Tackling a Pandemic of Biomedical Waste

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HUMANS are today producing a lot of waste that is not only hazardous for them but also for the earth. In the year 2020, the world dumped 53.6 million tonnes of e-waste only out of which 17.4% could be recycled. India ranked third in the production of e-waste after China and the USA. The global medical waste management market is expected to reach up to 16.62 billion dollars in 2023.

Disposal of waste coming from hospitals and healthcare facilities became a problem especially during the COVID-19 pandemic. The COVID-19 treating hospitals, quarantine centres, healthcare facilities and self/home quarantine are still producing a huge amount of bio-medical waste that must be treated carefully and responsibly. Proper waste treatment is necessary due to the hazards of such waste to the environment, earth, ecology and humanity.

Internationally, the concerns over bio-medical waste were outlined during a meeting convened by the World Health Organization (WHO) at the regional office of Bergen, Norway in the year 1983. At that time the problem was mainly related to the beach wash-ups.

Later, in the year 1988, the US Environment Protection Agency (USEPA) insisted that the US Congress formulate a Medical Waste Tracking Act. This was due to a severe horrific accident in which a 30-mile garbage slick composed of a major chunk of medical waste emerged on New Jersey and New York beaches. Upon investigation, it was found that the bio-medical waste was intentionally dumped.

The Medical Waste Tracking Act-1988 defined medical or biomedical waste and suggested building a tracking system and regulation of biomedical waste, maintaining waste disposal records and prescribing penalties for disobeying the law. This law was the first comprehensive law regarding biomedical waste. Later, WHO took major steps regarding the classification of medical waste into different types including infectious, sharps, pathological, pharmaceuticals, chemicals, radioactive, heavy metal substances, high pressurized containers, etc.

Meanwhile, biomedical waste became so huge that countries tried to dump their biomedical waste into the territories of other countries. In the year 1989, the Basel Convention was adopted by the Conference of Plenipotentiaries in Basel, Switzerland. It was in response to the raising public voices following the discovery of deposits of toxic wastes in developing countries like Africa. This was the time when numerous industries were searching for cheap disposal options of hazardous bio-medical wastes and the public was gaining awareness about biomedical waste disposal.

Large amounts of hazardous biowaste were dumped in eastern Europe and several developing countries where environmental awareness was low. The dissent of people led to NIMBY (Not In My Backyard) syndrome. The Basel Convention focuses on controlling the transboundary movements of hazardous waste and its disposal. The Basel Convention was negotiated in the late 1980s but entered

into force in 1992. Among the principal aims of Basel Convention are:

- The reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal;
- The restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- A regulatory system applying to cases where transboundary movements are permissible.

Since India is one of the founder members of the United Nations, India has also signed the Basel Convention and is bound by the terms of this treaty. According to Article 21 of the Constitution of India, the right to have a clean environment is a basic human right. The Directive Principles of State Policy of India, which are the fundamental principles in governance under its article 48A, also state that the state shall endeavour to protect and improve the environment and to safeguard the natural resources of the country.

Waste management is realised as one of the very important tools to protect the environment by its diverse effects and functionalities. Article 47 of the Indian Constitution forms a part of the Directive principle of state policy (part IV of the Constitution of India) thereby making it a primary duty of the state to ensure that public health is being taken care of and to take proper measures in protecting the same and to formulate its policies keeping in consideration its duties as laid down by the constitution. Articles 47 and 48A directly talk about public health which is important in the context of hazardous bio-medical waste as it may be dangerous to public health.

The Ministry of Environment and Forest, Government of India, issued a notification on Bio-Medical Waste on 27 July 1998. In this notification, the government issued the rules for the management and handling of bio-medical waste – it put mandatory conditions on health care institutions to follow certain rules. There have been several modifications in the rules keeping in mind the hazards of bio-medical waste. This notification came into power by sections 6, 8 and 25 of the Environment Protection Act-1986.

In 2016, there were several modifications in the rules:

- The rules have now expanded to include biomedical waste from vaccination sites, blood donation and surgical camps or any other healthcare activity.
- Phase-out the use of chlorinated plastic bags, gloves and blood bags within two years.
- Pre-treatment of the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilization on-site in the manner as prescribed by WHO or NACO.
- Provide training to all its health care workers and immunize all health workers regularly.
- Establishing a bar code system for bags or containers containing biomedical waste for disposal.
- Report major accidents.

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- Existing incinerators to achieve the standards for retention time in secondary chamber and Dioxin and Furans within two years.
- Bio-medical waste has been classified in 4 categories instead of 10 to improve the segregation of waste at source.
- Procedure to get authorisation simplified. Automatic authorisation for bedded hospitals has been announced. The validity of authorisation synchronised with the validity of consent orders for bedded HCFs. One time authorisation for Non-bedded HCFs.
- The new rules prescribe more stringent standards for incinerator to reduce the emission of pollutants in the environment.
- Inclusion of emission limits for dioxin and furans.
- State government to provide land for setting up common bio-medical waste treatment and disposal facility.
- No occupier shall establish an on-site treatment and disposal facility, if a service of common bio-medical waste treatment facility is available at a distance of seventy-five kilometers.
- Operator of a common bio-medical waste treatment and disposal facility to ensure the timely collection of bio-medical waste from the HCFs and assist the HCFs in the conduct of training.

In India, Central and several State Pollution Control Boards are also in existence and regulating hazardous bio-waste disposal. For proper disposal of the bio-medical waste generated during the COVID-19 pandemic from hospitals, quarantine facilities and other places, Central Pollution Control Board (CPCB) developed a mobile app (COVID19BWM) for monitoring the biomedical waste. The Supreme Court has made it mandatory to use this mobile app for all the pollution control boards and related institutions to track the biomedical waste daily for ensuring the collection, transportation and submission of the waste to registered Common Biomedical Waste Management Facilities.

It must also be a concern for the common public to maintain cleanliness and help the government in bio-waste disposal processes. According to Article 51A(g) of the Indian Constitution, it is the fundamental duty of an Indian citizen to protect and improve the natural environment. This article was not originally part of the Constitution and it was added through the 42nd amendment act of 1976.

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