

Plan at Bahawal Victoria Hospital, Bahawalpur

Muhammad Safdar Baig¹, Muhammad Ashraf Arif², Riaz Ahmed Bhutto³ and Syed Muhammad Yasir⁴

ABSTRACT

Objective: To describe hospital waste management plan in our setting for primary to tertiary hospitals and to make it environmental friendly with respect staff safety.

Study Design: Observational / cross sectional study.

Place and Duration of Study: This study was carried out at Bahawal Victoria Hospital, Bahawalpur from May to August 2015.

Materials and Methods: This study carried out as an assignment for the course of Environmental and Occupational Health point of view. Data has been collected from the staff of the BV Hospital and the Quaid-e-Azam Medical College, Bahawalpur as our study subjects. The purpose of this paper is to outline the hospital waste management plan in our setting from primary to tertiary hospitals in a comprehensive way to put forward suggestions for further improvement.

Results: Among the hospital staff particularly doctors were not aware of any hospital waste management protocol/plan. Similarly nobody from the hospital staff recalled any training program or such activity to be performed in their respective wards or departments since ever. Just the concerned nursing staff had sort of interaction with the sanitary workers and the sweepers engage in their routine hospital cleaning process supervised by the sanitary inspectors. As such no health facilities had properly implemented any hospital waste management plan in accordance to expected standard and practices; just routine maintenance of the hospital cleanliness is being carried out and the wastes were collected and moved to the point of transportation or being transported direct to its disposal point.

Conclusion: There is need to develop Hospital Waste Management policy and plan for institutions along with its allocation of appropriate funds. Hosp Waste disposal standard operating procedures in a way that such model can be implemented anywhere by little modification as per need assessment basis in all of our healthcare settings.

Key Words: Hospital Waste Management, Plan, Protocol.

Citation of article: Baig MS, Arif MA, Bhutto RA, Yasir SM. Hospital Waste Management Plan at Bahawal Victoria Hospital, Bahawalpur. Med Forum 2016;27(5):44-47.

INTRODUCTION

The Hospital Waste is one of the major sources of cross infection in our hospital setting, as it is hazardous not only for the hospital staff but also for the patients and their attendants who come across it.¹ The reason behind this cross infection is the poor handling of the hospital waste in our country.

¹. Department of Oral & Dental Surgery / Anatomy², Quaid-e-Azam Medical College and Bahawal Victoria Hospital Bahawalpur.

³. Department of Community Medicine, Altibri Medical College, Isra University Karachi.

⁴. Sandeman Provincial Tertiary Care Hospital, Quetta.

Correspondence: Dr. Muhammad Safar Baig, Assistant Professor & Head of Department of Oral & Dental Surgery, Quaid-e-Azam Medical College and Bahawal Victoria Hospital Bahawalpur.

Contact No.: 0300-6821103

E-mail: safdarbeg@gmail.com

Received: February 13, 2016;

Accepted: March 25, 2016

It mostly consists of lethal contaminated highly infectious material collected from hospital wards and clinics, outdoors and operation theatre settings and usually includes the used syringes, empty bottles, cartages, drips, and blood, urine and intravenous bags almost all over the world.^{1,2} From the literature search the sharp objects included in the above mentioned hospital wastes are the main source of cross infections for the hospital workers and handlers of these waste as a source of nosocomial infection.^{2,3}

As per hospital waste management estimates from the scientific literature search from all over the world about one percent of the total hospital waste is infectious in nature while more than fifteen percent out of this is main source of cross infection from hospital settings.³

It is now well documented that the developed countries of the world are generating more quantity of the hospital wastes as compared to economically under developed and poor countries, according to the World Health Organization statistics the estimated waste generated from the economically developed country is about six kilograms while this figure is about three

kilograms from the under developed countries per person per year including South East Asian countries.^{3,4} According to WHO protocols the hospital waste is considered to be most hazardous substance which even need to be treated prior to its disposal through process of proper treatment protocols.⁴ If hospital waste is not treated properly it not only put the hospital staff concerned with patients treatment at risk for cross infection but also the house keeping staff, sweepers, the waste collectors and the general public as well.⁵ The hospital waste when disposed off as open dumping which contain human organ parts is most dangerous one which need to be handled carefully according to standard waste management protocols.⁶ If mixed with the other hospital waste, it will contaminate the other waste making it more at risk of cross infection for patients and general public as well.⁷

The results of a study from Nepal by Paudel et al showed that the hospital staff concerned with waste collection and its disposal are usually not aware of the hazardous effects of the hospital contaminated waste in our settings particularly in South East Asia.⁵ It was also noticed that their poor handling of the waste with respect to its disposal put them at more risk of acquiring hospital acquire cross infections.^{8,9}

By the year 2007, there were estimated more than 90,000 hospital bed occupancy in our country and the estimated waste generation per hospitalized bed ranged from 1.5 to 2 kilograms per day.¹⁰ The results of the hospital base studies from Pakistan has shown that neither the hospital staff nor the practicing physicians and surgeons do not follow any standard protocols for hospital waste proper disposal at the public and private sector. This non compliance practice to abide by the standard waste management protocols not only put them at risk of nosocomial infection but also put the complete hospital environment at hazard of cross infection at the same time.¹¹

It has been documented through many local studies from the main cities of our country and also pointed out by the independent media for the awareness of common people to educate them about the hazards of hospital waste from our healthcare settings, it is not only the source of hospital acquired infection but also a source of earning for scavengers through collection of these used disposable hospital wastes for recycling and when resold in the same local market to earn their daily livings.¹² There is no doubt about it the poor low paid hospital housekeeping staff has been involved in such activities but there is no check and balance in our setting to stop this ill legal practices from our hospitals due non compliance of the standard hospital waste management protocols.¹³ This is one of the important reason for the high rate of needle sharp instrument prick injury in our hospitals among the medical staff as compared to the paramedics.¹⁴

MATERIALS AND METHODS

Total 135 hospital staff were interview and included in this study from our institution three hospital settings at Bahwal Victoria Hospital and the Quaid-e-Azam Medical College, Bahawalpur no private sector hospitals and clinics were not interested to be part of this study as per their own free will. A hospital waste management protocol semi structured questionnaire was developed as part of data collection and a trained data collector medical doctor of the same hospital and institution carried out this whole process of data collection in about two week time. This questionnaire also consists of some observational part to record the on going process and the plan or protocol to be followed in the wards by the staff concerned for collection of hospital waste and its disposal and during the administration of the this data collection tool some issues raised by the respondents were also answered and the questionnaire was improved to record these important finding as our observations in our study. The interviewer visited the hospital wards, various surgical and medical out patients departments including the department of dentistry and our accident and emergency, medical collage departments like anatomy, pathology and other basic and clinical settings and it was good to know that some of our study subjects were already aware of the hospital waste management related protocols as part of Punjab Healthcare Commissions minimum standards in hospital settings. During our visit to hospital various departments and wards at the time of data collection, the process Of waste handling on site situation with respect to its collection, storage in different colour coding bags, then its transportation to the point of disposal were also notices and recorded very carefully.

RESULTS

As per our study results at our institution no protocol or hospital waste management plan was being followed, the routine hospital ward cleanliness was being done by the housekeeping staff under no direct supervision.

Table No.1: Segregation of Hospital and College side waste

Sr. #	Color scheme	Used for collection of waste material type
1.	Red Bags	Blood bags, tissue organ, swabs, drip sets syringes etc
2.	Yellow Bags	Sharpe objects like needles, blades, etc
3.	Black Bags	General hosp and lab wastes from college side

The overall incharge of this whole process was the hospital sanitary inspector who was going to monitor it from his office who himself was not aware of any standard protocol or any hospital waste management

plan as a written document everything was being carried out on verbal orders through senior ward boys as the supervisors. The hospital waste was being transported after its collection from the various wards, outdoors, departments etc and directly shifted to its disposal place for burial or dumping at specified filth

collection area by the hospital sweepers without any sorting process as the red, yellow and black bags; although in some department they have been provided. As yet no facility of incinerator has been functional at the institutional level, perhaps in the process of installation.

Table No. 2: No of interviews and data collected from hospital staff sanitary workers and housekeeping servants

Hospital/Unit Department	No. of Doctors	No. of staff Nurses	No. Sanitary workers	No. of Ward Servants	No. of Admin staff	Medical Superintendent	Total
Victoria Hospital	10	9	13	14	5	1	52
The Civil Hosp	12	6	10	12	4	1	44
Departments Medical College	13	7	9	9	-	-	38
Total	35	22	32	35	9	2	135

DISCUSSION

The hospital waste management situation described here has been ascertained from our field observations during data collection by visiting and carefully recording the ongoing situation by data collectors at our institution the Bahawal Victoria Hospital and Quaid-e-Azam Medical College, Bahawalpur in the light of the hospital waste management rules 2005 and the minimum healthcare delivery standards as laid down by the Punjab healthcare commission regarding disposal of hospital wastes.^{10, 13}

From the above mentioned standards, the only choice for hospital waste proper disposal is the use of incinerator in all the healthcare settings.¹⁴ It has also been pointed out and well documented the use of unregularized incinerator has also hazardous effect for the human health.¹⁵ It has been suggested that a common healthcare waste management disposal for the public and private sector as relatively low cost and affordable option is better choice in a vicinity in the form of incinerator.¹⁶

There is increased risk of mishandling of the hospital related infectious material containing bio-medical fluid and body organs, sharp needles, blood and urine bags etc which put the general public and the whole environment at risk of cross infection.¹⁷ Another where it cannot be afford is the proper designed landfill which is also universal acceptance if built on scientific grounds in our settings.¹⁸ There is need to take into account all the precautionary measures that such landfills should be built away from the main community settlement areas as it should not become source of ground water contamination.^{19, 20}

There is need to properly implement the laws and regulations in our healthcare delivery settings for the disposal of the hospital waste to avoid serious threats of cross infection control due to mishandling of such hazardous waste. There is much gap between theory and things in practice in the real life scenario in our

settings due to non compliance of the environmental protection rules and regulations.²¹

CONCLUSION

There is need to develop the Hospital Waste Management policy and plan for each institution along with its allocation of appropriate funds. There should be a Hospital Waste Management Committees by its designated head and members accordingly to develop SOPs separately for each dept and specialty and training of the concerned staff. There should have been proper execution of the Waste Management Plan as per formulated SOPs and monitoring and evaluation for continuous quality control and feedback within institution frame work.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

- Hossain MS, Santhanam A, Nik Norulaini NA, Omar AK. Clinical solid waste management practices and its impact on human health and environment-A review. *Waste Manag* 2011;31: 754-6.
- Akter N. Medical waste management: a review. Environmental Engineering Program, School of Environment, Resources and Development Asian Institute of Technology, Thailand. 2000.
- World Health Organization. Health-care waste management.2011; Available from: <http://www.who.int/mediacentre/factsheets/fs281/en/index.html>.
- Ross DE. Safeguarding public health, the core reason for solid waste management. *Waste Manag Res* 2011; 29:779-80.
- Paudel R, Pradhan B. Health care waste management practice in a hospital. *J Nepal Health Res Counc* 2010; 8:86-90.
- Bello AI, Asiedu EN, Adegoke BO, Quartey JN, Appiah-Kubi KO, Owusu-Ansah B. Nosocomial

- infections: knowledge and source of information among clinical health care students in Ghana. *Int J Gen Med* 2011; 4:571–4.
7. Kishi D, Videira RL. Description of nosocomial infection prevention practices by nesthesiologists in a university hospital. *Rev Bras Anesthesiol* 2011; 61:177–95.
 8. Wiener-Well Y, Galuty M, Rudensky B, Schlesinger Y, Attias D, Yinnon AM. Nursing and physician attire as possible source of nosocomial infections. *Am J Infect Control* 2011; 39:555–9.
 9. Mahmood SS, Malik R, Azim W. A study of waste generation, collection and disposal in a tertiary hospital in Pakistan. *Pakistan J Med Res* 2001; 40:13–7.
 10. Ministry of Environment. Hospital Waste Management Issues and Steps Taken by the Government of Pakistan. 2006 [20 Sep 2011]; Available http://www.env.go.jp/recycle/3r/en/asia/02_03-2/04
 11. Ikram A, Hussain Shah SI, Naseem S, Absar SF, Ullah S, Ambreen T, et al. Status of hospital infection control measures at seven major tertiary care hospitals of northern punjab. *J Coll Physicians Surg Pak* 2010; 20:266–70.
 12. Janjua NZ. Injection practices and sharp waste disposal by general practitioners of Murree, Pakistan. *J Pak Med Assoc* 2003;53:107–11.
 13. Khan MR, Fareedi F, Rashid B. Techno-economic disposal of hospital wastes in Pakistan. *Pak J Med Res* 2006; 45:41–5.
 14. Mujeeb SA, Adil MM, Altaf A, Hutin Y, Luby S. Recycling of injection equipment in Pakistan. *Infect Control Hosp Epidemiol* 2003; 24:145–6.
 15. Usmani RA, Rana MS, Wazir MS, Sarwer H, Fazli H, Pervaiz MA, et al. Assessment of hepatitis B vaccination status in doctors of services hospital, Lahore. *J Ayub Med Coll Abbottabad* 2010; 22:36–9.
 16. Janjua NZ, Khan MI, Mahmood B. Sharp injuries and their determinants among health care workers at first-level care facilities in Sindh Province, Pakistan. *Trop Med Int Health* 2010; 15:1244–51.
 17. Hoenich NA, Pearce C. Medical waste production and disposal arising from renal replacement therapy. *Adv Ren Replace Ther* 2002; 9:57–62.
 18. Wassermann D. A decade of change in clinical waste treatment and disposal in Scotland. *Health Estate* 1999; 53:6–12.
 19. Orloff K, Falk H. An international perspective on hazardous waste practices. *Int J Hyg Environ Health* 2003; 206:293–302.
 20. Saini S, Das BK, Kapil A, Nagarajan SS, Sarma RK. The study of bacterial flora of different types in hospital waste: evaluation of waste treatment at Aijms Hospital, New Delhi. *Southeast Asian J Trop Med Public Health* 2004; 35:986–9.
 21. Punjab Healthcare Commission MSDS Minimum Service Delivery Standards and Indicators for Hospitals 2012;205-6.