Guidelines for Infectious Medical wastes
"Waste Management Plan"
at Hospitals, Clinics, Laboratories etc.,
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ACTION REMARKS

Name of Hospital:

Drafting of a "Waste Management Plan" for Infectious Medical Wastes & Hazardous Wastes for Hospitals, Clinics, Laboratories, Research Centres, and other Biological Waste generators.

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Drafting of a "Waste Management Plan" for Infectious Medical Wastes & Hazardous Wastes for Hospitals, Clinics, Laboratories, Research Centres, and other Biological Waste generators.

1 Approach

1.0 Responsibility of making of "Waste Management Plan" rests with the authorities of Institutes generating Infectious and Hazardous waste. In time to come this will become mandatory and complimentary for Institutions seeking ISO 9000 and ISO 14000 recognition.

1.1 The "Waste Management Plan" has to be evolved by the Department Teams and Management Teams involving the minor and major role players in handling of institutional wastes. This evolution will be a continuous one, with periodical assessment.

1.2 The prime aim of the "Waste Management Plan" is to maintain General Hygienic and Sanitary conditions at highest level and contain spread of infectious diseases, within the hospital and outside of the hospital.

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1.3 Waste Management at Hospitals and Institutes is still in an evolution stage the world over, with continued studies on concerns expressed by public resulting in periodical guidelines and regulations being issued by Environmental Protection Authorities, for Safe and Economical Treatment and Disposal of Waste. Considering this, there will be constant changes in Guidelines and Laws from time to time, to which the institutional authorities should respond to.

1.4 It will not be possible for all medical establishments everywhere in the world to achieve the highest possible standards in a short time. In many ways it is better to adopt the '**Incremental approach**', which states that any improvement is better than none.

1.5 Segregation of waste should be given prime importance as treatment of Regulated waste can be Ten to over Twenty times more expensive than the treatment and disposal of unregulated wastes. The objective should be that the Regulated waste is kept to its minimum by proper segregation, and periodic monitoring.

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1.6 Of the total Wastes generated, around 10% are infectious wastes and 5% are hazardous wastes.

1.7 Best available techniques, which are less expensive, shall be selected, as per institutes' requirements. It is best to employ one technique as opposed to multiple techniques for treatment and disposal of waste for facilities generating limited quantity of waste and adopting on-site treatment.

1.8 Broad aspects of "Waste Management Plan" are given in the paragraphs to follow. They cover Waste Segregation; Waste Packaging; Handling and Transport; Waste Classification & Colour Codes; Transport and Handling; Storage; Waste Tracking; Waste Treatment and Disposal; Waste Audits. Each component of this broad aspect shall be developed into a written document as Best Practices to be followed for Infection Control.

1.9 Infection control committee shall be formed at each establishment.

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2.0 Waste Segregation

2.1 Infectious Waste to be Separated from General and Other waste at the point of Generation.

2.2 Departments generating waste to assess the hazards of Waste.

2.3 Sharps to be segregated from other Medical waste in Special containers.

2.4 Sharps with Fluids to be segregated from other Medical waste in Special containers.

2.5 Clipping of Needles is not recommended.

2.6 Fluids greater than 20 ml to be segregated from other medical waste.

2.7 Sharps, Sharps with Fluids and Fluids must meet stringent packing requirement.

2.8 All syringes, needles, cartridges, broken glass items and other sharp instruments must be discarded intact and placed immediately by the user after use in into a suitable approved sharp container.

2.9 When regulated waste can not be segregated from other waste this waste should be packed

and marked to the applicable packing requirement

2.10 If "Untreated" regulated medical waste is mixed and co-packaged with "Treated" medical waste, the package and Label must be identified as "Untreated Medical Waste".

2.11 Infectious waste should be discarded directly into containers or Plastic bags, which are clearly identifiable and distinguishable from general waste stream.

2.12 For large quantities of liquid waste containment tanks may be used.

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3.0 Waste Packaging

3.1 Infectious waste should be packaged in order to protect waste handlers and the public from possible injury, and disease that may result from exposure to the waste.

3.2 Infectious waste should be contained i.e. packaged from point of origin up to the point of final disposal.

3.3 Integrity of packing should be preserved through handling, storage, Transportation and Treatment.

3.4 Containers should be marked with universal biological hazard symbol.

3.5 Solid or semisolid waste such as Pathological waste, animal carcasses and laboratory waste may be placed in plastic bags.

3.6 Sharps may be placed directly into impervious, Rigid, Transparent and Puncture resistant containers.

3.7 Containers must be: Rigid- Leak Resistant- Impervious to Moisture- Sufficient strength to prevent Tearing or Bursting- Sealed to prevent leakage during transportation.

3.8 If the Outside of the container is contaminated, it should be placed in another container.

3.9 For the waste to be moved within facility for treatment or Storage, additional packaging should be used: Single bag plus Container or Double bagging.

3.10 Appropriate packing Factors are: Waste Type; Handling and transport of packaged waste (before treatment); Treatment Technique; Special consideration of plastic bags; Packing identification.

3.11 Containers or combination of containers shall be such that they are: Rigid, Leak-resistant, Impervious to moisture, Strong enough to prevent tearing or Bursting under normal handling and sealed securely.

3.12 Reusable rigid containers shall have smooth rounded corners for easy cleaning and reliable disinfection.

3.13 Liquid Infectious waste should be placed in capped or tightly stoppered bottles or flask, Resistant to breaking. For large quantities of liquid waste containment tanks may be used.

3.14 Labelling of Infectious waste in appropriate package shall contain information on: a)

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Place of generation i.e. Ward No. / bed no., Department, etc.; b) Date; c) Time of dispatch; d) Signature of the department person responsible for waste.

3.15

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4.0 Waste Classification.

4.1 Waste Classification and Packaging colour codes shall be established. This shall be common with the codes accepted at National, State and City Corporation level.

4.2 Waste classification shall include:

-[A] General Non-hazardous waste.

-[B] Sharps (whether infected or not)

-[C] Infected waste not containing Sharps.

-[D] Chemicals and Pharmaceuticals other than Cytotoxic drugs.

-[E] Other hazardous waste of which each will require special handling and disposal channel. It includes radioactive wastes, Cytotoxic drugs, and High pressure containers.

4.3 Colour code for Waste Package identification to be considered, after consulting the Local and National authorities, could be from the recommended guidelines of WHO and the UK the HSE guidance note:

[A] BLACK: for General Non-hazardous waste.

[B] YELLOW: For Infectious waste to be sent for disposal by Incineration / land filling. Yellow marking shall also be done on Rigid Sharp containers.

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[C] LIGHT BLUE: For Potentially Infectious waste sent for Treatment such as Autoclaving, prior to being sent for disposal.

[D] RED: For Hazardous waste which includes Radioactive wastes and Cytotoxic drugs.

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5.0 Waste Handling and Transport.

5.1 A High Standard of Housekeeping should be maintained in all areas with particular attention being paid to those parts of the plant where Process and waste materials are loaded or stored. Such areas should be constructed with appropriate falls to an adequate drainage system.

5.2 All Storage areas Containers, Loaders, Conveyors etc. should be designed to facilitate effective disinfection.

5.3 Once a Reusable container has been cleaned and disinfected, it can be used only for waste.

5.4 Do not transport Infectious waste bags in Chutes or Dumbwaiter.

5.5 Mechanical device should not be used for Transport or loading of Plastic bags.

5.6 Carts should be suitable for transporting. They should be stable and not be allowed to be tilted over so as to spill the Waste bags. Should be covered. No compacting of waste. Carts should be disinfected. Carts should be used for other purpose prior to disinfection.

5.7 If it is necessary to Transport Hazardous / Infected waste out of the hospital, they

should be transported in special trucks/ vehicles, and never mixed with general or domestic waste.

5.8 Trolleys and carts used for the movement within premises of clinical waste should be designed and constructed so that the surfaces of the conveyances are smooth and impermeable, they do not offer harbourage to insects, can easily be cleansed and drained and will allow the waste to be handled without difficulty. Steam cleaning is preferable, but disinfection is an acceptable alternative for cleaning at the end of each working day.

5.9 Once the waste has been segregated in special containers required by the segregation code, appropriately labelled, they must be removed at regular intervals and transported through the hospital to a place of storage, prior to being taken to treatment facility.

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6 Storage

6.1 Waste awaiting Treatment (Incineration, Autoclave) should be held in a service covered storage facility designed and constructed so as to contain spillage.

6.2 Criteria for Storing Infectious Waste: Integrity of packaging; Storage Temperature; Duration of Storage; Location and design of storage area.

6.3 Storage space should be of adequate size related to the frequency of collection.

6.4 Where Waste is to be stored e.g. for more than 48 hours, refrigerated storage should be provided. Four days at maximum of 32 °F; One day at 64 °F to 77 °F

6.5 Adequate cleaning equipment should be provided and maintained, such as Vacuum Cleaner, to clean promptly any spilled ash. Any such vacuum cleaner should be fitted with an absolute filter. The dry sweeping of spillage is not acceptable.

6.6 Storage area should be kept free from Rodents and Vermin.

6.7 Floor shall be of impervious hard setting provided with wash down facility.

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6.8 Storage area should have limited access that restricts entry of unauthorised person.

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