW. Most participants 106(82%) agreed that contact with infectious waste could lead to infectious diseases such as HIV/AIDS, hepatitis B (113, 88%) and hepatitis C (97, 76%). However, some were unsure about the risk of transmission of HIV/AIDS (6.5%), hepatitis B (6.5%) and hepatitis C (18.1%), while 16 (13%) disagreed about the risk of transmission of HIV/AIDS, hepatitis B (9.7%) and hepatitis C (13.1%) through unsafe contacts with infectious waste. Most (126, 98.5%) agreed that improper management of HCW could lead to transmission of infections among hospital workers and patients; however, 2(1.5%) did not agree. A significant statistical difference was found in different wards about perceptions of HCW collection ($p<0.01$). Nurses were more likely than doctors to know this information. Most reported that their ward had never gone without HCW bins including sharps containers[7].

A study the risks associated with healthcare waste and its management has gained attention across the world in various events, local and international forums and summits. However, the need for proper healthcare waste management has been gaining recognition slowly due to the substantial disease burdens associated with poor practices, including exposure to infectious agents and toxic substances. Despite the magnitude of the problem, practices, capacities and policies in many countries in dealing with healthcare waste disposal, especially developing nations, is inadequate and requires intensification. This paper looks upon aspects to drive improvements to the existing healthcare waste management situation. The paper places recommendations based on a 12 country study reflecting the current status[8]. In Pakistan a study revealed about Practitioners were interviewed about injection administration and disposal of waste due to injections and other sharp material. Twenty general practitioners out of 25 were interviewed. All claimed using disposable syringes only once. None of them was disposing off syringes in sharp containers in the clinic. Of 20, 12(60%) were throwing syringes at open places and 5(25%) in municipal waste bins. Improper disposal of sharp waste needs development of cost effective methods that are applicable at a small scale. Larger studies are required to quantify the gravity of the problem[9].

Study carried in Karachi to evaluate the current practices of segregation approaches, storage arrangements, collection and disposal systems in the teaching hospitals of Karachi. Out of eight hospitals visited 2(25%) were segregating sharps, pathological waste, chemical, infectious, pharmaceutical and pressurized containers at source. For handling potentially dangerous waste, two (25%) hospitals provided essential protective gears to its waste handlers. Only one (12.5%) hospital arranged training sessions for its waste handling staff regularly. Five (62.5%) hospitals had storage areas but mostly it was not protected from access of scavengers. Five (62.5%) hospitals disposed off their hazardous waste by burning in incinerators, two (25%) disposed off by municipal landfills and one (12.5%) was burning waste in open air without any specific treatment. No

record of waste was generally maintained. Only two (25%) hospitals had well documented guidelines for waste management and a proper waste management team. There should be proper training and management regarding awareness and practices of waste disposal. Research must be undertaken to seal existing gaps in the knowledge about hospital waste management[10]. Factors relating to acceptance of Hepatitis B Virus Vaccination by Nursing Students in a Tertiary Hospital, Pakistan relating to, the acceptance of hepatitis B virus (HBV) vaccination by nursing students in a tertiary hospital in Pakistan. In total, 210 nursing students of Year 2 to Year 4 were invited to participate in the study; of them, 196(93.3%) returned completed questionnaires. Overall, the prevalence of acceptance of HBV vaccination among them was 75%. Of these, 37.2% (73/196) were completely vaccinated, and 25% (49/196) had not been vaccinated at all. More than half (27/49, 55.1%) of the unvaccinated nursing students stated that they would accept vaccination if offered. Multiple logistic regression analysis indicated three variables significantly related to acceptance of HBV vaccination: history of accidental exposure to blood or blood products, acceptable knowledge about HBV infection, and adequate budget for HBV vaccination[11]. Waste segregation is a fundamental and integral part of health care waste management which is not being carried out in most of the hospitals in Pakistan resulting in disposal of waste in landfill sites or open dumps without any special precautions or safety measures. All health professionals are responsible for the segregation of the waste at its very initial stage and for this they must have updated knowledge about this. It is important to conduct a study in order to determine the factors that influence safe or unsafe practices. This information will be useful in policy strategy formation on hospital waste management.

MATERIAL AND METHODS

It was a cross sectional descriptive study design to assess the existing situation of waste management, the study was carried out at Rural Health Centre, Manga Mandi of district Lahore, a basic health care providing facility for preventive, curative and diagnostic services. The study population was administrative, medical, paramedical, sanitary and supporting staff. The participated health professionals were from i.e. indoor, outdoor, and emergency, laboratory, EPI center and minor operation theater. Non probability convenience sampling method was used due to small number of sampling frame. Inclusion and Exclusion criteria as all registered Doctors, Paramedical staff, sanitary works and Administrative authorities having experience more than one year were included in the present study. All absent staff, on leave, new inductions less than one year duration and those who are not directly concerned with hospital waste management i.e., Chowkidar, peons, clerks were not eligible for the study. Data Collection Tool as semi structured questionnaires was designed for the collection of data. Questionnaires were built in with questions according to the requirements of the study. Urdu translation of the questioners was printed for those who were unable to read English version. Pre testing of this questioner was done. Data mass was generated on Statistical Package for Social Sciences. Complete descriptive analysis was done. The frequencies of all variables were calculated using SPSS 18.00 version.

RESULTS

A total of 50 questionnaires were completed by the sample frame. The current study had targeted almost all the health professionals related to waste management. The results show that Doctors (6.8%), Paramedical staff (78.6%), sanitary workers (6.6%) and management staff (8%) were the study participants. The existing scenario regarding waste segregation, storage and disposal was totally different. Although a little excellent practices such as use of gloves, masks, aprons, boots and separate containers during waste segregation and disposal were seen. Syringe cutters were observed in only wards. The waste from the laboratories and the X-ray department was being thrown in the drains without any prior treatment. There is no system of daily waste estimation from this health facility.

DISCUSSION

The waste management practices were neglected and were not in line with the standard protocols. Overall management of the hospital waste was not satisfactory. The wards displayed improper implementation of rules and regulations of health care waste segregation and disposal. Emergency department had better implementation as compared to other wards i.e. combined female ward, family planning ward, minor Operation Theater and labor room. In all waste was segregated partially at source of generation. Minor Operation Theater and Family Planning section didn't have separate containers for risk and non risk waste. Color coding was fully implemented in emergency ward only. Syringe cutters were observed in only emergency room. There was no uniform schedule for collection of waste in all the departments of the hospital.

Emergency ward had a storage place outside the ward.

Similar results have been identified by some other published studies in Pakistan. We can see a similar observation has shown the picture of some other hospitals of Pakistan. In this study the current practices of the waste management were identified in eight hospitals of Karachi. Out of eight hospitals visited 2(25%) have shown satisfactory implementation of the practices i.e., segregating sharps, pathological waste, chemical, infectious, pharmaceutical and pressurized containers at source. For handling potentially dangerous waste, two (25%) hospitals provide essential protective gears to its waste handlers. Five (62.5%) hospitals had storage areas but mostly it was not protected from access of scavengers. Five (62.5%) hospitals disposed off their hazardous waste by burning in incinerators, two (25%) disposed of by municipal landfills and one (12.5%) was burning waste in open air without any specific treatment[7]. Form Pakistan we have limited results regarding the awareness of doctors and Paramedical staff. We can compare our results with some other countries i.e. in Bangladesh many doctors and nurses are not fully aware about what constitutes as medical waste. Health care workers (Doctors and Nurses) have only a basic understanding of health care and do not perceive handling or disposal of medical waste as a hazardous work[8]. A study in Thailand has also published similar problems of inadequate knowledge in management, improper practices, and high incidence of sharp injury at work[9].

CONCLUSION

The practices of all the necessary steps in waste management were unsatisfactory specifically the segregation of the waste. Level of vaccination against Hepatitis – B Vaccination was unsatisfactory in a categories the participants had not received any formal trainings on Harmful Waste Management. Rapid appraisal through an observatory check list showed poor segregation, collection and storage of hospital waste along with a lack of necessary equipment required for Hospital waste disposal.

RECOMMENDATIONS

- There should be a documented and approved waste management protocol and it should be fallowed strictly.
- Management should monitor and supervise the implementations of the proper steps of waste management and doctors should be targeted for improving knowledge by arranging different educational trainings regarding hospital waste management. Paramedical staff and sanitary workers have knowledge but implementation is limited which should be improved. Management should design a Policy and everyone should have easy access to it.
- There was no proper place for waste disposal. Hospital should allocate proper site for it and should update the incinerator according to recommended setting. Different treatment should be applied to disinfect the infectious waste.
- Hospital management should provide the complete vaccination against infectious diseases to all employees directly involved in managing hospital waste.
- Separate budget allocation is the responsibility of the management for hospital wastes management, so that smooth working of waste disposal can be carried out without any hindrance.
- Stake holders' interaction and cooperation is the key factor which can improve the scenario regarding hospital waste management at RHC Manga Mandi.

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