**Consensus Building on Applicability of an Appropriate Waste Disposal System within Health Care Institutions of Pokhara Sub Metropolitan City**

Puakural R, Bijukachhe B, Vaidya B, Singh L

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**Background**

Healthcare facilities have improved in Nepal over the last decade. Although the healthcare establishments provide healthcare services to the people, it generates solid waste, which is harmful to public health and environment due to its infectious and hazardous nature. Usually it consist sharps, human or animal tissues/body parts body fluids and other infectious materials. Out of the total healthcare waste only 20% is hazardous and rest of the 80% is ordinary that is similar to waste generated from households or offices. Most of the health care institutions in Nepal are not practicing the waste segregation, due to less awareness about the subject and lack of treatment options for different types of wastes. So hazardous wastes were being mixed with ordinary waste making total waste hazardous. This has created difficulty in management of the entire waste stream. This type of mismanagement of healthcare waste can effect environment and the socio-economical aspect of the community. This can spread infectious diseases like HIV/AIDS, Hepatitis B, Tuberculosis etc, and also can cause public and occupational health hazard.

**Methods**

Available national and international literatures on healthcare waste management have been studied in search of required information. For first field visit structured pre-questionnaires were prepared. For second field visit, different checklists and structured questionnaires were developed. These are two methods adopted for this study. First the list of health care institutions in Pokhara sub-metropolitan city was collected then a site-specific survey was conducted in the selected health care institutions. 4 government hospitals, 9 private, 2 teaching, and various polyclinics and clinics were identified. First site-specific survey was conducted only in eleven health care institutions (1 Government, 1 NGO, 1 INGO, 1 teaching, 1 community, 4 private and 2 clinics). The selection was conducted on the basis of location and capacity. The team also made a general observation of Landfill site and Wastewater treatment plant. Group discussions and key person interview with structured pre-questionnaires was conducted to gather the required information. The segregated wastes were weighed by using spring balance. From the collected data simple average and percentage have been calculated and analyzed. The necessary data were presented in tabular and diagrammatic form. Data gathered during first field visit were used as baseline information for second field visit. Photographs taken during the field visits were included in the report to show the current status of health care institutions in Pokhara Sub-Metropolitan City.

**Results**

Among the 5 health care institutions, proper waste segregation was found only in Abhiyan and Green Pasture Hospital. On the basis of analysis done in Pokhara Sub-Metropolitan City, composition of health care waste measured in health care institutions was found to be 2% sharps, 12% hazardous, and 86% non-hazardous. Waste collection system was quite satisfactory but the problem was lack of disinfection of collection container. Due to the ignorance of staff the wastes were mixed during collection even if it was segregated properly at the point of generation. The collected wastes were transported manually at all the health care institutions. Only Manipal hospital was using tractor to transport organic waste and ash from incinerator to site near Effluent Treatment Plant (ETP) for burial. Most of the health care institutions lacked effective central storage system for the healthcare waste. Some health care institutions had provision of short time storage and but mostly openly stored. Health care institutions were adopting both chemical and thermal treatment methods to treat waste. Incinerator, Autoclave, Liquid Sterilizer, Sterilizer, Microwave etc. were used as thermal treatment technology for disinfecting reusable instruments. The health care wastes were disposed either by the health care institutions themselves or by the municipality. Both of them don’t have safe disposal method. Occupational health safety was not given due attention by the health care institutions. Moreover the waste handlers themselves were unaware about their health. Though some health care institutions provided gloves, masks and aprons, waste handlers were not found properly used during their working hour.

**Conclusions**

Integrated waste management system and centralized waste management system were suggested for the overall healthcare waste management. As individual effort is not enough for sound management of health care workers, equal contribution from all the government, non-government and private organizations as well as media is very essential.

**Keywords:** health care institutions; health care waste; waste disposal system; waste management system.