

Unsafe Disposal of Medical Waste: a threat to the Community and Environment

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Healthcare waste is generated by facilities such as hospitals, medical research facilities and laboratories. It includes infectious waste, pathological waste, sharps, pharmaceutical waste, genotoxic waste, chemical waste, wastes with high contents of heavy metals and radioactive waste. Not all healthcare waste but, infectious waste and sharps constituting 10-25% of the healthcare waste are hazardous to health. However, this infectious waste if not disposed properly could convert rest of the normal waste as hazardous material¹.

Infectious healthcare waste can cause a variety of infections because they contain different pathological organisms. Some of the examples are: gastroenteric infections (salmonella), respiratory infections (mycobacterium tuberculosis), skin infections (streptococcus), acquired immunodeficiency syndrome, haemorrhagic fevers and viral hepatitis. There is special concern about being infected with human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV). These viruses are generally transmitted through injuries from needles and syringes contaminated by human blood or through uncovered wounds and ulcers on exposed parts of the body². After an accidental needlestick from an infected patient, the probability of infection for the recipient ranges from 5-30% in case of hepatitis B infection and 3% in case of hepatitis C infection. Risk of HIV infection runs around 0.3% following contaminated needlestick injuries³.

No data is available regarding the health care waste generated in the country. According to an estimate, in Karachi, out of 8000 tons of refuse generated every day, 0.5 percent is health care waste, generated by well over 400 hospitals, clinics and laboratories. According to the Environment Protection Agency (EPA) study on hospital waste, 20% of health care waste generated every day in the city is infectious waste⁴.

In Pakistan disposal of healthcare waste is not safe. It was observed that most of the healthcare waste generated by health facilities was not properly disposed off. It was observed that healthcare waste was either dumped at community waste sites kuchra kundis' or sold directly to the dealers of the junk - "kabaris". Scavengers driven by extreme poverty and ignorant of risks were, involved in sorting and handling the infected materials at community waste sites; picked up anything worth resale. Syringes, infusion and blood bags were their favorite items.

Scavenger boys and sweepers of healthcare facilities sell these goods to junk dealers. It was also found that there is potential market of healthcare waste in recycling business. Plastic ware industry is the biggest buyer of used syringes, infusion and blood bags. Any healthcare waste left by scavengers is either taken for final disposal by municipal authorities in open trucks or burned in a smoldering fire, polluting the environment. Even before this, dogs, cats and birds come in search of their food at community waste sites and further spread the infectious materials in the locality. It is irony that Karachi Municipal Corporation (KMC), which has a major incineration plant, is unable to run it to full capacity for want of waste supply from hospitals.

Unsafe collection and throwing health care medical waste at community waste site is a threat to the healthcare workers, community and the environment. Any person exposed to this kind of

waste, can acquire infections. Housekeeping staffs (sweepers) of healthcare establishments, medical doctors, nurses, hospital maintenance personnel, patients and visitors of healthcare centers are at risk of acquiring infections through this waste. Recycling business of healthcare waste further aggravates the health hazards of medical waste by extending and expanding the number of population exposed to this waste in the country. Scavenger boys, junk dealers, persons who are involved in the processing of healthcare waste and others who could become victims of used infected items, as people injected with used needles, are also at risk of acquiring infections. Innocent children ignorant of the consequences consider used syringes and infusion sets as fun objects and start playing with them Barefooted passersby frequently get injured by needles and sharp objects while passing through these areas. Recently authors of this editorial conducted a study in Karachi to determine the infection control practices of laboratory personnel and followed the course of disposal of used syringes. On an average the scavenger boys reported 3-5 needle stick injuries in a day during the process of collection and sale of this waste^{5,6} Similarly junk dealers also experience needle stick injuries quite frequently Collection of health care waste, particularly syringes and needles not only increase the risk of, injuries and consequently infections to all those who collect, sale and process these waste, but also provide unscrupulous opportunities to buy. these material from the junk dealers and bring them, back into the market after washing and repackaging. Thus, further extending the scope of spreading the diseases in⁷ the population.

Unsafe disposal of the hospital waste may be one of the reasons that we have high prevalence of hepatitis B and C infection in the country, particularly among health care workers. A study conducted in Karachi among health care workers reported high prevalence of hepatitis B infection, reaching 20% among sweepers of a medical center⁷.

This is an alarming situation and needs immediate action on number of fronts. While some of the larger hospitals do have waste disposal facilities, every hospital and clinic cannot afford incinerators. The government must set up centralized disposal points for hospital waste in major towns. In Karachi, the KMC provides a disposal service that collects and incinerates waste from hospitals for a fee. Despite this, most hospitals prefer to dump their waste in the open. This practice is an immoral and highly hazardous practice. Governmental and non governmental organizations should also launch campaigns to raise awareness about hazards of such waste among all the high risk groups. Most important of all, the authorities must crack down on the trade in recycled syringes and impose stiff penalties on those who profit from these deadly practices.

The World Health Organization recommends a national law on healthcare waste management which should stand alone or may be part of more comprehensive legislation³. Implementation of such a law for safe healthcare waste disposal in the country is a need of time. It will establish legal control and will also allow the responsible agency, particularly the Ministry of Health to apply pressure for its implementation.

There is big demand of healthcare waste containing plastic materials in the plastic ware industry. It is providing employment opportunities to good number of people in the country. There is need to identify ways and means of safely disposing the healthcare waste without harming the interest of low income self employed population and plastic ware industry.

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