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SPREP
Secretariat of the Pacific Regional Environment Programme

PacWastePlus
PACIFIC WASTE MANAGEMENT

This initiative is supported by **PacWastePlus**-a 85 month project funded by the European Union (**EU**) and implemented by the Secretariat of the Pacific Regional Environment Programme (**SPREP**) **to sustainably and cost effectively improve regional management of waste and pollution.**

Developing a Healthcare Waste Management Plan for your healthcare facility

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Our vision: A resilient Pacific environment sustaining our livelihoods and natural heritage in harmony with our cultures.

Table of Contents

About PacWastePlus

The impact of waste and pollution is taking its toll on the health of communities, degrading natural ecosystems, threatening food security, impeding resilience to climate change, and adversely impacting social and economic development of countries in the region. The PacWastePlus programme will generate improved economic, social, health, and environmental benefits by enhancing existing activities and building capacity and sustainability into waste management practices for all participating countries.

Countries participating in the PacWastePlus programme are: Cook Islands, Democratic Republic of Timor-Leste, Federated States of Micronesia, Fiji, Kiribati, Nauru, Niue, Palau, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.

Key Objectives

Outcomes & Key Result Areas

The overall objective of PacWastePlus is "to generate improved economic, social, health and environmental benefits arising from stronger regional economic integration and the sustainable management of natural resources and the environment".

The specific objective is "to ensure the safe and sustainable management of waste with due regard for the conservation of biodiversity, health and wellbeing of Pacific Island communities and climate change mitigation and adaptation requirements".

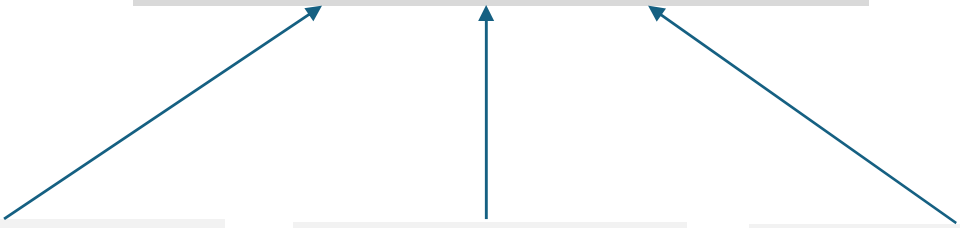
Key Result Areas

- Improved data collection, information sharing, and education awareness
- Policy & Regulation - Policies and regulatory frameworks developed and implemented.
- Best Practices - Enhanced private sector engagement and infrastructure development implemented
- Human Capacity - Enhanced human capacity

Healthcare Waste Management Plan Resources

Healthcare Waste Management Plan

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.



Technology Options: Safe Destruction of Healthcare Waste Other Than Traditional, High Temperature

This report seeks to assist Pacific Island Countries (PICs) and Timor-Leste to select alternative technologies for the treatment of healthcare waste other than traditional incineration or landfilling.

Personal Protective Equipment: Guidance for Waste Management Workers in Pacific Island Countries

The information presented in this publication summarizes international best practices. In case of a conflict in interpretation, the country's actual policies and regulations in which PPE is to be worn should apply.

Waste Technology Management Options: Healthcare Waste

This publication provides details on some of the most appropriate waste management technologies identified for the PacWastePlus programme priority waste of Healthcare Waste with consideration to the inherent constraints of the Pacific Island region.

Developing a Healthcare Waste Management Plan for your healthcare facility

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 no risk 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.

Below is a template that can be used to create a Healthcare Waste Management Plan for your healthcare facility. User instructions are in green and can be deleted upon completion of the form.

Healthcare Waste Management Plan Template

User Instructions:

Delete and replace *the light grey italicized text* to fill out the template.

Delete green instruction text when finished.

Overview

This Waste Management Plan describes the current policies and procedures for managing healthcare wastes. It provides goals and targets to ensure ongoing improvements in all aspects of waste management, including the generation, handling, storage and disposal of all forms of waste.

The scope of the Waste Management Plan is to ensure that waste management practices are consistent across all departments within each healthcare facility.

This Waste Management Plan is a living document and must be reviewed annually. If new wastes/recyclables are generated, new opportunities for reuse/recycling develop (ie., systems or markets), or legislative/policy/guidelines requirements are amended, this Plan will be amended accordingly.

The specific aims and objectives of this Waste Management Plan are:

Fill out the following table with the aims of your facilities Waste Management plan. Some examples have been provided.

▪ *To protect public health and safety*
▪ *To provide a safe work environment*
▪ *To minimise the environmental impact of waste generation treatment & disposal*
▪ *Reduce waste handling & disposal volumes/costs without compromising health care*
▪ *To adopt and implement the Waste Management Plan throughout the facility*
▪ *To monitor performance and review the Waste Management Plan at least annually*
▪ *To adopt a waste minimisation policy which incorporates purchasing guidelines*
▪ *Develop waste segregation principles and promote practical guidelines for re-usable products*
▪ *Foster commitment from all staff and management to actively participate in waste avoidance, reduction, reuse and recycling programs*
▪ *Introduce a continuing waste management education program for all staff to increase awareness of Occupational Health & Safety issues and waste minimisation principles*
▪ *Adopt policies and procedures to minimise the environmental impact of waste treatment and disposal*

Contents

The following are the core elements of a waste management plan that will be required to be developed by all generators of healthcare waste.

The extent and content of the plan will be dependent on the type and quantity of healthcare waste generated and the services available to manage those wastes on/offsite.

Delete all sections that do not apply to the facility.

Contents:

Waste streams

Based on the facility profile, the following are the waste streams that are expected to be generated on a daily basis:

Fill in the following table with the waste streams that you expect to be generated in your facility on a daily basis. Some examples have been provided for you.

▪ *General waste*
▪ *Clinical waste*
▪ *Anatomical waste*
▪ *Cytotoxic waste*
▪ *Sharps*
▪ *Paper/cardboard recycling*
▪ *Commingled recycling*
▪ *Confidential documents*

Estimated waste generation

The following table shows the estimated volume of waste anticipated to be generated from the various components of the facility:

These estimates need to be based on averages for quantity and composition of the waste generated as determined by industry data (i.e. data/information provided by waste audits conducted in the facility).

Fill in the following table with the estimated volume per day and per week for the streams of waste and recycling that you identified in the above table:

Waste/recycle stream	**Estimated volume per day (L)**	**Estimated volume per week (m^3)**
Clinical waste		
Sharps		
Anatomical		
Cytotoxic		
General waste		
Paper/cardboard		
Commingled		
Confidential Documents		
Total (m^3)		

It is estimated that the facility will generate a total of approximately *[Insert estimated value]* **m^3** of waste and recyclables per day – a total of *[Insert estimated value]* **m^3** per week.

The following summarises the servicing frequency for the various waste/recycling streams:

Fill in the following table with the correct size and type of container necessary for each waste stream identified in the above table.

These values can fluctuate according to time of year and changes in treatments and services. The facility will be equipped to manage and cope with changes in waste types and volumes generated on a day to day basis through more regular collection frequencies.

Stream	Container for Disposal	Servicing Frequency
Clinical waste		*Daily*
Sharps		*Daily*
Anatomical		*Daily*
Cytotoxic		*Daily*
General waste		*3 per week*
Paper/cardboard		*1 per week*
Commingled		*3 per week*
Confidential Documents		*On call*

Other waste streams

Waste streams that may be generated on a less regular basis include:

Fill in the following table with the waste streams that are generated on a less regular basis. Some examples have been provided for you.

▪ *Pharmaceutical waste*
▪ *Organic waste*
▪ *Garden waste*
▪ *Sanitary waste*
▪ *Battery recycling*
▪ *E-waste*
▪ *Toner cartridge recycling*
▪ *Used cooking oil*

Delete the following statements if they do not apply to the facility.

Pharmaceutical waste is disposed of via [*State how pharmaceutical waste is disposed of in the facility i.e. disposed of by pharmacists at sites licensed to store/treat the waste as required*]

[*Minimal/a moderate amount/a significant amount]* of organic waste is expected to be generated.

It is expected that [*significant/moderate/minor*] quantities of garden waste will be generated. [*State who will be responsible for managing garden waste*] will be required to manage this waste by disposal [*State where garden waste is disposed*].

[State who is responsible for conducting waste assessments] will conduct a waste assessment to determine the additional types and quantities of reusable, recyclables or compostable waste that may be generated. Following this, appropriate management systems will be implemented and where necessary generators advised of these management requirements.

Waste storage and collection area

Delete the information that is not relevant to the facility.

If your facility has a provision for a bin washing area: The bin washing areas will be required to drain to the *[sewer/cess pit/other].*

Each stream will be located in a designated area which will assist in easy identification of correct bins by cleaners.

In keeping with best practice sustainability programs, all waste areas; reuse areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to reflect the materials contained.

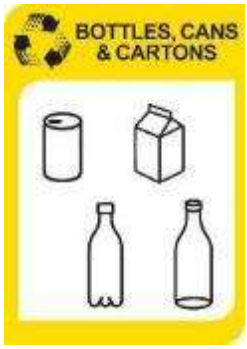
The waste areas will be accessed by staff only.

The waste storage area will be locked so as to prevent unauthorised access and the incorrect disposal of waste materials.

Signage will be a crucial element of the waste management system. The *[State who is responsible for signage]* will provide all signage for bins and walls in waste storage rooms. Below are examples of the types of signage that can be used at the facility.

Delete all signs that are not relevant to your facility.


CLEAN PAPER
& CARDBOARD


BOTTLES, CANS
& CARTONS

Waste storage amenity

The waste room will be designed and constructed according to the following requirements to [*State your waste room requirements e.g. minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area*]:

Fill in the table below by stating how the waste room will be designed and constructed to meet the requirements you stated above. Some examples have been provided.

Occupational Health and Safety issues such as slippery floors in waste rooms and the weight of the waste and recycling receptacles will need to be monitored.

▪ *waste room floor to be sealed*
▪ *waste room walls and floor surface is flat and even*
▪ *all corners covered and sealed 100mm up (this is to eliminate build-up of dirt)*
▪ *any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water authority*
▪ *all walls painted with light colour and washable paint*
▪ *equipment electric outlets to be installed 1700mm above floor levels*
▪ *light switch installed at height of 1.6m*
▪ *waste rooms must be well lit (sensor lighting recommended)*
▪ *optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction. This process generally takes place at building handover*
▪ *all personnel doors are hinged and self-closing*
▪ *follows guidance from the SPREP Healthcare Waste Management Education Resource*
▪ *childproofing and public/operator safety shall be assessed and ensured*

[State who will be responsible for the bin storage area] will monitor the bin storage area and all spills will be attended to immediately by cleaners.

Internal waste transfer

Waste and recycling bins will be located in *[State locations e.g. at the department level, office spaces, cleaner's rooms, patient areas]* as required for the activities conducted in each specific department. The following table summarises internal waste transfer in the facility:

Fill in the following table with the following:

- waste streams generated in the facility on a daily basis
- the type of bin required for each waste stream
- the colour of the required bin
- the size of bin required for each waste stream
- the location of the relevant storage area for each bin

Some example waste streams have been provided.

Waste Stream	Type of bin	Colour of bin	Size of bin (L)	Location of relevant storage area
General				
Clinical				
Anatomical				
Cytotoxic				
Sharps				
Commingled recycling				
Paper / cardboard recycling				
Confidential documents				

Clinical waste transfer

Mobile garbage bins will be positioned [*State location*]. In addition, sharps containers will be located [*State location or, if facility is large enough throughout the facility as required*].

All clinical and related wastes must be:

Fill in the table below with the requirements of handling and transferring clinical and related wastes. Some examples have been provided.

▪ *Handled by staff with knowledge and access to appropriate PPE*
▪ *Packaged so that there is no risk of waste escaping*
▪ *Transported and disposed of in accordance with the SPREP Healthcare Waste Management Education Resource*

The following principles will apply to the management of clinical waste:

Fill in the table below with principles that will apply to managing clinical waste in the facility. Some examples have been provided.

▪ *Sharps containers should be placed within "arms reach" of where the sharp is generated*
▪ *The full containers are located in [State location] awaiting collection by healthcare facility staff and/or contractors.*
▪ *All containers must be constructed appropriately and correctly colour coded as outlined in the SPREP Healthcare Waste Management Education Resource.*
▪ *It is intended that facility staff will service the sharps containers/bins from their place of use within the facility and replace them at the same time with empty containers/bins*

The actual number and size of containers to be utilised will depend on the patients' conditions and discussions with the appointed clinical waste contractor.

Collection and vehicle access

The servicing frequency of each waste stream will determine the collection rate of waste streams and access to vehicles to transport waste for disposal. This is summarised in the table below:

Fill in the table below by indicating the type of vehicle required for transport and the schedule said vehicle to transport the waste.

Stream	Servicing Frequency	Type of vehicle	Schedule
Clinical waste	*Daily*		
Sharps	*Daily*		
Anatomical	*Daily*		
Cytotoxic	*Daily*		
General waste	*3 per week*		
Paper/cardboard	*1 per week*		
Commingled	*3 per week*		
Confidential Documents	*On call*		

Waste management education:

All waste management strategies (particularly resource management programs) rely on all staff to participate and cooperate in order to ensure that objectives are met. Staff therefore must receive appropriate training/education in order to understand their waste management responsibilities.

All staff and contractors shall attend a waste management training session. This is to be conducted during all induction programs in the first instance.

For those staff and contractors currently employed on-site, they will be required to attend a dedicated training session so that they are fully aware of their roles and responsibilities in respect to waste management.

Records shall be maintained of all staff and contractors' attendance at training sessions to ensure that all personnel attend.

An internal Waste Management Committee (apart from ensuring staff education programs are developed and implemented), should also address other methodologies in order to ensure that staff receive information on waste reduction programs (e.g., signage, information sheets and flow charts).

All staff will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and updated information will also be provided, as well as receiving feedback on issues such as contamination of the recycling stream or leakage of the recyclables into the general waste. The facility's management will be responsible for these tasks.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste services contract.

It is recommended that all signs should:

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate literacy
- As part of the staff induction and welcoming process, a waste and recycling toolkit will be provided. This toolkit will include the details of each of the systems in place; acceptance criteria for each stream and how each stream is managed.

An active waste monitoring program will be employed. The waste and cleaning contracts will ensure that contractors actively participate in the waste reduction program for the site and meet regularly to identify performance and new opportunities for diversion and avoidance.

Ongoing Management

Delete all that is not relevant.

Having suitable systems in place is only one element of an effective waste management system. Compliance by all stakeholders is essential.

Cleaners will be required to provide feedback to management about any non-compliance issues they observe during their cleaning activities, such as contamination, non-participation, or missing or damaged bins. This allows issues to be dealt with promptly by management.

The *[State any waste/recycling contractors]* will be required to report actual quantities collected by stream so that management can monitor performance and feed this back to staff. Specific Key Performance Indicators for performance shall be included in waste and recycling contracts. *[State any Specific Key Performance Indicators here]*.

The *[State any waste/recycling contractor]* will also be required to participate in ongoing reviews and provide updates on new opportunities that may allow the facility to further increase their diversion from landfill.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