

## Safe Management of Health-Care Wastes: An Uncared Area in Health System

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### Abstract

Inadequate and inappropriate handling of health-care waste may have serious public health consequences and a significant impact on the environment. Sound management of health-care waste is thus a crucial component of environmental health protection. Establishment of a national policy and a legal framework, training of personnel, and raising public awareness are essential elements of successful health-care waste management.

**Keywords:** Health-care waste, Environment, Management.

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### Introduction

Health-care waste includes all types of waste generated within health-care facilities, research centres and laboratories related to medical procedures. It also includes wastes generated from minor sources such as during health-care at home (e.g. self-administration of insulin).<sup>1</sup> These wastes carry a higher potential for infection and injury than any other type of waste. Therefore, it becomes essential to have safe and reliable methods for handling these wastes. Inadequate and inappropriate handling of health care waste may have serious public health consequences and a significant impact on the environment. Appropriate management of health-care waste is thus a crucial component of environmental health protection and it has to become an integral part of health-care services.<sup>2</sup>

### Types and sources of healthcare wastes

General wastes (non-hazardous wastes) constitute the major portion (75-90%) of health-care wastes and the remaining 10-25% is considered as hazardous wastes which pose a significant health risk.<sup>2</sup> The various types of health-care wastes include infectious wastes (materials contaminated with blood and its products), pathological wastes (human tissues), sharps (syringes), pharmaceuticals (expired drugs), genotoxic wastes (cytotoxic drugs), radio-active wastes and chemicals (reagents). Infectious & pathological wastes constitute the majority of health-care wastes (upto 15%) and the other types contribute 1-2% each. The places

involved in generation of health-care wastes include hospitals, laboratories, research centres, mortuaries, blood banks and vaccine centres. Around 0.2-0.5 kg of hazardous wastes is being generated per hospital bed per day.<sup>3</sup>

### Health hazards due to health-care wastes

Health-care wastes contain potentially harmful organisms which can infect hospital patients, health-care workers and the general public. Other potential infectious risks may include the spread of drug-resistant micro-organisms from medical facilities into the environment.<sup>4</sup> Waste and by-products can also cause injuries such as radiation burns, sharps-inflicted injuries, poisoning and pollution by release of toxic chemicals. In addition to these hazards, improper disposal of health-care wastes may have significant occupational and environmental health risk. Wastes which have been disposed in landfills may lead to water pollution and inadequately done incineration can release various pollutants into the air.<sup>5</sup> Low level of awareness regarding the health hazards related to health-care waste, inadequate training in health-care waste management and absence of waste management & disposal systems are the most common problems connected with health-care waste.<sup>6</sup>

### Healthcare waste management planning

Health-care waste management operations at local, regional and national levels have to be organized and planned. The following objectives to be fulfilled while plans are made for health-care waste management: a) develop the legal and regulatory framework for health-care waste management, b) rationalize the waste-management practices within health-care facilities, c) develop specific financial investment and operational resources dedicated to waste management, d) launch capacity building and training measures, e) set up a

monitoring plan and f) reduce the pollution associated with waste management.<sup>7</sup>

### Reduce, Reuse and Recycle

The hierarchy of waste-management is largely based on the concept of the “3Rs”, namely reduce, reuse and recycle, which broadly relates to the sustainable use of resources. Best practice waste management will aim to avoid or recover as much of the waste as possible in or around a health-care facility, rather than disposing of it by burning or burial. The most preferable approach, if locally achievable, is to avoid producing waste as far as possible and thus minimize the quantity entering the waste stream. Where practicable, recovering waste items for secondary use is the next most preferable method. Waste that cannot be recovered must then be dealt with by the least preferable options, such as treatment or land disposal, to reduce its health and environmental impacts.<sup>8</sup>

### Conclusion

To conclude, health-care waste management currently suffers in many areas from a lack of attention by policy makers and a lack of funding. Hopefully, this lack will be remedied as the health and environmental benefits of proper treatment are better appreciated. Minimization of the amount and toxicity of waste should take ever greater priority at all stages of the medical product design, manufacture, procurement, use and disposal cycle.<sup>1</sup> At the same time, more recycling of non-hazardous wastes and the wider use of efficient and less polluting waste-disposal practices should reduce the impact on the environment and wider community health, and maintain protection from transmission of infections.

### Conflict of Interest: None

### Source of Support: Nil

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