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SUSTAINABLE ENVIRONMENTAL SANITATION AND WATER SERVICES

Management of Hospital Wastes

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Introduction :

All types of health-care facilities like hospitals, nursing homes, clinical and pathological laboratories, medical research centres and veterinary hospitals generate hospital or biomedical waste. Some of these wastes are potentially hazardous to human beings, animals and the environment. The rate of generation of biomedical waste in Indian hospitals is approximately 1.0-2.5 Kg per bed per day.

The Union Ministry of Environment and Forest, Government of India has notified the Biomedical waste (management & handling) Rules, 1998 under the provision of Environment Protection Act, 1986. Under these rules, all health-care facilities will have to make the necessary arrangement to ensure that the hospital waste is properly handled and managed without adverse effects to human beings and the environment.

Biomedical waste refers to any waste that includes anatomical waste, pathological waste, infectious waste, hazardous waste and other waste generated in hospitals, nursing homes, pathological laboratories and other health care facilities (Banerjee & Bagchi, 1999). A substantial part of the biomedical waste is potentially hazardous due to its infectious nature (USEPA, 1978, 1986). Such hazardous bio-medical wastes include surgical and pathological waste, disposable syringes, injection needles,

microbiological wastes, discarded chemicals and drugs, waste from dialysis units (Nanda & Tiwari, 2000).

Present Survey :

For proper collection, handling, transport and safe disposal of biomedical waste it is necessary to find out the total quantity of biomedical waste generated by a particular hospital on a daily basis and to determine its physico-chemical and microbiological characteristics. In the present paper we report the preliminary survey of the biomedical waste generated on a daily basis in the District Headquarters Hospital, Keonjhar (Orissa), which is a medium Government Hospital with 185 beds and 43 doctors. This survey was conducted during first week of June, 2001. For the present survey the total waste generated in eight medical wards of the District Headquarters Hospital, Keonjhar (DHHK) was collected and manually sorted out into various physical components on three consecutive days. These components were weighted individually on each day. Our results for physical composition of biomedical waste generated in these eight wards on a daily basis (rounded to nearest half Kg) are presented in Table - 01. The largest amount of waste was generated in the male medicine ward and male surgery ward (21.0 Kg / day in each case) on the other hand the smallest amount of

TABLE - 01

Average physical composition of the biomedical waste from eight medical wards of the District Headquarters Hospital (Keonjhar).

Medical Ward / Unit	Daily waste generation (Kg.)					Total Waste
	Paper	Glass	Cotton	Plastics	Other Waste	
Medicine (Male)	2.0	7.0	1.0	6.0	5.0	21.0
Surgery (Male)	3.0	5.0	1.5	1.5	10.0	21.0
Orthopaedics (Male)	1.0	2.0	3.0	1.5	5.0	12.5
Orthopaedics	1.0	3.0	1.5	2.0	3.0	10.5
Obstretics Gynaecology	1.0	8.0	3.0	1.0	7.0	20.0
Paediatrics	0.5	7.0	1.5	3.0	0.5	12.0
T. B. and Infections	1.0	3.0	1.0	2.0	3.0	10.5
Minor Operation theatre	0.0	3.0	1.0	1.0	0.0	5.0
Total Waste	9.5	38.0	13.5	18.5	33.5	113.0
Percentage	8.4	33.6	11.9	16.4	29.7	100.0

waste was generated in minor operation theatre (5.0 Kg/day). The total amount of biomedical waste in these 8 wards of DHHK turns to be 113.0 Kg / day on the average.

The physical composition of the biomedical waste shows that glass forms the largest components (33.6%) of the waste generated in these wards and paper and card-board constitute the smallest component (8.4%) of the waste.

Disposal of the Waste :

At DHHK, medical wards and other units are swept twice daily by the sweepers. The waste thus collected is separated and kept in four different coloured drums.

01. Black Container - Non-infectious and non-hazardous wastes, such as paper, card-board, glass etc.
02. Yellow Container : Used for human body parts, placenta, foetus etc.
03. Red Container : Infectious wastes, such as blood stained cotton, bandages, needles, blades etc.
04. Blue Container : This is for storage of plastics.

These wastes are collected manually by sweepers and carried to the waste disposal pits in trollys. The first pit is used for the burial of body parts and other organic wastes, while the second pit is used for burning of combustible biomedical waste.

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