**Facility Health Care Waste Management Plan — Guidance**

**Document Number: 102**

*Note: This guidance document is provided as a template and must be customized to accommodate facility specific procedures and terminology.*

# Purpose

This document describes what is required when developing the health care facility’s waste management plan.

# Scope

Wastes generated at health care facilities have the potential to cause harm if not managed correctly. The risk originates from waste that may be hazardous due to infectious agents, heavy metals (such as mercury), radioactivity (from oncology treatments), as well as redundant and expired pharmaceuticals. General waste, which includes the waste produced from activities in the kitchen, in offices and from other nonhazardous sources, may be safely minimized by recycling and reuse and the residual amount disposed of by landfilling. If risk waste and nonrisk waste (general waste) are combined, they must be treated as risk waste, thus larger volumes of waste than necessary are submitted for treatment, which may overload the treatment capacity, leading to stockpiling of untreated risk waste. Waste that is incorrectly segregated leads to increased costs of waste management.

There is an opportunity to reduce risk and costs by managing waste effectively. For waste to be managed, it must be measured. General waste should comprise 70-80% of the facility’s waste stream. If the figure is less, this usually means that nonhazardous waste is being discarded with hazardous waste. It is much more expensive to treat waste before disposal than to manage it as general waste. Squandering financial resources on inappropriate waste management will result in less to spend on helping people to live healthy lives.

The health care facility’s waste management plan should integrate all aspects of managing waste, from avoidance and minimization, proper segregation and containment, safe handling, storage and transport, to treatment and disposal. It should clearly define roles and responsibilities of staff, guiding principles, as well as the requirements for training and awareness. Reference to the legal requirements should be made to ensure compliance is established and standards maintained. The allocation of resources also needs to be set out, in terms of finances, time, equipment and personnel.

# Definitions

**Duty of care** — do no harm to people or the environment by considering the impact from cradle to grave.

**Green procurement** — minimize waste by specifying packaging requirements, take-back policies, just-in-time buying to avoid waste from expired products, substitution of hazardous items/constituents, etc. This is crucial to implementing the Waste Hierarchy (see figure on the next page).

**Measure to manage** — you need to know how much waste you make to control it.

**Precautionary principle** — if the hazard is unknown, presume the worst.

**Proximity principle** — reduce the risk from transport by managing wastes as close to the source as possible, within reason, and ensuring that the best practicable option is considered.

**Separation at source** — to ensure that hazardous and nonhazardous wastes are separated, as well as those that can be recycled/reused.

**Waste hierarchy** — waste generation is avoided where possible; minimized by recycling, reusing, recovering, refurbishing, etc.; treated to reduce the risk; and only the smallest residue incinerated or disposed of to landfill.

# Responsibilities

Every member of the facility is responsible for the waste they generate; however, certain personnel will have specific waste management tasks and responsibilities assigned to them.

* 1. **Facility manager** – overall responsibility and accountability for waste generated and managed on site, as well as for transport from the facility for treatment and/or disposal off-site. The manager is also responsible for ensuring that sufficient resources are allocated to waste management to ensure compliance with legal and other requirements.
	2. **Facility management and supervisors** – responsible for checking that appropriate standards are set and maintained on a daily basis in their areas and ensuring that problems are resolved.
	3. **Waste generators** – ensure that only they handle the waste and also ensure that it is properly segregated at the source and suitably contained to reduce risk of exposure to others.
	4. **Waste handlers** – ensure that waste in the intermediate storage areas is properly segregated, contained and labeled. Any problems noted must be immediately brought to the attention of the responsible person in that area.
	5. **Waste management officers** – responsible for ensuring that waste is managed according to legal and other requirements, checking that standards are maintained, that everyone is aware of these requirements, that relevant personnel are appropriately trained to safely deal with waste in their areas and that all necessary data are recorded and transmitted to the waste management committee and regulatory authorities.
	6. **Waste management committee** – comprised of representatives from senior management, those who generate waste, waste handlers, infection control, procurement and stores, catering, long-term or resident contractors and waste management service providers. This committee should meet monthly to discuss the key performance indicators (e.g., volume of waste generated, hazardous versus general waste ratio, incidents, audit findings, etc.) and to plan awareness programs and other initiatives to improve compliance with legal and other requirements. For smaller facilities, this committee can be the infection control/safety or health (and environmental) committee.
	7. **Contractors** – ensure that their staff are properly aware of and trained to comply with waste management requirements, routinely checking to ensure standards are maintained.

# Materials and Equipment

None

# Hazards and Safety Concerns

None

# Procedures

# Contents of the plan

The facility’s waste management plan should be drafted by a team, which becomes the waste management committee. The plan should include at least the following items:

* **Definitions** — including waste streams, categories, classifications, etc. See Glossary of Terms.
* **Duties and responsibilities** for each category of personnel generating and/or involved in managing health care waste.
* **Assessment** **of current state** of waste management activities. Refer to Doc 203: Health Care Waste Management Audit Procedures — Guidance.
* **Implementation plan** — a detailed plan and timetable outlining the initial stages of the implementation.
* **Resources** (people, equipment and budget) required annually to implement the plan. Refer to Doc 401: Health Care Waste Management Budget Planning — Guidance.
* **Training requirements** — including a matrix (departments, categories of personnel, training requirements, frequency of training, internal and external training service providers), training records. Refer to Doc 301: Health Care Waste Management Training — Guidance. Can include a schedule of themes for the year, with resources (pamphlets, posters, electronic information, presentations, etc) to raise awareness of waste-related issues that will help to improve waste management in the facility. The resources used will vary with the audience targeted, as determined by facility management. Simple, clear messages are essential, preferably using pictures and photos to convey the information.
* **Documentation** — A file containing all the waste management documentation (procedures, training and awareness, signage, contractors, authorizations, etc.); details of waste storage, collection, transport, treatment and disposal; a site map highlighting the storage areas and other relevant locations; compliance requirements; as well as auditing and inspection procedures and schedules.
* **Work instruction posters** showing waste management requirements at strategic and specific locations for specific waste streams, and how to ensure proper segregation, correct containment and compliance with handling and storage requirements. Facility management should procure posters appropriate for their facility.
* **Incident management and reporting**
	+ Procedures and associated documentation (such as incident registers, reports, follow-up audits, and work instructions)for hazardous spills (including mercury, radioactivity, etc.); incident analysis and trend reporting, etc. Refer to Doc 304: Biological Spill Clean-Up — SOP; Doc 308: Incident Reporting Form; Doc 309: Incident Log.
	+ Emergency response, including desk top and live simulations to test awareness and compliance.
	+ Contingency plans for dealing with emergency or abnormal situations, such as an incident that causes a surge of waste that could exceed the facility’s capacity. Examples include:
* Mass immunizations
* Outbreak of infectious disease
* Mass casualties from disasters or other major incidents
* Breakdown of the treatment/disposal facility or the associated transportation system, which may lead to the requirement for additional storage of waste.
* **Targets and strategies for reaching them**, communicating progress and plans for continuous improvement. Some targets might include:
	+ Reducing the number of incidents and injuries related to health care risk waste management
	+ Reducing the environmental impact of waste treatment technologies
	+ Reducing the amount and toxicity of waste year by year
	+ Improving recycling/reuse rates

# Steps for developing the plan (see Attachment 11.2 for a print-ready version)

Commit to act. Secure approval from senior management to properly manage waste.

Convene a committee. Require that all departments appoint representatives to serve on the committee, but keep the team small enough to be manageable.

Agree on major policy points. Ensure that the entire committee agrees on the need to improve health and safety of personnel and are committed to using alternatives to incineration, phasing out mercury, and preventing illegal dumping, among other points.

Adopt UNDP GEF Policy as the draft policy for first year (refer to Emmanuel [2009]: Elements of a Model Facility Policy on Healthcare Waste Management).

Allocate a preliminary budget. Assess personnel and equipment costs required to create the waste management system and to operate and maintain it.

Identify quick wins. Identify some actions that will make a big impact quickly. For example:

* Returning expired items , chemical containers, and packaging to the suppliers
* Using bulk containers to reduce the amount of packaging that becomes waste
* Purchasing items that are reusable, where possible
* Identifying where waste segregation practices are inadequate, determining the current costs for treatment/disposal, then tracking cost savings once segregation is effective

Consult with stakeholders. Seek guidance from relevant stakeholders and other experts.

Undertake a baseline assessment of current waste management practices. Consider using the UNDP/GEF Rapid Assessment Tool (IRAT) to assist with this assessment. (http:// gefmedwaste.org/downloads/I-RAT%20May%202009%20UNDP%20GEF%20Project.xls)

Establish a record of the quantities of hazardous and general waste generated as well as their treatment (recycled, treated, landfilled) calculated monthly and summarized annually.

Decide on waste management options for each waste stream:

* Create/update onsite storage/treatment facilities.
* Explore opportunities to avoid and minimize waste where possible, ensuring that procurement and stores personnel are involved in the process.
* If needed, contract with service providers for off-site transport, treatment, and disposal.

Create a detailed implementation plan including time frames, resources (financial, people, time, and equipment), and details of deliverables.

Finalize budget to ensure sufficient resources are allocated.

Choose a model ward with the best chance of success in which to begin the program:

* Train, inspire, and motivate all personnel, including relevant contractors.
* Work closely with the staff to make sure the plan works for them.
* Monitor and correct any inappropriate behavior immediately.
* Recognize and reward initiative and best practice. Do not move on to the next ward until this one is working properly. Learn the lessons and update the plan accordingly.

Expand throughout the facility, once the model ward is following the plan properly.

* Train personnel in small groups, shortly before the system will be implemented in their workplaces.
* Identify keen personnel and develop them as trainers and mentors.

Communicate. Ensure that everyone is aware of the procedures and understands their roles and responsibilities. Regularly communicate how the project is progressing and showcase good practices.

Monitor progress once the plan is rolled out across the whole facility.

Set targets to track trends, so you can try to improve year by year.

# Reporting and Recordkeeping

Reporting the volumes of health care risk waste generated, treated and disposed is mandatory in many countries. The facility should establish and maintain a waste register (see Attachment 11.1) to record the various waste streams generated, their classification (hazardous/general), along with their fate (such as recycling/reuse, treatment, landfill) and details of any external service providers involved. These figures should be tallied monthly and annually. It should be used for internal reporting, which will help the Facility to track progress in achieving targets.

# References

The World Health Organization and United Nations Environmental/Development Program have many guidance documents that provide good information and tips on how to go about establishing a waste management program. The following references have been used to prepare this document.

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Zghondi R. Basic steps in the preparation of healthcare waste management plans for healthcare establishments. Amman, Jordan: World Health Organization; 2002.

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Secretariat of Basel Convention and the World Health Organization. Preparation of national health-care waste management plans in Sub-Saharan countries guidance manual. Geneva: WHO; 2005. 88p. <http://whqlibdoc.who.int/publications/2005/924154662X.pdf>

PATH. Guiding principles for managing medical waste. Seattle (WA): PATH; 2005. 1 p.

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World Health Organization. Core principles for achieving safe and sustainable management of health-care waste. Geneva: WHO; 2007. 2 p.

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International Centre for Red Cross (ICRC). Medical waste management. Geneva: ICRC; 2011. 164 p.

 [www.icrc.org/eng/assets/files/publications/icrc-002-4032.pdf](http://www.icrc.org/eng/assets/files/publications/icrc-002-4032.pdf)

United Nations Development Programme‒Global Environment Facility (UNDP/GEF). Individual rapid assessment tool: health care waste management. [Excel spreadsheet]. New York (NY): UNDP/GEF; 2009. <http://webcache.googleusercontent.com/search?q=cache:xkiHzMCXPEEJ:gefmedwaste.org/downloads/I-RAT%2520May%25202009%2520UNDP%2520GEF%2520Project.xls+%E2%80%A2+UNDP/GEF+Individual+Rapid+Assessment+Tool:+Health+Care+Waste+Management&cd=1&hl=en&ct=clnk&gl=us>

Other resources available at the *Health Care Without Harm* website [www.noharm.org](http://www.noharm.org).

# Related Documents

* Doc 203: Health Care Waste Management Audit Procedures — Guidance
* Doc 401: Health Care Waste Management Budget Planning — Guidance
* Doc 301: Health Care Waste Management Training — Guidance
* Doc 304: Biological Spill Clean-Up — SOP
* Doc 308: Incident Reporting Form
* Doc 309: Incident Log

# Attachments

# Sample Waste Register (complete in kgs per month per waste stream)

# Steps for Developing the HCWM Plan

## Attachment 11.1: Sample Waste Register (complete in kgs per month per waste stream)

For waste to be managed, it must be measured. There is an opportunity to reduce risk and costs by managing waste effectively. This waste register can be generated in an Excel spreadsheet, with the formula included to automatically update the totals as the entries are made. It can be linked to the registers of each of the facility’s departments so that a complete site waste register is available. Examples of nonhazardous waste streams include paper, cardboard, various grades of plastic, polystyrene, and food wastes. Other hazardous wastes include electronic and electric goods and components such as computers, monitors, printers, printer cartridges, phones, pagers, and batteries. Lamps, other than the old energy-wasteful incandescent globes, may contain mercury and other hazardous materials, so are classified as hazardous. Do not forget the facility’s workshop wastes, many of which are hazardous including waste oils, biocides and herbicides, PCBs from waste oil in old transformers, and asbestos. All the waste streams need to be identified, classified, reviewed for minimization opportunities and, where hazardous, for replacement with alternatives with less potential for harm to people and the environment.

**To complete the form**, insert the waste stream name in the top, in place of the heading “waste stream 1” e.g., sharps generated in the ward. Go to row 2 and tick the “hazardous” block (it is potentially infectious) and then in row 3 tick the “treated” and “disposal” block, if the sharps container will be treated to disinfect it before it is landfilled. If treatment is undertaken off-site by a service provider, they will dispose of the disinfected waste, so you do not tick the “disposal” block, just the “treatment” block. If the second waste stream is paper and cardboard from an office, insert this name into the “waste stream 2” block. This waste is not hazardous, so tick “general” in row 2 under this column. If the paper is sent off-site for recycling, tick the “recycle” column. If your area has many waste streams, copy this table into a spreadsheet, or print it in landscape format, so you can insert many columns for each of the waste streams you manage.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Year  | Waste Stream 1 | Waste Stream 2 | Waste Stream 3 | Waste Stream 4 |
| Tick classification | Hazardous | General | Hazardous | General | Hazardous | General | Hazardous | General |
| Tick Waste Destination/Fate | recycle | reuse | treated | landfill | sewer | recycle | reuse | treat | landfill | sewer | recycle | reuse | treat | landfill | sewer | recycle | reuse | treat | landfill | sewer |
| January |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| February |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| March |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| April |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| May |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| June |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| July |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| August |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sept |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| October |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| November |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| December |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Annual Totals** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Attachment 11.2: Steps for Developing the Health Care Waste Management Plan**

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