

An appraisal of biomedical waste management in India

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Introduction

The growth of hospitals and clinics are undoubtedly a sign of growth of better health care facilities, however, this also a matter of concern for safe disposal of biomedical waste.² The Government of India has notified Biomedical Waste (Management and handling) Rules, 1998 under the Environment (Protection) Act, 1986³ and is applicable to all persons who generate, collect, receive, store, transport, treat, dispose, or handle biomedical waste in any form.⁴ It is estimated that the hospitals in India, generates around 1 – 2 kg per bed per day of biomedical waste in a hospital and around 600 grams per day in a general practitioners clinic.⁵

Biomedical – Meaning

The Biomedical Waste (Management and handling) Rules, 1998 defines it as,⁶

“Any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule I”

The Schedule 1 of the The Biomedical Waste (Management and handling) Rules, 1998 provides different waste categories like human anatomical waste, animal waste, microbiological and biotechnology waste, waste sharps, discarded medicine etc.⁷

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² Rule 3 (5) of the Bio-Medical Waste (Management and Handling) Rules, 1998

³ In exercise of the powers conferred by Sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986)

⁴ Rule 1 , Application, of the Bio-Medical Waste (Management and Handling) Rules, 1998

⁵ Indian Society of Hospital Waste Management, Frequently asked Questions Biomedical Waste Management, <http://www.medwasteind.org/random.asp>

Duty of Occupier

It shall be the duty of every occupier⁸ of an institution to handle biomedical waste without adverse effect on human health and the environment. An occupier is a person who has control over the institution and includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory.

The Rule 5⁹ of the Biomedical Waste (Management and Handling) Rules, 1998 provides that all bio-medical waste shall be treated and disposed in accordance with Schedule 1¹⁰ and according to standard prescribed in Schedule V.¹¹

Segregation, packaging, transportation and storage

The task of segregation, packaging, transportation and storage are important steps for safe and proper disposal. The rules provide that it shall not be mixed with other wastes¹² and shall be segregated¹³ and labeled¹⁴ into containers or bags at the point of generation.¹⁵ The transportation of bio-medical waste to the waste treatment facility shall be done only through vehicle authorized for this purpose by the competent authority¹⁶ and untreated waste shall not be kept beyond a period of 48 hours.¹⁷

⁷ Sujata Pawar, A review of biomedical waste (management and handling) rules, 1998, LW (2015) June 5, <http://lex-warrior.in/2015/06/biomedical-waste-management-and-handling-rules/>

⁸ Rule 3,(8), Occupier" in relation to any institution generating bio-medical waste, which includes a hospital, nursing home, clinic dispensary, veterinary institution, animal house, pathological laboratory, blood bank by whatever name called, means a person who has control over that institution and/or its premises.

⁹ Treatment and disposal

¹⁰ It provides waste categories of biomedical waste with treatment and disposal options

¹¹ It provides standard for treatment and disposal of biomedical waste

¹² Rule 6 (1) of the Bio-Medical Waste (Management and Handling) Rules, 1998

¹³ In accordance with Schedule II

¹⁴ In according to Schedule III

¹⁵ *Ibid* at 12

¹⁶ Rule 6 (4) of the Bio-Medical Waste (Management and Handling) Rules, 1998

Biomedical waste facility

A biomedical waste facility¹⁸ generally known as the common waste treatment facility is an important provision to tackle the problem of biomedical transportation and disposal. The Biomedical Waste (Management and Handling) Rules, 1998 requires every occupier to set up requisite biomedical waste treatment facilities like incinerators, autoclave, microwave system for the treatment of waste, or should ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.¹⁹

The installation of individual treatment facilities by every health care unit requires comparatively high capital investment and thus is not a feasible option. In addition, it requires separate human power and infrastructure for proper operation and maintenance of treatment systems. The concept of Common Biomedical Waste Treatment Facility not only addresses such problems but also prevents multiplication of treatment facilities in a city, which itself can be a source of hazard and infection if not maintained well.²⁰ The Central Pollution Control Board²¹ has brought out Guidelines²² for setting up of biomedical waste treatment facilities.²³ The guidelines provide a comprehensive rule on location, land requirement, coverage area and treatment equipment for the establishment of Common Biomedical Waste Treatment Facility.

¹⁷ Rule 6 (5) of the Bio-Medical Waste (Management and Handling) Rules, 1998

¹⁸ Rule 3, (9), means a person who owns or controls or operates a facility for the collection, reception, storage, transport, treatment, disposal or any other form of handling of bio-medical waste.

¹⁹ Rule 5 (2) of the Bio-Medical Waste (Management and Handling) Rules, 1998, ... Every occupier, where required, shall set up in accordance with the time-schedule in Schedule VI, requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or, ensure requisite treatment of waste at a common waste treatment facility or any other waste treatment facility.

²⁰ http://www.bmwmindia.org/index_CBWTF.html

²¹ The Central Pollution Control Board (CPCB), statutory organisation, constituted under the Water (Prevention and Control of Pollution) Act, 1974. It is also entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

²² http://www.cpcb.nic.in/wast/bioimcdicalwast/Rev_Draft_Gdlines_CBWTFs_26022014.pdf

²³ Sujata Pawar, "Implementation Of The Biomedical Waste (Management And Handling) Rules 1998 by Hospitals In Satara City" Minor Research Project, UGC, 2015

Conclusion

According to the World health organization, 20% the total amount of waste generated from health care activities may be infectious, toxic or radioactive.²⁴ Health care waste contains potentially harmful microorganisms which can cause infectious disease to patients, health care workers and to the general public.

The need for proper biomedical waste management has gained importance with the growth private health care sector in India in recent years. The technology is playing a major role in bringing modern facilities in the healthcare system, whether its better treatment facility, patient monitoring devices or tele-medicine to provide a low cost diagnosis to remote patients, etc. The concepts of medical tourism, is gaining importance, where hospitals of a specialized nature replacing small health care establishment. In this scenario the Government should amend and adopt biomedical waste rules with strict punitive provisions for safe disposal of biomedical waste with an appropriate monitoring system to tackle the concern of biomedical waste management in India.

²⁴ <http://www.who.int/mediacentre/factsheets/fs253/en/>