Kingdom of Swaziland

Ministry of Health

National Health Care Waste Management Standard Operating Procedures

SCMS

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Foreword

Improper management of health care waste poses a considerable risk to public health and the environment. It is worth noting that not all waste generated from health care facilities is infectious and hazardous, but only 10-15% of the waste would be classified as such. Given the heightened international attention to environmental and health issues, ensuring proper health care waste management is of paramount concern for the environmentalists, members of the health sector and broader societies worldwide.

The Environment Management Act of 2002, Waste Regulations of 2000 and the Public Health Act of 1969 established required reforms for the management of health care waste. In order to disseminate knowledge on the proper use of technology to carry out appropriate developments, the National Health Care Waste Management Guidelines were conceived and produced in close collaboration with experts and with the involvement of the wider community of stakeholders.

The National Health Care Waste Management Guidelines consist of recommended, non-mandatory controls that help support standards or serve as a reference when no applicable standard is in place regarding safe, efficient and environment-friendly waste management options. In addition, the Guidelines should be viewed as best practices that are not usually requirements, but are strongly recommended, for the collection, handling, storage, transport, treatment and disposal of health care waste, while recognizing escalating costs incurred by health care waste management.

During the development of the National Guidelines, certain 'gap' areas were identified which warranted more explicit detail and instruction to empower health care facilities to meet the controls set forth in the Guidelines. Therefore, a series of subject-specific Standard Operating Procedures (SOPs) were compiled, in collaboration with the Swaziland HCWM Technical Working Group, and they are conveniently packaged in the document that follows. Procedures consist of step-by-step instructions to assist workers in implementing the various policies, standards and guidelines. Whilst the policies, standards and guidelines consist of the controls that should be in place, a procedure gets down to specifics, explaining how to implement these controls in a step-by-step fashion.

The Ministry of Health Swaziland, remains committed to improving health care waste management across the board, and acknowledges and thanks all those who have contributed to creating the tools to aid this endeavor. May we grow from strength to strength.

DR. S.M. ZWANE
ACTING PRINCIPAL SECRETARY

Acknowledgements

The following Standard Operating Procedures on health care waste management would have not been possible without the dedication and collaboration of the Swaziland Minister of Health, Ministry of Health's PS, PEPFAR, the Swaziland Ministry of Health's Environmental Department, the Technical Working Group and all Consultants.

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Implementing Partner

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Table of Contents

Acronyms

CGS	Central General Stores
CMS	Central Medical Stores
GoKS	Government and Kingdom of Swaziland
HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SCMS	Supply Chain Management System
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure
USAID	United States Agency for International Development

Introduction

Poor health care waste management (HCWM) is an issue of global and national concern, particularly for the Government and Kingdom of Swaziland (GKoS). With the increased prevalence of HIV/AIDS and other infectious diseases, there has been a corresponding upsurge in the generation of health care waste (HCW). This increase puts health care workers, patients, waste handlers, waste pickers, the general public, animals and the environment at risk.

This document packages and presents the series of Standard Operating Procedures (SOPs) compiled to supplement the newly revised National Guidelines on Health Care Waste Management for Swaziland. These SOPs are suitable for use at national, regional and local levels and are designed to provide more detail on certain identified 'gap' areas that are not fully explained in the National Guidelines. They are not meant to replace facility-specific SOPs or Work Instructions, but to, instead, inform them.

What are Standard Operating Procedures?

An SOP is defined as a method for accomplishing policy. As a procedural document, it provides instructions on how to carry out the policy expressed in the National Guidelines. In effect, SOPs represent the action plan for achieving policy.

A predominant difference between a SOP and a Guideline is the level of detail. An effective SOP communicates who will perform the task, what materials are necessary, where the task will take place, when the task shall be performed, and how the responsible person will actually execute the task.

The details in an SOP standardize the process and provide step-by-step instructions that enable anyone within the system to perform the task/procedure in a consistent and correct manner. The SOP also serves as an instructional and reference resource. The step-by-step written procedure furthermore contributes to the concept of accountability, because staff expectations and health care facility procedures are documented and activities can be measured against the SOP. Communicating procedures that anyone in the system can follow with consistent results will ensure that the health care facility continually provides a minimum quality of service.

An SOP usually informs a Work Instruction, downstream, which forms part of a staff member's scope of work and job description.

Purpose:

The purpose of the SOPs that follow are to serve as framework for providing direction and structure in the proper management of HCRW, thereby supplementing the National Guideline on Health Care Waste Management. As aforementioned, they complement the National Guidelines by providing further procedural detail for subjects that are not catered for. The following SOPs provide the user with:

- ✓ Written documentation of best practice;
- ✓ Relates the what, how, when, why, and who;
- ✓ Provides a foundation for:
  - ➢ job descriptions / work instructions;
  - ➢ staff training;
  - ➢ corrective action and discipline; and
  - ➢ performance review.

Standard Operating Procedures

Section:	Number:	Title:	Revision:
MOH-HCWM	001	**Identification, Segregation and Packaging**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document outlines the procedures for the proper identification, segregation and packaging.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.

Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies.

	Examples: nurses; doctors; phlebotomists; dentists; etc.
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Example: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre,*

	mobile clinic and health centre.
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health workers, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in an administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal.

	Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Example: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: Cleaners; Orderlies; Housekeepers; Groundsmen; Drivers; etc.*

Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: Accounts / Finance; Stores; Biomed; Maintenance.*

5. Acronyms

CGS	Central General Stores
CMS	Central Medical Stores
HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Identification and Segregation

1. Segregation is the process of separating different categories of waste at the point of generation, keeping them isolated from each other for specific reasons and in suitably designed, labeled and colour-coded packaging for visual identification.

2. To improve segregation efficiency and waste minimization, the correct use, proper placement and labeling of containers must be carefully implemented. General waste containers should be placed in close proximity to HCRW containers.

7.1. Colour-Coding Scheme for Health Care Waste:

The most appropriate way of identifying the categories of health care waste is by sorting the waste into suitably designed, colour-coded plastic bags or containers.

Waste Category	Waste sub-category	Colour – coding	Hazard Label/Symbol	Container/ Packaging	Treatment/ Disposal/ Destruct
Infectious Waste	None	RED	Biohazard symbol	Heavy duty, leak-proof red plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology
Infectious Anatomical/ Pathological waste (a)	Infectious Human	RED	Biohazard symbol	Heavy duty, leak-proof red plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology
	Infectious Animal	ORANGE	Biohazard symbol	Heavy duty, leak-proof orange plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved

					Alternative Technology
Sharps Waste	None	No colour specified (yellow / white/red / clear)	The words: "Danger Contaminated Clinical Sharps" in RED text with Biohazard symbol	Puncture-proof, rigid plastic container for sharps.	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology
Chemical Waste	Chemical	DARK GREEN	Use appropriate hazard label	Sealable, puncture-proof green rigid plastic container	Transport to CMS for Incineration/ Hazardous Waste Landfill
	Pharmaceutical	DARK GREEN	Use appropriate hazard label	Sealable, puncture-proof green rigid plastic container	Transport to CMS for Incineration/ Hazardous Waste Landfill
	Genotoxic/ Cytotoxic	DARK GREEN	Use Appropriate hazard label	Sealable, puncture-proof green rigid plastic container	Transport to CMS for Incineration/ Hazardous Waste Landfill
Radioactive Waste	None	None	Use Appropriate hazard label	Contact SEA for further info.	Radioactive waste disposal site.
General Waste	None	BLACK or TRANSPARENT	None (b)	Good quality black or transparent bag (c)	Landfill

Special Waste	Heavy Metal	None	Use Appropriate hazard label	Refer to facility-specific, element-specific SOP	Transport to CMS for specialized recovery or disposal / Hazardous Waste Landfill
	Pressurized Containers	Black	Use Appropriate hazard label	Good quality black bag labeled 'waste pressurized containers' or 'waste aerosol dispensers'.	Transport to CMS for specialized recovery/ Hazardous Waste Landfill
	Highly Infectious Laundry	RED	Refer to Swaziland National HCWM Guidelines page 5, Figure 2.	Heavy duty leak-proof bag or rigid plastic container	Dedicated Secure Waste Pit/ Incineration
	Microbial Waste	RED	Biohazard symbol	Fibre board box set lined with heavy duty, leak-proof red plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology
	Food Waste from Isolation Ward	RED	Biohazard symbol	Double-bagged and put into a Fibre board box set lined with heavy duty, leak-proof red plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology

	Amputated Limbs	RED	Biohazard symbol	Double-bagged and put into a Fibre board box set lined with heavy duty, leak-proof red plastic bag	Dedicated Secure Waste Pit/ Incineration/ Approved Alternative Technology
	Electronic Waste	None	Labeled E-WASTE	Put into boxes, sealed and labeled accordingly.	Sent to CGS or suitable alternative collection facility for recovery, recycling and/or specialized disposal.

[a]Chemical or radioactive solutions containing human or animal anatomical, and infectious wastes are considered as chemical or radioactive waste respectively.

[b]**Black, white** or **transparent** packaging can be used.

[c]Transparent bag is recommended for HCF so that if hazardous waste slips into the general waste stream it can be easily identified by visual assessment before handling.

7.2 Visual Identification and Segregation

Visual identification is the process of identifying waste at point of generation and segregating it into the appropriate waste category / stream, the categories / streams defined as follows:

General Waste	Infectious Waste
• Packaging materials (uncontaminated) • Office Supplies • Beverage Containers • Hand Towels • Boxes	• Gauze/Dressings • Gloves • Anatomical Waste • Blood • IV fluid lines

<table>
<tr><td>Glass/Plastic Bottles
Food
Cardboard
Plastic / Cellophane Wrap
Cling Wrap
Food Wrap</td><td>Plastic Forceps
O-drape
Plastic Container Tray
Plastic Apron
Alcohol Swab
Test Strip</td></tr>
<tr><td>Sharps Waste</td><td>Chemical Waste</td></tr>
<tr><td>Syringes with Needles (no denotching)
Infusion sets
Scalpels
Blades
Broken Glass
Sutures
Lancet
Suture</td><td rowspan="3">Damaged/Unusable Pharmaceuticals
Expired Pharmaceuticals
Damaged (not broken)/Unusable Injectables
Cytostatic/ Chemotherapeutic Drugs
Mutagenic, Teratogenic and / or Carcinogenic products or items contaminated with mutagenic, teratogenic and / or carcinogenic products to be discarded
Radioactive solutions or products or items contaminated with radioactivity to be discarded.
Solid, liquid or gaseous products that are to be discarded that contain dangerous or polluting chemicals.</td></tr>
<tr><td>Special Waste</td></tr>
<tr><td>Mercury
Batteries
Lead
Pressurized Cylinders, Cartridges and Aerosol cans.
Infectious Laundry
Microbial Waste such as Culture Plates, etc.
Food Waste From Isolation Wards
Electronic Waste</td></tr>
</table>

7.3 Process of Identifying and Segregating Waste

1. Identify and segregate waste at point of generation and place waste into the appropriate colour – coded waste container.
2. Never remove general, sharps or infectious waste that has been places in the incorrect colour-coded bag or container.
3. Once general waste is mixed with HCRW, all of it is considered HCRW as the general waste will now be contaminated.

8. Packaging Requirements

One of the core elements of sound health care waste management is **SAFE CONTAINERIZATION/PACKAGING**. Once the waste generated has been containerized/packaged for disposal, one does not want anyone exposed to its contents as it is moved from site to site en route to its final resting place.

It is therefore imperative that containers meet certain minimum criteria and manufacturing standards.

FOR EXAMPLE: SHARPS ARE INFECTIOUS TOO, BUT THEY ARE SEPARATED AS AN ISOLATED CATEGORY BECAUSE THEY CANNOT BE PUT INTO A RED BAG. DUE TO THE PHYSICAL NATURE OF SHARPS, THEY CAN PIERCE OR PENETRATE A BAG PUTTING THE HANDLER DOWN THE LINE AT RISK OF A NEEDLE-STICK INJURY. THIS IS WHY SHARPS GO INTO A RIGID PLASTIC CONTAINER. BY SAME, IF A RED BAG IS TOO THIN (POOR QUALITY) TO CARRY THE WEIGHT OF ITS CONTENTS, IT CAN TEAR OR BREAK AND SPILL THE CONTENTS, PUTTING HANDLERS DOWN THE LINE AT RISK OF EXPOSURE. THIS IS WHY RELEVANT HEALTH CARE WASTE MANAGEMENT POLICIES DICTATE A MINIMUM QUALITY STANDARD FOR RED BAGS FROM RELEVANT SUPPLIERS.

1. Plastic bags with a capacity of 60 (sixty) litres or more must be at least 80 (eighty) microns in thickness.
2. Plastic bags with a capacity of less than 60 (sixty) litres must be at least 60 (sixty) microns in thickness.
3. Plastic bags used as barriers in puncture resistant containers that are at no time removed from such puncture resistant containers, other than for the final treatment of the contents, must be at least 40 (forty) microns in thickness.
4. Plastic bags which are used as smaller intermediate barriers within a single ward or similar, and that are subsequently placed in puncture resistant and leak resistant containers or further plastic bags, must be at least 40 (forty) microns in thickness.
5. All plastic bags and disposable containers must be manufactured from polypropylene or polyethylene polymers; or polymers that cause, at a maximum, equivalent environmental impacts to those caused by polypropylene or polyethylene polymers when disposed by incineration, or treated by means of any available alternative technology.

6. Any container used for the storage of anatomical / pathological waste, must be manufactured from suitable materials able to withstand the low temperatures at which such waste is stored.
7. Rigid puncture resistant containers shall be leak resistant, have fitted covers, and be kept clean and in good repair.
8. Lids used for disposable sharps containers must be secured in such a way that they cannot be reopened once closed, without major structural damage to the container.
9. Lids used for anatomical / pathological waste containers must provide an airtight seal to prevent the emissions of odours as well as spillage.
10. Plastic bags may not be used as final outer containers.

Note: A micrometer is easy to purchase and use to measure the micron thickness of bags as a means of quality control at the level of procurement.

9. Records

1.

10. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

11. Documents

1. Attachment 1: Training Evaluation Checklist

12. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

13. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				

3				
4				

Attachment 1

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. List the colour-coding system for health care waste management?
2. Define Infectious Waste?
3. Define General Waste?
4. Define Chemical Waste?
5. Define Sharps Waste?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	002	**Handling of Packaged Health Care Risk Waste**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document provides processes for handling, lifting, carrying, stacking and/or packing of HCRW.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• To identify and segregate all HCRW at the point of generation as per SOP-MoH-HCWM-001. • To only use packaging / containers which meet minimum manufacturing / quality specifications as dictated by the National Guidelines (3.5.1 Minimum Requirements for the Packaging of HCRW – page 17).

	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers and close them off correctly. • Collect and internally transport HCW to a temporary waste storage site meeting the criteria as detailed in SOP-MoH-HCWM-003. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Ensure that HCWM products and equipment meet minimum quality standards. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and program waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation, packaging and correct handling of HCW. • Ensure that staff is using HCWM products and equipment that meet minimum quality standards as suggested by the National HCWM Guidelines. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste /	Anatomical Waste (also often referred to as pathological waste) consists of

Pathological Waste	tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Example: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive Waste.*
Color-coding System	A system for relating the contents of packaging / containers by using different colors.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant.

	Examples: pollutant, radioactivity, chemical, blood, etc.
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies).

	Examples: administrator; manager; senior matron; senior medical officer.
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special

	packaging and/or handling. *Examples: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance

SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.
2. SOP-MoH-HCWM-001: Identification, Segregation and Packaging.
3. SOP-MoH-HCWM-003: HCW Storage

7. Procedure

7.1 Assess Environment

Before handling any HCRW, the cardinal rule in all instances, BEFORE taking action, is:

7.1.1 What to look for:

- Container/package is colour-coded and labeled correctly informing the handler of its contents and hazard risk.
- Container/package is suitably sealed off.
- There is no sign of the contents of the container / packaging (i.e. no needles protruding or penetrating sharps containers, no liquids leaking from containers, etc.). The HCRW stream in question is safely contained in suitably designed packaging.

7.1.2 The main risk factors, or ***conditions,*** associated with the development of injuries in manual material handling tasks include:

- Awkward postures (e.g., bending, twisting)
- Repetitive motions (e.g., frequent reaching, lifting, carrying)
- Forceful exertions (e.g., carrying or lifting heavy loads)
- Pressure points (e.g., grasping [or contact from] loads, leaning against parts or surfaces that are hard or have sharp edges)
- Static postures (e.g., maintaining fixed positions for a long time)

7.2 Lifting and Carrying Procedures

Back injury is the leading lost work time injury in industry. Experience has shown that the communication of simple lifting techniques can significantly reduce the incidence of these injuries and it is therefore essential that all workers are made familiar with the following basic guidelines:

7.2.1 Carrying Bags containing HCRW:

1. Put on the appropriate PPE (elbow gloves, mask, goggles, apron and safety boots).
2. Ensure that the bag has been closed off / sealed correctly, no more than ¾ full with a stub for carrying.
3. Inspect bag visually for leaks, breaks, tears, and / or penetrating sharps and etc.

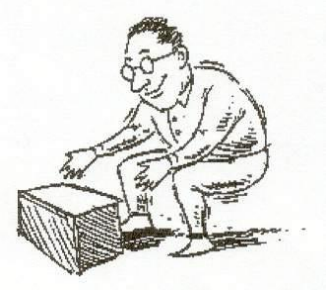
IF THE BAG IS LEAKING, BROKEN, TORN OR ETC. DON'T PICK UP BAG AND IMMEDIATELY REPORT THE INCIDENT TO MANAGERIAL STAFF FOR INVESTIGATION AND MITIGATION.

4. If safe grab the bag, bend with knees and lift with legs while holding the bag by the stub and carry far away from body.

7.2.2 How to lift Container (which is not a bag):

1. Put on the appropriate PPE (elbow gloves, mask, goggles, apron and safety boots).
2. Know destination before beginning.
3. Check if the item has handles.
4. Standing directly in front of the container, position feet evenly (shoulder width apart).
5. Keep back straight and stand up tall.
6. Tighten stomach muscles.
7. Squat to the floor by bending knees- DO NOT move upper body.
8. Take hold of the object firmly with both hands.
9. Distribute the weight evenly - make sure the container is balanced.
10. Keeping the object close to body, begin to stand up by straightening legs (this will use leg muscles and shouldn't put strain on other areas).
11. Stand up slowly. Do not move quickly or jerk.
12. Walk with the container/package (but be careful not to twist your body unnecessarily). Take small steps if possible.
13. When placing the item down, bend legs.
14. Keep back straight while bending down again.
15. Be careful to lower each side of the object to the floor separately- avoid trapping fingers under the weight.
16. Before attempting to lift any object it is a good idea to warm-up muscles. Perform some simple stretches beforehand to reduce the risk of injury.

WHEN CARRYING A LARGE OBJECT THAT RESTRICTS VIEW, ASK SOMEONE TO BE A GUIDE. THIS WILL PREVENT TRIPPING OR BUMPING INTO OBJECTS.

6.2.2 LIFTING TECHNIQUES – THIS DOES NOT APPLY TO BAGS	
BEND YOUR KNEES: Bend knees, not waist. This helps you keep centre of balance and lets the strong muscles of the legs do the lifting.	
HUG THE LOAD: Try to hug the object being lifting as close to the body as possible, as legs are gradually straightened to the standing position.	
AVOID TWISTING: Twisting can overload the spine and lead to serious injury. Make sure feet, knees and torso are pointed in the same direction when lifting.	

THE SAFE WAY TO LIFT	TIPS TO REMEMBER
Before you lift anything, think about it. Ask yourself: • "Can I lift it alone?" • "Do I need mechanical help e.g. forklift?" • "Is it too awkward for one person to handle?" • "Should I ask a co-worker for help?"	In addition to the above techniques, remember to make sure that your footing is firm before starting and that the path is clear. Also, be sure to use the same techniques when the load is set down. It takes no more time to do a safe lift than to do an unsafe lift, so play it safe and lift correctly.

7.5 Stacking and Packing Procedures

- When stacking or packing a space with HCRW containers/packaging, the idea is to secure the items so that they will not topple or fall and break, whether in transit or when stationary.
- Always stack broader-based containers/packaging at the bottom, with narrower-based containers/packaging above.
- Never stack higher than shoulder level or higher than the stack will allow for natural stability.

7.6 When in Doubt…

Do not attempt to lift and carry any HCRW containers that appear unsafe, i.e.:

- HCRW containers not closed off correctly.
- HCRW containers showing leakage or spillage.
- Protrusions or penetrations of sharps through HCRW containers.
- Broken HCRW containers.
- Overfull HCRW containers.
- Torn HCRW bags.
- Unusually heavy HCRW containers.
- Etc.

WHEN IN DOUBT, CONTACT THE DESIGNATED MANAGERIAL STAFF/IPC AND INFORM THEM IMMEDIATELY SO THAT THEY CAN INVESTIGATE, RECTIFY AND PREVENT FURTHER COMPROMISES IN SAFETY.

8. Records

1.

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

1. Attachment 1: Training Evaluation Checklist

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

12. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
4				

Attachment 1

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. What is the cardinal rule when handling HCRW?
2. When you carry a bag containing HCRW, you must hug it with both your arms. True / False?
3. When attempting to carry a relatively heavy box, it is advisable that you bend your knees and hug the load. True / False?
4. You can stack containers as high as possible to save space. True / False? Explain why you chose your answer.
5. If you find that a container / bag containing HCRW is leaking or there are sharps penetrating, for example, what action do you take?

I confirm that I have read and understand this procedure: _____

NAME **SIGNATURE** **DATE**

CARRIED OUT BY: _____ _____ _____

EVALUATED BY: _____ _____ _____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	003	**Waste Storage**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

To ensure that HCRW is correctly, safely and optimally stored, temporarily, in a health care facility so as to minimize or avoid any potential negative impacts on the environment or the people and animal life inhabiting it. This SOP offers a list of guidelines to assist in identifying and creating an optimal HCRW storage site at the facility – in line with relevant standards and laws.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE.

	• Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and program waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.

Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.

Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
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Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*

Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Examples: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department

PVC	Polyvinyl Chloride
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure
WSS	Waste Storage Site

6. References

1 Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Recommended Criteria for a Health Care Facility Waste Storage Site (WSS)

- The Health Care Risk WSS shall be **clearly demarcated**.
- The WSS has to have **sufficient capacity** to store all waste according to the facility's unique waste generation profile (in line with agreed collection schedules), and for temporary stockpiling during a strike or other unforeseen emergency situation.
- **Collection frequency** should be negotiated and in keeping with a turnaround time that does not leave HCRW stored for any prolonged period. Please refer to WHO storage guidelines as follows:

UNLESS A REFRIGERATED STORAGE ROOM IS AVAILABLE, STORAGE TIMES FOR HEALTH CARE WASTE (I.E. THE DELAY BETWEEN PRODUCTION AND TREATMENT) SHOULD NOT EXCEED THE FOLLOWING:

Climate	Time Limits
Temperate Climate	72 hours in Winter
	48 hours in Summer
Warm Climate	48 hours during the cool season
	24 hours during the hot season

NOTE:

CYTOTOXIC WASTE SHOULD BE STORED SEPARATELY FROM OTHER HEALTH CARE WASTE IN A DESIGNATED SECURE

LOCATION.

RADIOACTIVE WASTE SHOULD BE STORED IN CONTAINERS THAT PREVENT DISPERSION, BEHIND LEAD SHIELDING. WASTE THAT IS TO BE STORED DURING RADIOACTIVE DECAY SHOULD BE LABELED WITH THE TYPE OF RADIONUCLIDE, THE DATE, AND DETAILS OF REQUIRED STORAGE CONDITIONS.

SANS10248 (The South African National Standard on the Management of Healthcare Waste from Healthcare Facilities) presents their recommendations a little more explicitly and as follows:

Waste[a]	Time Limits
Anatomical / Pathological[b]	24 hours
Infectious[b]	72 hours
Sharps Container	30 days
Pharmaceutical	90 days

[a]*Containers shall be sealed.*

[b]*The waste may be stored at -2°C for 90 days.*

- It should be a **sheltered enclosure** to protect it from sun, rain and other elements.
- It should be **well ventilated** in order to maintain the lowest possible ambient temperature possible and combat the potential of odor nuisance and accelerated decomposition.
- The **floor of the WSS should be impermeable, slip-resistant and hard standing** to facilitate easy cleaning.
- The WSS should be **suitably equipped with a proximal water source** to facilitate cleaning, as well as **good drainage**, which connects to the sewer if reasonably practicable.
- The WSS should be **well lit**.
- This WSS enclosure should boast a **lockable door to prevent access** by children and unauthorized persons as well as scavenging animals or birds. Storage areas may be secured by use of locks on entry doors, gates, and/or receptacle lids.
- It should be **convenient and easy to use and accessible** at all times to waste collection vehicles.
- The WSS should be in a location where there is **low public presence/passage**.
- It should **be equipped with a fire extinguisher**.
- A staff member to whom the duty of managing and maintaining the WSS is allocated should be suitably equipped with the necessary PPE (Personal Protective Equipment), which should include:

gumboots, work uniform, elbow length PVC gloves (or similar alternative), mask, protective eye goggles, and an apron.

8. Recommended Signage:

9. Guidelines for Cleaning & Maintaining your Waste Storage Site (WSS):

- Cleaning of your WSS should be scheduled after a waste collection, when the WSS is empty.
- The person responsible for cleaning the WSS should wear his/her PPE during all cleaning.
- Use a suitable detergent (soapy, cleaning product) and brushes to scrub the area down. (Cleaning and disinfection can be achieved using any product from an extensive range available on the market – remember to use the chosen product as directed by the manufacturer for optimum results.) Refer to appropriate SOP for the Decontamination of General Surfaces.
- After thorough cleaning, rinsing is an equally important second step – to rinse off the dirt you have lifted together with the soapy cleaning product residues.
- Ventilate the area maximally to speed up drying so that the storage site/enclosure is as dry as possible before you stack new waste containers in it.
- Get it right from the beginning! If waste segregation at source is sound, and containers are used and closed off correctly (and not overfilled!) your risk of spillage will be largely reduced and your WSS should, therefore, not accumulate too much filth in the first place.

10. Guidelines for Stacking / Packing HCRW into a HCRW WSS

- It is at this stage that the designated person populating the HCRW WSS for temporary storage of HCRW ensures that no rigid plastic containers or bags are more than ¾ full (not overfull), closed off securely, and that sound waste segregation has been implemented (i.e. no needles sticking out of red bags, etc.).
- Donning the correct PPE, always stack / pack things carefully and cleverly, to prevent toppling and concomitant breakage spillage.
- Donning the correct PPE, always stack / pack things in such a way that they are easily and safely retrievable by the team who collects them to take them away for treatment / disposal.
- Broader-based containers at the bottom, with narrower-based containers above. It is recommended not to stack higher than shoulder height. Always test the stability of a stacked tower before leaving it or adding to it.

11. Records

12. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

13. Documents

1. Attachment 1: Training Evaluation Checklist

14. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

15. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				

3				
4				

Attachment 1

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

6. Should the HCRW Storage area be lockable and inaccessible by unauthorized persons? Yes / No

7. Should there be a sign on the waste storage area?

8. There needs to be a fire extinguisher near or just outside the HCRW storage area. Yes / No.

9. A HCRW waste storage area should be kept clean and well maintained. The person cleaning the room should always wear the correct PPE. Please list the PPE that should be worn.

10. Fill in the gaps: HCRW containers or bags should never be more than _____ full, and should be closed off and sealed_____.

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	004	**On-Site Transport**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

To ensure the correct and safe transport of HCRW from point of generation to the facility's temporary waste storage site, minimizing potential risk to all the people in the chain.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.

Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
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	Examples: nurses; doctors; phlebotomists; dentists; etc.
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Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
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Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Examples: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical.

	Examples: accounts / finance; stores; biomed; maintenance.

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Procedure

7.1 Collection

Collections of HCRW within a health care facility should we be well planned and managed. The facility's waste management plan should include a detailed schedule for the collection of the waste generated at source. The schedule should include, but not necessarily be limited to, the following information:

- A list that identifies the waste source (e.g. unit, ward, department, etc.)
- A plan that shows the location of the waste source in relation to the facility's temporary waste storage site (refer to SOP-MoH-HCWM-003), where applicable.

- The name of the responsible person for each shift at the temporary waste storage site, where applicable.
- A list that outlines the categories of waste that is likely to be generated at each source.
- A clearly delineated route plan to be followed by the responsible person(s) collecting the waste from source and transporting it to the facility's temporary waste storage site.
- A timed collection schedule in line with minimum prescribed storage times for the relevant streams of waste, so that waste streams are not mixed and adhere to a turnaround time that avoids negative repercussions.

The person responsible for managing the facility's temporary HCRW storage site (the waste management officer) shall ensure the execution of the system in accordance with the waste management plan. This person must also ensure that all necessary consignment forms are correctly and thoroughly filled in and appropriately filed for safekeeping.

7.2 Transport

HCRW may be transported from source location (e.g. ward, unit, etc.) to the facility's temporary HCRW storage site (on-site transport) by way of wheelbarrows, trolleys, wheelie-bins, or other wheeled containers or carts that are not used for any other purpose within the health care facility.

The equipment used for the on-site transportation of HCRW should meet the following minimum requirements:

- Easy to load and unload;
- Free of sharp edges that could damage or perforate or tear waste bags during loading and unloading;
- Easy to clean and disinfect as needed (records should be kept of this activity);
- Have confines or side-walls or barriers to hold and safely enclose the waste containers during transport to prevent toppling or falling and hence breakage and possible spillage;
- Be properly maintained and replaced when necessary.

7.3 Off-site Transport

In the case of a facility contracting an independent contractor for transport of waste off-site, refer to SEA (Swaziland Environmental Authority) on compliance requirements for vehicles and drivers of vehicles transporting dangerous goods.

8. Records

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

1. Attachment 1: Training Evaluation Checklist

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

12. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
4				

Attachment 1

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. Who is responsible for transporting the waste generated at source to the temporary waste storage site?
2. A facility can use a wheelie bin for transporting waste on-site, Yes / No?
3. Wheeled equipment used to transport waste on-site must have barriers to keep the collected packaged waste safely contained and still during transport. Yes / No?
4. Wheeled equipment used to transport waste on-site doesn't need to be regularly cleaned because the waste is already contained – they only need to be cleaned if there is a spill. Yes / No?
5. The person responsible for collecting the waste from the wards / departments must collect waste even if it is not properly closed, overfull, in the wrong packaging, and showing signs of leakage. Yes / No?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	005	**Waste Quantification**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document provides processes for quantifying health care risk waste generated for the purposes of control, monitoring and statistical capture for analysis. Weight in kilograms is the most common metric used for waste quantification, and the use of scales to weigh waste is also addressed in brief.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.

Support Staff	• Know how to operate, calibrate and maintain scales used for weighing waste correctly. • Know how to fill in the Waste Log Sheet correctly. • Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Ensure that person(s) responsible for waste quantification are suitably competent to weigh and record the waste accordingly.

4. Definitions

Term	Definition
Anatomical Waste/Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.

Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic/genotoxic waste and radioactive waste.*
Color-coding System	A system for relating the contents of packaging / containers by using different colors.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.

Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.

Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Quantification	Express or measure the quantity of.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Examples: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency

	than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Procedure

As stated in the guidelines, the quantification of waste is necessary for budgetary and logistical projections. A metric is needed for statistical capture and comparisons. Furthermore, and especially if

contractors are used for various functions such as waste transport off-site and/or treatment and disposal, most billing schemes are based on weight in kilograms.

7.1 Recording

It is the responsibility of the HCF to record daily waste volumes. The daily record should include, at least, the following:

- Source / Generator of waste (ward, unit, department);
- Quantity of containers;
- Capacity/volume of containers;
- Weight in kg;
- Categorization (waste stream);
- Date of collection from the source;
- Place for signature of responsible person – to clinch accountability.

Refer to Attachment 2 for an example of two Daily Waste Log Sheets assisting with waste quantification for all the streams of Health Care Risk Waste. Waste log sheets are preferably serialized for tracking and traceability of documents.

7.2 Weighing

- Scales are used to determine weights and come in different forms (hanging, platform, etc.). Platform scales are recommended as they can weigh bags and containers, whereas hanging ones can't weigh a container if it doesn't have a handle.
- Scales should always be calibrated so that weights are accurate. Calibrations should be executed daily, and should be periodically calibrated by a certified third party to ensure consistent and accurate operation of the scale.
- When temporary storage vessels or reusable containers are used, the scale should be zeroed to exclude the weight of the container such that it only reflects the weight of the actual waste being treated or disposed of.
- Attach the User's Guide or Operating Manual for the scale you have procured for this purpose to this SOP.

8. Records

2

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

2. Attachment 1: Training Evaluation Checklist
3. Attachment 2: Daily Waste Log Sheet Examples

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

12. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
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Attachment 1

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. Do you need to record where the waste came from as well? Yes / No?
2. Waste is quantified in terms of _____. Fill in the gap.
3. The scale you use to weigh waste should only be used for that purpose. Yes / No?
4. Scales should be calibrated every 5 years or so. Yes / No?
5. Who should be signing off the waste log sheet once the weights have been captured?

I confirm that I have read and understand this procedure: _____

NAME **SIGNATURE** **DATE**

CARRIED OUT BY: _____ _____ _____

EVALUATED BY:_____ _____ _____

SUCCESSFUL: YES/NO

Attachment 2:

Waste Log Sheet for Main Streams that go for Incineration / Burning (Infectious, Sharps, Anatomical/Pathological)

Name of Health Care Facility / Institution:

Are you a Hospital / Health Centre / Clinic? Circle the correct one.

	Waste Stream	Source / Origin	Container Description (packaging)	Capacity / Volume of Container	Quantity of Containers	Total Weight (in kg)	Date	Person who weighed / captured.
	Infectious (non-sharps); Sharps; Anatomical / Pathological	*(Where did the waste come from? Outpatients? Maternity Ward?)*	*(Red bag, sharps container, Red Specibin, etc)*	*(140 litre red bag, 25 litre red specibin, 5 litre sharps container, etc)*	*1, 2, 3, etc.*		*(Date weighed, captured and removed from site to go for burning or incineration - dd/mm/yyyy)*	*(Name and Surname - clearly put)*
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								

NOTE: Specibins / rigid plastic containers routed for incineration are ideally made of polypropylene.

NOTE: Label all containers correctly to reflect the contents. Make sure they are well-sealed.

NOTE: Ensure that your scale is calibrated for accurate weights.

Waste Log Sheet for Other Streams which get stockpiled until further direction

Name of Health Care Facility / Institution:

Are you a Hospital / Health Centre / Clinic? Circle the correct one.

	Contents of Container	**Source / Origin**	**Qty of Items**	**Container / Description**	**Capacity / Volume of Container**	**Waste Classification**	**Physical Nature**	**Total Weight (kg)**	**Date**	**Person who weighed / captured**	**Notes**
		Unit / Department: Outpatients; Maternity Ward, Lab, etc.		*Green Bag; Green Specibin; Black Bag; Cardboard Box; etc.*		*C=Chemical; P=Pharmaceutical; CG=Cytotoxic / Genotoxic; R=Radioactive; PC=Pressurized Containers*	*S=Solid; L=Liquid; G=Gas*		*Date weighed and removed from site / captured / put into storage - dd/mm/yyyy.*		
E.g.	*Ranmoxy 500 capsules (brown / yellow) Exp: 06/2012 popped out of blister packs*	*Pharmacy*	*5000*	*Green Bag*	*40 litres*	*P*	*S*	*4.5*	*24/10/2012*	*Joe Soap*	*Capsules removed from foiled blister packs with latter sent to general waste.*
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											

NOTE: Specibins / rigid plastic containers routed for incineration are ideally made of polypropylene.

NOTE: Label all containers correctly to reflect the contents. Make sure they are well-sealed.

Section:	Number:	Title:	Revision:
MOH-HCWM	006	**Decontamination of General Surfaces**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document describes methods for the preparation of sodium hypochlorite solution and decontamination procedures for general surfaces.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure

	sound stock control.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location. • Properly prepare cleaning solutions.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products as well as decontamination products and equipment. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and program waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and

	treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or

	animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.

Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Example: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups.

	Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
MSDS	Materials Safety Data Sheet
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. ANSI/AAMI ST79: 2010 & A1:2010 & A2:2011 *Comprehensive guide to steam sterilization and sterility assurance in health care facilities.*

7. Equipment and PPE Requirements

The following is recommended equipment and PPE required to perform this procedure.

Name
Equipment
10 litre Bucket
Instrument Brush with Nylon Bristles
Mixing Spoon with long handle
Sodium Hypochlorite (Commercial Grade household Sodium Hypochlorite) - example is Jik.
Litre Measuring Cup / Jug
Cloth Towels
PPE (per person)
Elbow Length Utility Gloves
Face Shield or Goggles with Mask
Heavy Plastic Apron
Rubber Gum Boots

8. Procedure

8.1. Mixing of Sodium Hypochlorite Solution

1) Wear required PPE (refer to section 7 above) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields).
2) Determine the percentage of active sodium hypochlorite in the commercial grade sodium hypochlorite solution by reading the active ingredients on the label of the bottle. (Note: sodium hypochlorite concentrations can range from approximately 1% to 10% strength).
3) Using the tables found attached to this document to determine the correct amount of sodium hypochlorite and room temperature water required to mix the appropriate solution.

Example: A 10 L bucket should ONLY hold 5 L of the mixed sodium hypochlorite solution. (Table: 4.55 L of water and 450 mL of sodium hypochlorite equals 5 L of solution for a concentration of 3-5%).

Using the appropriate concentrations for the bucket size, carefully pour the water and THEN the required amount of sodium hypochlorite into the bucket. Use the mixing spoon to gently mix the solution.

Note: The sodium hypochlorite solution should not be reused and a new solution must be made for every cleaning cycle. The solution should also be replaced if it becomes visibly contaminated.

WARNING: Avoid skin and eye contact. Solution may sensitize and may cause skin irritation. This solution is extremely corrosive and harmful if swallowed.

If the solution comes into contact with skin, flush thoroughly with water for 3 minutes. If the solution comes into contact with the eyes, flush with water immediately for 3 minutes and then seek medical attention.

Each chemical product is or should be issued with an MSDS, which relates all hazard information, etc.

8.2 Disposal of Sodium Hypochlorite Solution

To properly dispose of the sodium hypochlorite solution, dilute the solution by adding water to the top of the bucket and then pour the contents of the bucket into an approved waste disposal site or down a drain. This practice reduces pollution risk to the environment.

8.3 Decontamination of General Surfaces

8.3.1 General considerations

For all reusable medical equipment, the most important step in decontamination is thorough cleaning and rinsing. Cleaning primarily removes rather than kills microorganisms. Effective cleaning is a multistep process that relies on several interdependent factors: the quality of the water; the quality, concentration, and type of sodium hypochlorite (or other chosen chemical cleaning product); an acceptable washing method; and proper rinsing and drying.

8.3.2 Process of Cleaning

1. Wear the required PPE (refer to section 7) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields).
2. Then follow process 8.1 ‘Mixing of Sodium Hypochlorite Solution’ and prepare a sodium hypochlorite rinse solution as well.

3. Dip a clean towel into the sodium hypochlorite solution Wring the towel to remove excess solution, and then wipe the contaminated surface to remove visible debris. Repeat as necessary until it looks clean.
4. If the cleaning solution becomes dirty while cleaning immediately discontinue use and mix a new batch of the sodium hypochlorite rinse solution.
5. **Allow the surface to air dry and then wipe** the surface down with a clean wet towel to remove any excess sodium hypochlorite and/or sodium salts.
6. To properly dispose of the sodium hypochlorite solution, dilute the solution by adding water to the top of the bucket and then pour the contents of the bucket down a drain or at a waste disposal site. This practice reduces pollution risk to the environment.

9. Records

3

10. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

11. Documents

1. Attachment 1: Sodium Hypochlorite Concentration Table
2. Attachment 2: Training Evaluation Checklist

12. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

13. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
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Attachment 1: Sodium Hypochlorite Concentration Tables

Sodium Hypochlorite Concentration (3-5%)				
Total Volume of Bucket/Container	**Amount of Water**	**Amount of Water**	**Amount of Sodium Hypochlorite**	**Amount of Sodium Hypochlorite**
Litres (L)	**Litres (L)**	**Millilitres (ML)**	**Litres (L)**	**Millilitres (ML)**
1	0.91	910	0.09	90
2	1.82	1820	0.18	180
3	2.73	2730	0.27	270
4	3.64	3640	0.36	360
5	4.55	4550	0.45	450
6	5.46	5460	0.54	540
7	6.37	6370	0.63	630
8	7.28	7280	0.72	720
9	8.19	8190	0.81	810
10	9.1	9100	0.9	900

Sodium Hypochlorite Concentration (6-10%)				
Total Volume of Bucket/Container	**Amount of Water**	**Amount of Water**	**Amount of Sodium Hypochlorite**	**Amount of Sodium Hypochlorite**
Litres (L)	**Litres (L)**	**Millilitres (ML)**	**Litres (L)**	**Millilitres (ML)**
1	0.96	960	0.04	40
2	1.92	1920	0.08	80
3	2.88	2880	0.12	120
4	3.84	3840	0.16	160
5	4.8	4800	0.2	200
6	5.76	5760	0.24	240
7	6.72	6720	0.28	280
8	7.68	7680	0.32	320
9	8.64	8640	0.36	360
10	9.6	9600	0.4	400

Attachment 2

TRAINING EVALUATION CHECKLIST

Questions on SOP's content (Yes/No, multiple choices or open-ended questions):

11. If you have a 10 Litre bucket what is the proper amount of sodium hypochlorite and water need to make the sodium hypochlorite solution?

12. What is the proper PPE to be worn?

13. How often should you replace the sodium hypochlorite solution?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	007	**Spillage Management**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document describes methods for the preparation of sodium hypochlorite solution, and procedures for managing spillages.

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Notify Support Staff of any spills.

	• Ensure that spillages are swiftly attended to and dealt with efficiently. • Log a spill through your incident management system.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location. • Properly prepare cleaning solutions. • Properly manage spills.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products as well as decontamination products and equipment. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full. • Mount spill kits at critical locations.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers.

Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.).*
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.

Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.

Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Example: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups.

	Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
MSDS	Materials Safety Data Sheet
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. ANSI/AAMI ST79:2010 & A1:2010 & A2:2011 Comprehensive guide to steam sterilization and sterility assurance in health care facilities.
2. Kingdom of Swaziland, Ministry of Health. National Health Care Waste Management Guidelines, February 2013.

7. Equipment and PPE Requirements

The following is recommended equipment and PPE required to perform this procedure.

Name
Equipment
10 litre Bucket
Instrument Brush with Nylon Bristles
Mixing Spoon with long handle
Sodium Hypochlorite (Commercial Grade household sodium hypochlorite) - example is Jik.
Litre Measuring Cup / Jug
Cloth Towels
PPE (per person)
Elbow Length Utility Gloves
Face Shield or Goggles with Mask
Heavy Plastic Apron
Rubber Gum Boots

8. Procedure

8.1. Mixing of Sodium Hypochlorite Solution

1) Wear required PPE (refer to section 7 above) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields).
2) Determine the percentage of active sodium hypochlorite in the commercial grade sodium hypochlorite solution by reading the active ingredients on the label of the bottle. (Note: sodium hypochlorite concentrations can range from approximately 1% to 10% strength).
3) Using the tables found attached to this document to determine the correct amount of sodium hypochlorite and room temperature water required to mix the appropriate solution.

Example: A 10 L bucket should ONLY hold 5 L of the mixed sodium hypochlorite solution. (Table: 4.55 L of water and 450 mL of sodium hypochlorite equals 5 L of solution for a concentration of 3-5%).

Using the appropriate concentrations for the bucket size, carefully pour the water and THEN the required amount of sodium hypochlorite into the bucket. Use the mixing spoon to gently mix the solution.

Note: The sodium hypochlorite solution should not be reused and a new solution must be made for every cleaning cycle. The solution should also be replaced if it becomes visibly contaminated.

WARNING: Avoid skin and eye contact. Solution may sensitize and may cause skin irritation. This solution is extremely corrosive and harmful if swallowed.

If the solution comes into contact with skin, flush thoroughly with water for 3 minutes. If the solution comes into contact with the eyes, flush with water immediately for 3 minutes and then seek medical attention.

Each chemical product is or should be issued with an MSDS, which relates all hazard information, etc.

8.2 Disposal of Sodium Hypochlorite Solution

To properly dispose of the sodium hypochlorite solution, dilute the solution by adding water to the top of the bucket and then pour the contents of the bucket into an approved waste disposal site or down a drain. This practice reduces pollution risk to the environment. .

8.3 Spillage of Health Care Risk Waste

In the event of a HCRW spillage, whether it is due to a torn bag or a broken seal, the Managerial Staff/ Infection Prevention Control Committee must be informed. The origin of the waste must be determined before the clean-up can begin. Responsibility for clearance of the spillage must be delegated and only carried out by persons trained in the correct procedures, e.g. cleaning of bodily fluids and sharps. The Support Staff are responsible for dealing with the management of spills at health care facilities and for completing the Incident Injury Report Form (Refer to SOP-MoH-HCWM-010 Worker Health and Safety).

8.3.1 Spillage of Infectious Waste – DRY SPILL

1. Clear the spillage area of people and equipment then put on the required PPE (refer to section 7 above) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields). A long-handled dustpan/shovel and brush should be used to gather the spilt materials to minimize contact / exposure.
2. Sweep the material into the dustpan and carefully place the waste into a new RED bag.
3. Once the bag is ¾ full, tie the bag off using the double knot tying method or use a cable-tie and immediately place the waste into the secured HCRW storage area.
4. After the dry infectious waste has been removed from the surface, follow the procedure in SOP-MoH-HCWM-006 Decontamination of General Surfaces, to decontaminate the surface that came into contact with the spilt material.
5. The dust pan/shovel and brush used to clear the waste must also be decontaminated in a sodium hypochlorite cleaning solution after clean-up is complete. If the solution used in step 4 appears dirty, a new solution must be made to decontaminate these items.
6. Dispose of or decontaminate all PPE and equipment used for the spill clean-up.

8.3.2 Spillage of sharps – SHARPS SPILL

1. ***Never pick up sharps by hand*.** Clear the spillage area of people and equipment then put on the required PPE (refer to section 7) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shield). A long-handled dustpan/shovel and brush should be used to gather the spilt materials to minimize contact / exposure.
2. Sweep the material into the dustpan and carefully place the gathered material into a new sharps container.
3. Small quantities of sharps may be picked up using disposable forceps/tweezers.
4. After the sharps have been removed from the surface, follow procedure SOP-MoH-HCWM-006 Decontamination of General Surfaces, to decontaminate the surface that came into contact with the spilt sharps.
5. The dust pan/shovel and brush used to clear the waste must also be decontaminated in a sodium hypochlorite cleaning solution after clean-up is complete. If the solution used in step 4 appears dirty, a new solution must be made to decontaminate these items.
6. Dispose of or decontaminate all PPE and equipment used for the spill clean-up.

8.3.3 Spillage of blood and bodily fluids – WET SPILL

1. Clear the spillage area of people and equipment then put on the required PPE (refer to section 7) including reusable utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields).
2. Cover the spill with paper towels (or suitable absorbent material alternative) to soak up blood or bodily fluids.

3. After approximately 5 minutes, collect the paper towels and place them carefully into a new RED infectious waste bag.
4. Continue to carefully wipe the surface until all blood and/or body fluids have been visibly removed from the surface and place cloths / paper towels / absorbent material into a RED infectious waste bag. Once done, ensuring that bag is no more than ¾ full, securely tie off the bag with a cable tie or secure double knot. Follow procedure SOP-MoH-HCWM-006 Decontamination of General Surfaces, to decontaminate the surface that came into contact with the blood and/or bodily fluids.
5. Immediately after the cleaning process is complete, place the tied-off RED infectious waste bags into the secured HCRW storage area.
6. Dispose of or decontaminate all PPE and equipment used for the spill clean-up.

8.3.4 Chemical Spillage

SINCE THERE ARE SEVERAL DIFFERENT KINDS OF CHEMICALS AVAILABLE ON THE MARKET, SOME COMPATIBLE WITH EACH OTHER AND OTHERS NOT, IT IS NEAR IMPOSSIBLE TO GIVE EXPLICIT GUIDELINES WITH REGARDS TO HANDLING CHEMICAL WASTE. IT REMAINS THE RESPONSIBILITY OF THE PERSON OR DEPARTMENT PROCURING SPECIFIC CHEMICALS FOR PARTICULAR FUNCTIONS TO ENSURE THAT THEY ACQUIRE A MSDS (MATERIALS SAFETY DATA SHEET) FOR EACH CHEMICAL FROM THE MANUFACTURER, SUPPLIER OR INTERNET, AND INVESTIGATE, EDUCATE AND DISPLAY HANDLING AND SPILL MANAGEMENT PROCEDURES ACCORDINGLY.

Example: Procedures for the management of hydrochloric acid

1. Evacuate the area and inform the Managerial Staff/ Infection Prevention Control immediately.
2. Review the MSDS to determine the appropriate action to be taken.
3. Put on the required PPE as stated in the MSDS including utility gloves, apron, rubber boots, and face protection (goggles with mask or full-length face shields).
4. Open all windows and doors to ventilate area.
5. Neutralize with alkaline material (soda ash, lime).
6. Absorb with an inert material (e.g., vermiculite, dry sand and/or earth).
7. Place waste material in a dark green speci-bin and store according to SOP-MoH-HCWM-003 Waste Storage.
8. Dispose of or decontaminate / neutralize all reusable PPE and equipment used to clean up spill.

MSDS for hydrochloric acid states:

Spillage Management:

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer!

Disposal:

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements

Storage:

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.

9. Records

1

10. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

11. Documents

1. Attachment 1: Sodium Hypochlorite Dilution Tables
2. Attachment 2: Training Evaluation Checklist

12. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

13. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
4				

Attachment 1

Sodium Hypochlorite Concentration Table

Sodium Hypochlorite Concentration (3-5%)				
Total Volume of Bucket/Container	**Amount of Water**	**Amount of Water**	**Amount of Sodium Hypochlorite**	**Amount of Sodium Hypochlorite**
Litres (L)	**Litres (L)**	**Millilitres (ML)**	**Litres (L)**	**Millilitres (ML)**
1	0.91	910	0.09	90
2	1.82	1820	0.18	180
3	2.73	2730	0.27	270
4	3.64	3640	0.36	360

5	4.55	4550	0.45	450
6	5.46	5460	0.54	540
7	6.37	6370	0.63	630
8	7.28	7280	0.72	720
9	8.19	8190	0.81	810
10	9.1	9100	0.9	900

Sodium Hypochlorite Concentration (6-10%)				
Total Volume of Bucket/Container	**Amount of Water**	**Amount of Water**	**Amount of Sodium Hypochlorite**	**Amount of Sodium Hypochlorite**
Litres (L)	**Litres (L)**	**Millilitres (ML)**	**Litres (L)**	**Millilitres (ML)**
1	0.96	960	0.04	40
2	1.92	1920	0.08	80
3	2.88	2880	0.12	120
4	3.84	3840	0.16	160
5	4.8	4800	0.2	200
6	5.76	5760	0.24	240
7	6.72	6720	0.28	280
8	7.68	7680	0.32	320
9	8.64	8640	0.36	360
10	9.6	9600	0.4	400

Attachment 2

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. If you have a 10 Liter bucket what is the proper amount of sodium hypochlorite and water need to make the sodium hypochlorite solution?

2. Describe the proper method for cleaning up a blood spill?

3. What is the proper PPE for cleaning up a spill?

4. How often should you replace the sodium hypochlorite solution?

5. Explain the proper procedure for managing a chemical spill?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	008	**Mercury Waste Management**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

To ensure that Mercury Waste and Mercury Spillage are managed correctly.

1.1 Dangers of Mercury (a.k.a. quicksilver)

Mercury is toxic, and can affect adults, children, and the unborn baby. Mercury volatilizes at room temperature; which means it gives off vapours that are often unseen in normal lighting conditions.

Mercury is an element which bio-accumulates, bio-magnifies, and cannot be destroyed. It is considered a 'special waste' and therefore warrants special handling, storage and final disposal procedures.

Visit www.mercuryfreehealthcare.org for more information.

1.2 Sources of Mercury Contamination

Predominant sources of mercury contamination in hospitals are broken thermometers and sphygmomanometers and fluorescent tubes. Thermometer breakages occur mainly in ward areas, and therefore the people most likely to be exposed to mercury vapour are the nursing staff, patients and cleaners, whose equipment often comes into contact with the spilled mercury.

Another source of mercury exposure and possible spillage occurs in the hospital's instrument repair workshop where the instrument technicians carry out maintenance and repair work of the sphygmomanometers.

1.3 Phase-out of Mercury Devices

It is a fallacy that your mercury-free alternatives / devices are less accurate. All equipment, including mercury devices, need sound calibration and maintenance management. If you look after your equipment, it will look after you. Globally, the phasing out of mercury-containing devices in health care facilities is well underway and should be imposed at the level of procurement

2. Scope

Health care risk waste generated from health care facilities can pose risks to patients, health care workers and visitors and / or the environment when handled, packaged, and/or disposed of inappropriately. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines.

	• Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers.
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal.

	Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.
Contaminated	State of having been actually or potentially in contact with a contaminant. Examples: pollutant, radioactivity, chemical, blood, etc.
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical*

	waste.
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care

	facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
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Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: Cleaners; Orderlies; Housekeepers; Groundsmen; Drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control

PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

2. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Procedure

7.1 MERCURY SPILL KIT

It is recommended that each facility have at least 2-3 Mercury Spill Clean-up Kits available.

A spill kit should be kept at a **convenient** and **accessible** place. A member of staff should have the **responsibility for the spill kit** and ensuring that the kit is always kept fully stocked.

The spill kit can also be readily produced using some of the materials found in the hospital and purchasing other items as required. **Make a checklist of all the items kept in the Spill Kit** (refer to Attachment 2 for a suggested inventory).

The spill kit should contain the following items as a minimum:

- *Equipment to pick-up visible mercury droplets* (e.g. an aspirator with a narrow tipped tube, a hand-held pasteur (dropping) pipette, a syringe without needle, an eye-dropper or strips of adhesive tape)
- *Torch or Flashlight* to optimize visibility of escaped mercury beads in obscure places.
- *Containers, which can be closed tightly,* for the storage of collected mercury droplets (e.g. hard plastic container with a screw-cap lid – plastic is preferred because is cannot break if dropped or is knocked over).
- *Labels and/or black permanent marker,* for labeling containers / bags.
- *Personal protective equipment* (e.g. disposable gloves, shoe protectors if spillage in ward area, laboratory coat, chemical goggles, mask.)
- *A "caution sign"* (if in ward area), or *biohazardous tape*, to visibly cordon off area.

- **IMPORTANT:** Evidence in the literature shows that removing mercury out of carpets is almost impossible. Carpets also diffuse mercury vapours more extensively. Therefore, the use of a carpet is not recommended in areas where mercury is used.

- *Self sealing (or zip-lock) plastic bags* (for disposal of broken thermometer/ sphygmomanometer column, gloves and any other disposable equipment used in the cleanup process)
- *"User log" sheets*, to be completed after a mercury spill. The form could include the following headings: *"date and time"; location where spill occurred"; type of equipment involved in the spill"; name of person performing cleanup" (see Attachment 1 below).*

7.2 MERCURY SPILL CLEANUP PROCEDURE

(Broken thermometers/repair maintenance of sphygmomanometer)

1. Isolate the area of the spill, and visibly so – and evacuate accordingly.
2. Retrieve the **Mercury Spill Kit**.
3. Put on protective clothing (disposable gloves, safety glasses, mask, etc.)
4. Place any broken glass (i.e. broken thermometers or glass sphygmomanometer columns) into a heavy-duty self-sealing (or zip-lock) plastic bag. The bag must be clearly marked to indicate that the contents are contaminated with mercury.
5. Collect all visible droplets of mercury using one of the following methods:
    a. An aspirator with a narrow tipped tube
    b. A syringe (without needle)
    c. A Pasteur pipette and a rubber bulb
    d. Strips of adhesive tape.
6. Place collected mercury in a glass or hard plastic jar (containing sufficient water to cover the mercury) and secure lid (in the hospital environment, hard plastic is preferred as it is not breakable).
7. Use cardboard sheets or masking tape to capture any further escaped beads, using your torch for optimal visibility.
8. Place all cleaning aids, used in the cleanup process, disposable gloves, etc, into a self-sealing plastic bag and label accordingly.
9. Make arrangements with responsible person with regard to disposal procedures of mercury waste.
10. Wash protective visors with liquid soap and warm water and dry with paper towel before returning to Mercury Spill Kit.
11. Wash hands thoroughly with soap and warm water on completion of procedure.
12. Complete the required details in the logbook / control sheet located with the Mercury Spill Kit (refer to Attachment 1).
13. Return the Mercury Spill Kit to the responsible person.
14. Ensure replacement of any used items in the Spill Kit

7.3 RECOMMENDATIONS

The Regulations state that the prevention or control of hazardous substances should be implemented in accordance with the *hierarchy of controls*. The hierarchy of controls is a list of measures, in priority order, that can be used to eliminate or minimize exposure to hazardous substances. Application of the

hierarchy of control measures involves firstly assessing whether a hazardous substance can be eliminated. If this is not practicable, substitution should be considered. Following this, consideration should be given to each of the other control measures; isolation, engineering controls, administrative controls and personal protective equipment.

Upon observation of the work procedures involving mercury and consideration of the hierarchy of control measures, the following recommendations should be undertaken to minimize exposure to mercury vapour:

7.3.1 Substitution

The preferred option is the substitution of mercury-based thermometers with digital or mercury-free thermometers (e.g. spirit-filled). The mercury-based sphygmomanometers could also be replaced with aneroid or digital ones.

Considering the following benefits may offset the extra cost:

- Elimination of the mercury hazard
- Elimination of cleanup costs
- Elimination of staff training
- Elimination of disruption of normal services due to spills
- Elimination of high disposal costs of mercury (special disposal)

This option should be strongly considered, particularly in view of mercury alternatives becoming readily available and more affordable. The management should develop a plan to phase out mercury thermometers and sphygmomanometers over a defined period of time.

7.3.2 Safe Work Procedure

While mercury continues being used (replacement of items with mercury-free products could take some time), the hospital must develop a policy outlining management responsibilities, procedures for working safely with mercury, mercury cleanup and disposal, recording information and staff training.

7.3.3 Mercury Decontamination

The objective of effective and efficient decontamination of surfaces and objects is to minimize the area that needs to be decontaminated. This is achieved by eliminating the through-traffic and carriage of mercury to other areas and by having a suitable procedure and mercury spill kit to carry out the actual decontamination.

7.3.4 Training

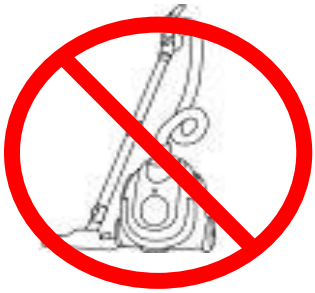
Staff involved with working or using mercury equipment or involved in mercury cleanup procedures must be provided with adequate information and training on the health effects of mercury, legislative responsibilities and safe work procedures.

7.3.5 Ventilation

If local exhaust ventilation is used during the maintenance/repair of sphygmomanometers, ensure that it is located as close as possible to the working tray such that it draws air away from the operator's breathing zone and is removed to the outside air.

7.3.6 Use of Vacuum Cleaners

It is strongly recommended that ordinary vacuum cleaners must **not** be used to clean up a mercury spill. The mercury will go through the collection bag into the hot motor housing releasing mercury vapour into the air and therefore increasing the likelihood of personal exposure. The contaminated vacuum cleaner would have to be disposed of properly with the spilled mercury.



8. Records

2

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

1. Attachment 1: Mercury Spill Log Sheet (Suggested template)
2. Attachment 2: Mercury Spill Kit – Checklist
3. Attachment 3: Training Evaluation Checklist

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

11. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
4				

Attachment 1

Suggested Mercury Spill Log Sheet

Serial Code:	*001*
Hospital / Facility Name:	
Date:	
Time:	
Location where spill occurred:	
Type of Equipment involved in Spill:	
Name of Person Cleaning up:	
Amount of Mercury Waste collected:	
Signature of Responsible Person:	
Reported to Occupational Health & Safety Representative:	**Yes / No**

Attachment 2

Suggested Mercury Spill Kit – Checklist

Eyedropper (or syringe without needle) – to pick up the mercury Quantity: 4 x 300ml syringes **OR** 4 x eyedropper	
Hard plastic container with lid – to hold the mercury liquid. Quantity: 4 x 500ml plastic bottle with screw-top lid	
Tape (wide, duct, or masking) – to help pick up mercury beads. Quantity: 1 roll	
Plastic bags with zipper seal – to store mercury-contaminated debris and equipment. Quantity: 5-7 zip-lock bags	
Rubber / latex gloves – to protect hands from mercury contact. Quantity: 3 x pairs	

Mask – to protect against inhalation of mercury vapours. Quantity: 3	
Protective Visors – to protect against mercury vapours being absorbed. Quantity: 1	
Hard plastic drum – for consolidation of bulk mercury waste. Quantity & Suggestion: 1 x 20-30L Clean **'Dry' Drum for used zip-lock bags containing Mercury contaminated debris /containers /equipment**. 1 x 5=10L **Clean 'Wet' Drum for liquid mercury** only. This container should contain dry ice or enough water to cover the Mercury – as this reduces the vapour emission each time it is opened.	
Cardboard Sheets – for collecting mercury beads. Quantity: 5-10 A5 sheets	
Flashlight / torch – to help see the smaller mercury beads which may have escaped the mercury spill. Quantity: 1	

Black Marker and/or labels – for labeling bags and containers containing mercury or mercury contaminated waste.	
Control Sheets / Incident Report Book	To be designed by relevant Facility and in line with their internal policies and procedures.

Quick List Directions:

1. Remove everyone from area.
2. Cordon off area.
3. Retrieve Mercury Spill Kit.
4. Don PPE.
5. Carefully pick up any broken or sharp objects.
6. Locate visible mercury beads.
7. Collect mercury beads with an eyedropper or cardboard sheets.
8. Place all materials that were used, including gloves, in labeled zip-lock bags.
9. Fill in Mercury Spill Log book / Control Sheets and report to Occ. Health representative as per your internal policies and procedures.
10. Consolidate mercury and mercury contaminated waste into designated storage drums.
11. Remember to keep the area well ventilated to the outside for at least 24 hours.

Attachment 3

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. Can you use a vacuum cleaner to clean up a mercury spill? Yes / No?
2. Name 3 items, which one would find in a Mercury Spill Kit.
3. One can use tweezers to pick up mercury droplets that have escaped on the floor. Yes / No?
4. One doesn't have to use a mask when cleaning a Mercury Spill because there is no danger of inhaling it. Yes / No?
5. Must you report it to someone when there has been a Mercury Spill? Yes / No?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	009	**Waste Pit Management**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document describes methods for the construction and use of a Closed and Open pit for the treatment and disposal of HCW.

2. Scope

Health care risk waste generated at health care facilities can pose risks to patients, health care workers and visitors and/or the environment when handled, packaged, and /or disposed of improperly. Standards to control and minimize these risks are set forth in this document.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Ensure staff is properly trained on procedures. • Obtain and be familiar with national and programme waste management policies. • Enforce facility waste management plan (goal, budget, personnel, roles, supervision, training, reporting). • Budget for adequate supply of sharps containers, colored liners, posters on waste segregation, PPE, decontamination and other required supplies. • Advocate for health worker safety. • Contact the EHD to provide guidance on location of pits.
Clinical Staff	• Follow waste management policies. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system.

Support Staff	• Conducts the burning process in accordance to SOP. • Placing waste in the Closed Pit in accordance to SOP.
Technical Staff	• EHD to provide guidance on location • EHD provide training on the proper construction requirements to Technical Staff. • Train IPC and Support Staff on the proper procedures for the disposal of waste in pits. • Supervises the burning process
Infection Prevention Control Staff	• Train staff on procedures to be followed in the event of sharps injuries. • Obtain and be familiar with national and programme waste management policies. • Train staff on the proper procedures for the disposal of waste in pits. • Conduct quality audits and verify compliance with HCWM SOPs. • Advocate for health worker safety.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers.
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous.

	Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.
Color-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant. *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the

Waste	environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.

Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Example: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personnel Protective Equipment
MOH	Ministry of Health
MOH	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Procedure

In remote locations and rural areas, the safe treatment and disposal of HCW on the health care facility's premises may be the only viable option. However, certain rules need to be followed for proper HCW management. The Ministry of Health - Environmental Health Department is responsible for assessing and indicating a safe location for both an Open and/or Closed Pit.

7.1 Open Pit

7.1.2 The construction of an open pit:

This method of treatment and disposal is especially suitable for the disposal of untreated general waste and dry infectious waste. The following procedure is recommended for the safe construction of an open pit.

1. Digging a pit 1 to 2m wide and 2 to 5m deep,
2. Lining the bottom and walls of the pit with 0.1m thick concrete,

3. Constructing an earth mound around the mouth of the hole to prevent surface water from entering the pit and,
4. Constructing a fence or barrier around the area to keep out animals, scavengers and children.

7.1.3 Disposal procedures

The following procedure is recommended for the safe burning of waste within an open pit.

1. Put on the appropriate PPE including leather gloves, leather aprons, goggles, safety shoes and mask.
2. Carefully remove the pit's cover,
3. Carefully place non-sharp waste into the pit,
4. Sprinkle waste with fuel,
5. Carefully light using a lighting stick,
6. Monitor burning until fire runs out,
7. Cover pit

When the pit is about 50cm below the ground surface, cover the waste/ash with soil and permanently seal it with cement. While the preferred method of sealing is to use cement, another alternative is to embed a sheet of wire mesh within a final 50cm layer of soil cover.

7.2 Closed Pit

This method is especially suitable for the disposal of untreated used sharps and placentas.

7.2.1 The construction of a closed pit:

The following procedure is recommended for the safe burial of sharps and placentas through a closed pit (refer to attachment 1 for Closed Pit Design):

1. Dig a pit (minimum size of 1m x 1m x 1.8m), enough to accommodate sharps and placentas for an estimated period of time without reaching the ground water level. The site must be isolated and at least 30m away from the ground water supply sources and dwelling units,

2. Construct 0.1m thick concrete walls, bottom and slabs of the pit. Provide slab with an opening or manhole for easy deposition. The manhole should be extended a few centimeters above the soil surface to overcome infiltration of surface water, and

3. Install a security fence around the site.

7.2.2 Disposal procedures

The following procedure is recommended for the safe burning of waste within a closed pit.

1. Put on the appropriate PPE including leather gloves, leather aprons, goggles, safety shoes and mask.
2. Carefully remove the pit's cover,
3. Carefully place sharps and placenta waste into the pit and
4. Carefully place the cover back onto the pit,

When the pit is about 50 cm below the ground surface, cover the sharps and placenta waste with soil and permanently seal the pit with cement.

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8. Records

1

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

1. Attachment 1: Closed Pit Design
2. Attachment 2: Training Evaluation Checklist

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

12. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
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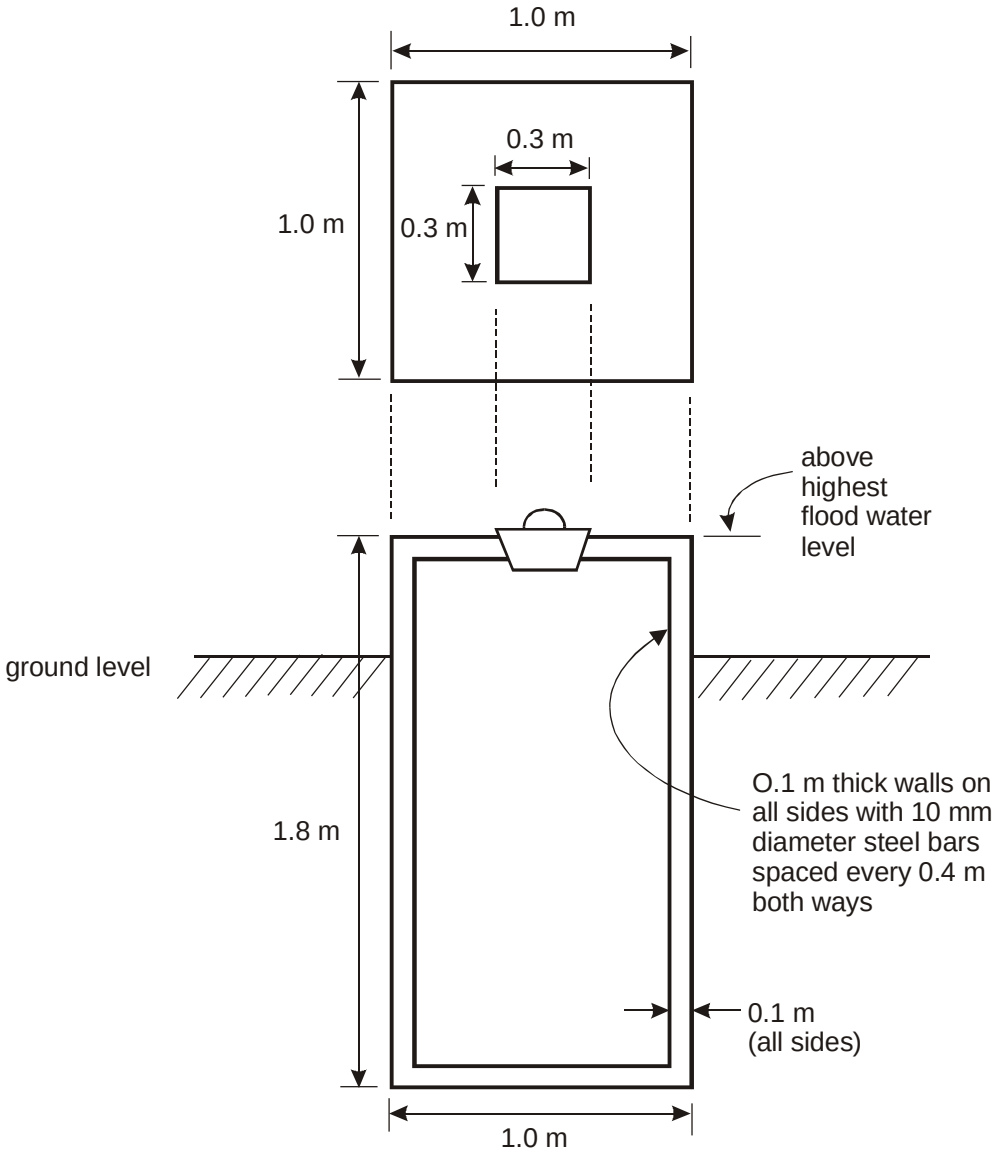
Attachment 1

Closed Pit Design



Attachment 2

TRAINING EVALUATION CHECKLIST

Questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. What department within the Ministry of Health is responsible for indicating the location for both a closed and open pit?

2. Explain the procedures for safe disposal of waste in an Open Pit?

3. Explain the procedures for safe disposal of waste in a Closed Pit?

4. Who is responsible ensure supplies?

5. Who is responsible for auditing and training?

I confirm that I have read and understand this procedure: _____

NAME **SIGNATURE** **DATE**

CARRIED OUT BY: _____ _____ _____

EVALUATED BY: _____ _____ _____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	010	**Worker Health & Safety**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

To ensure that all people in the HCWM chain, who at any point handle or come into contact with HCRW, are protected as much as possible by suitable prophylaxis, medical surveillance, and an efficient response to workplace injuries or accidents when they occur, avoiding recurrence as far as reasonably practicable.

2. Scope

The production, segregation, transportation, treatment, and disposal of health care risk waste involves the handling of potentially hazardous material. Protection against personal injury is therefore essential for all workers who are at risk. The individuals responsible for management of health-care waste should ensure that all risks are identified and that suitable protection from those risks is provided. The principles of worker health and safety best practice include but are not necessary limited to the following:

- Proper training of workers handling HCRW
- Provision of proper Personal Protective Equipment
- Establishment of an effective occupational health programme that includes immunization, post-exposure prophylactic treatment, and medical screening and surveillance.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures.

	• Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety. • Ensure that all relevant staff receive medicals and vaccinations prior to commencement of duties.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Ensure that all incidents / injuries are reported timeously and that the correct paperwork is filled out.
Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Ensure that Incident / Injury Reporting System is efficient and that corrective action is swift.

4. Definitions

Term	Definition

Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers.
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Examples: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant.

	Examples: pollutant, radioactivity, chemical, blood, etc.
Decontamination	Process or mode of action to reduce contamination to a safe level.
Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Examples: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Incident	Any unexpected or unplanned event that could or does result in loss.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.

Injury	Any wound, harm or hurt to the body, and includes occupational illnesses.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite,*

	which is sold widely.
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special packaging and/or handling. *Examples: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health

MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority
SOP	Standard Operating Procedure

6. References

1. Kingdom of Swaziland, Ministry of Health. *National Health Care Waste Management Guidelines,* February 2013.

7. Training

Workers handling HCRW should be appropriately trained in health and safety best practice. They should be well informed of all the potential risks posed by exposure to HCRW and all its streams, and understand both the value of immunization and the importance of consistently using the correct PPE and maintaining personal and hand hygiene. The importance of reporting incidents (which translate into a breach of health and/or safety) as well as all injuries on duty (including needle stick injuries) should be emphasized and communicated as well.

- **Correct procedures** should be outlined and communicated to relevant personnel for identifying, packaging, handling, transporting and packing the various streams of HCRW.
- **Spillage management** for the various streams of waste should be designed, planned and rehearsed with all the people in the chain who handle HCRW.
- All HCRW handlers should be provided with the **necessary PPE** at all times.
- **Adequate ablution facilities** should be made available to workers so that they are ENABLED to maintain personal and hand hygiene at all times.
- **Incident / Injury Reporting** should be encouraged and supported by a putting a foolproof protocol in place for monitoring and investigation to continuously improve the health and safety programme (refer to Attachment 1 which shows an example of an internal Incident / Injury Report Form).

8. Personal Protective Equipment

Workers handling HCRW should be suitably equipped with the correct PPE. The type of PPE used in certain scenarios will be determined by the risk associated with the activity performed, but, in general, the array of PPE made available to workers handling HCRW should include:

- Body protection – Uniforms, such as conti suits / aprons / fire-armour
- Face Protection – Masks and protective visors / full-face shields
- Feet Protection - Safety boots / gumboots
- Hand Protection – Gloves

Uniforms and other PPE that is washed and reused should not to be taken home by the employee for decontamination – they should be decontaminated on-site and this remains the responsibility of the employer.

9. Medical Screening, Immunizations & Medical Surveillance

Generally, affected employees undergo a work history, a medical history and a medical examination by a licensed physician **prior** to commencement of duties; these elements are used to establish a baseline of the employee's health and then used to monitor their future health as it relates to their potential occupational exposures to hazardous agents.

9.1 Medical Screening should be carried out as follows (and provided at no cost to the employee) – refer to Attachment 3:

- At pre-employment and pre-placement examination – baseline medical.
- At periodic medical examinations, usually at 12-24 month intervals.
- At termination of employment or reassignment to a non-covered position if the employee has not had an examination within the last 6 months.
- As soon as possible after an employee has developed signs or symptoms indicating possible overexposure to a hazardous substance.
- On the recommendation of the examining physician.
- As required by specific standards for Hazardous Materials.

9.2 Immunization

- Viral **hepatitis B** infections have been reported among health care personnel and waste handlers, and immunization against the disease is therefore recommended.
- **Tetanus** immunization is also recommended for all personnel handling waste.

10. Injury on Duty (IOD)

10.1 Background

In many countries, workers who are injured on duty or obtain an occupational disease can claim compensation for temporary or permanent disablement. If workers die as a result of an injury on duty, their dependents will also be entitled to claim compensation. Employers that registered their employees are protected against civil claims in this regard, where applicable.

An accident must be reported when an employee meets with an accident arising out of and in the course of employment resulting in a personal injury for which medical treatment is required.

Written or verbal notice of an injury at work is to be given to the employer before the completion of the shift. Good practice on the side of the employer will be to make a list of all witnesses of the accident for the investigation of the incident.

Refer to Attachment 2 to see Swaziland's official form for this purpose. This form should be completed whenever an employee meets with an accident out of or in course of employment that leads to personal injury or where medical treatment is required or in the case of death. It is the employer's duty to submit the prescribed form within a designated period to the presiding Compensation Commissioner, where applicable.

10.2 Worker's Compensation

Workers' compensation is a form of insurance providing wage replacement and medical benefits to employees injured in the course of employment in exchange for mandatory relinquishment of the employee's right to sue his or her employer for the tort of negligence. The tradeoff between assured, limited coverage and lack of recourse outside the worker compensation system is known as "the compensation bargain."

While plans differ among jurisdictions, provision can be made for weekly payments in place of wages (functioning in this case as a form of disability insurance), compensation for economic loss (past and future), reimbursement or payment of medical and like expenses (functioning in this case as a form of health insurance), and benefits payable to the dependents of workers killed during employment (functioning in this case as a form of life insurance).

(Reference: http://en.wikipedia.org/wiki/Workers'_compensation)

10.3 IOD Procedure

Depending on the country in question, it is the employer's responsibility to investigate the country specific protocol and to attach the relevant forms to this SOP, as well as include a recommended protocol in line with the country's labour laws.

10.4 Incident Reporting and Investigation

Apart from it being a legal requirement to report and investigate incidents, it also makes very good financial sense. Profits and Safety are not in competition; on the contrary, safety is good business practice.

Those incidents which have occurred must be investigated and action taken to prevent their costly recurrence. When "Near Miss" incidents occur there is an even better opportunity to take preventive action before they even happen.

Particularly in the medical field, one must, at all times, be on the lookout for incidents to report and action.

10.4.1 Reporting:

All Injuries, Loss and Near Miss incidents must be reported in the prescribed manner on the Internal Incident Report Form (refer to Attachment 1 for an example / recommended template).

10.4.2 Investigation:

All incidents must be appropriately investigated, according to the following:

Serious Incidents: All Serious Incidents must be fully investigated and appropriate actions followed up to completion. All investigations and outcomes must be documented on the Internal Incident Report Form (Attachment 1).

Minor Incidents: All Minor Incidents must be investigated and appropriate actions taken to follow-up on the Internal Incident Report (Attachment 1).

10.4.3 Co-ordination:

The co-ordination of incident reporting, investigation and follow-up is the responsibility of the facility's managerial staff, which will ensure that the above procedure is followed in relevant regions and that monthly numerical and graphical statistics are produced and communicated to all employees throughout the regions.

11. Records

1

12. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

13. Documents

1. Attachment 1: Example of an Incident / Injury Report Form
2. Attachment 2: Report of Injury or Dangerous Occurrence Form – Swaziland
3. Attachment 3: Medical Certificate Form - Swaziland
4. Attachment 4: Training Evaluation Checklist

14. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section			

Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

15. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:
1				
2				
3				
4				

Attachment 1

EXAMPLE OF AN INTERNAL INCIDENT / INJURY REPORT FORM

INCIDENT / INJURY REPORT FORM TEMPLATE				
Please print clearly and tick the correct box				
Status:	Employee	Contractor	Other	
Outcome:	Near miss	Injury		
1. DETAILS OF INJURED PERSON				
Name:	Phone:	(H)	(W)	
Address:	Sex:	M	F	
	Date of birth:			
	Position:			
Experience in the job:	(years/months)			
Start time:	am	pm		
Work arrangement:	Casual	Full-time	Part-time	Other
2. DETAILS OF INCIDENT				
Date:		Time:		
Location:				
Describe what happened and how:				
3. DETAILS OF WITNESSES				

Name:	Phone:	(H)	(W)	
Address:				
4. DETAILS OF INJURY				
Nature of injury (eg burn, cut, sprain)				
Cause of injury (eg fall, grabbed by person)				
Location on body (eg back, left forearm)				
Agency (eg lounge chair, another person, hot water)				
5. TREATMENT ADMINISTERED				
First Aid given	Yes	No		
First Aider name:				
Treatment:				
Referred to:				
SECTION 6-9 MUST BE COMPLETED BY EMPLOYER				
6. DID THE INJURED PERSON STOP WORK?				
Yes	No	If yes, state date:		Time:
Outcome:	Treated by doctor	Hospitalized	Workers compensation (Injury on Duty - IOD) claim	
	Alternative duties	Rehabilitation	Returned to	

			normal work	
7. INCIDENT INVESTIGATION (comments to include causal factors):				
8. RISK ASSESSMENT				
Likelihood of recurrence:				
Severity of outcome:				
Level of risk:				
9. ACTIONS TO PREVENT RECURRENCE				
Action				
By whom				
By when				
Date completed				
10. ACTIONS COMPLETED				
Signed (Manager):	Title:			

	Date:
Feedback to person involved	Date:
11. REVIEW COMMENTS	
OHS committee / staff meeting:	
Reviewed by site Manager (signed):	Date:
Reviewed by Health & Safety Rep.(signed):	Date:

Attachment 2

MEDICAL OFFICER

REPORT OF INJURY OR DANGEROUS OCCURRENCE

To be submitted to the Commissioner of Labour, P.O. Box 198, Mbabane

2908

* Completing and signing this form does not constitute an admission of liability of any kind, either by the person making the report or any other person*

A. INFORMATION OF THE EMPLOYER

1. Company's Name: .....
2. Address: ..... 3. Tel: No.: .....
4. Nature of work: .....
5. Name of Company Insurance: ..... 6. Policy No.: .....

B. INFORMATION ON THE INJURED PERSON

7. Name: ..... 8. Age: ..... 9. Sex: .....
10. Marital Status: ..... 11. Pay No.: ..... 12. Tax No.: .....
13. Type of Employment: .....
14. Terms of employment:

Permanent	✓	Temporary		Seasonal		Casual	

15. Home Address: .....
16. Chief's Name: ..... 17. Indvuna: .....
18. Rate of Wages:

Weekly/Monthly Earning=E		Value of Housing=E	—
Average overtime bonus=E	—	Value of Rations=E	—
Value of fuel=E	—	Value of other fringe benefits=E	—

19. For fatal cases: A) Name of next of kin: ..... B) Relationship: .....
C) Signature: .....

C: INFORMATION OF THE ACCIDENT

20. Date of Accident: ..... 21. Time of Accident: .....
22. Part of body injured by the accident: .....
23. Nature of injury (Please look at cover page for guidance) .....
24. Section where accident happened: .....
25. Cause of accident (Tick in box or describe in "other")

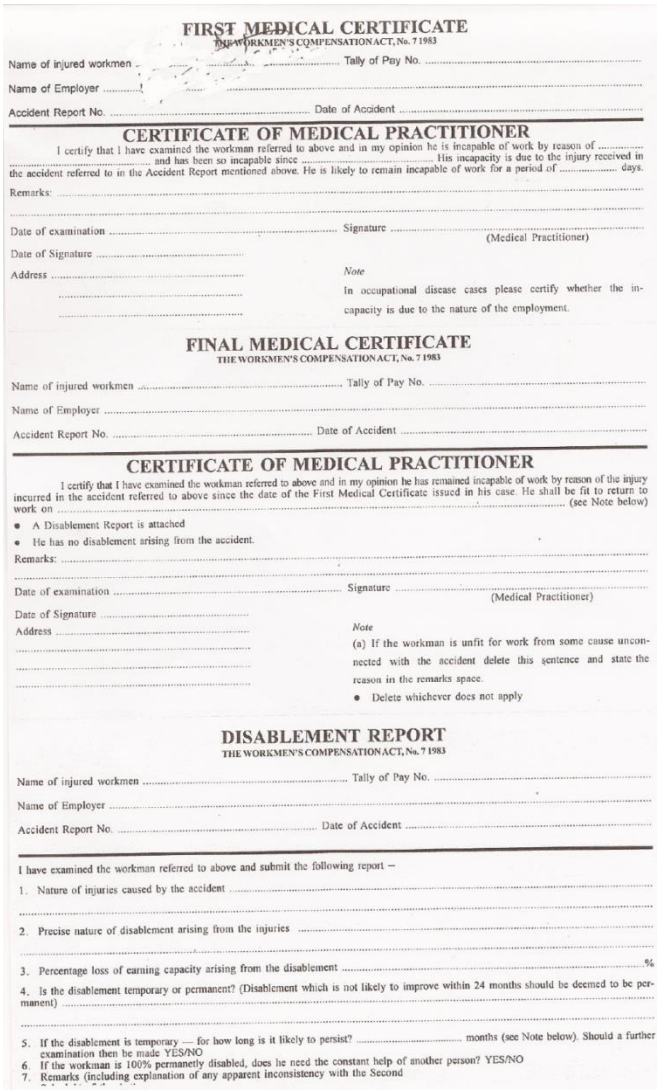
Falling objects		Falling person		Moving machinery		Other:	
Hand tools		Electricity		Chemicals or gasses			
Dust		Fire		Explosion			
Transport		Lifting/carrying		Sharp object			

26. Describe what happened: .....
.....
.....
.....
27. What protective measures were used: .....
28. Name of Supervisor: ..... 29. Name of first witness: .....
30. Name of second witness: .....

D: COMPANY OFFICIAL USE, NAME OF PERSON COMPLETING THE FORM:

31. Name in Block Letters: ..... 32. Date: .....
33. Signature: ..... 34. Position in company: .....

Attachment 3



FIRST MEDICAL CERTIFICATE
THE WORKMEN'S COMPENSATION ACT, No. 7 1983

Name of injured workmen ..... Tally of Pay No. .....
Name of Employer .....
Accident Report No. ..... Date of Accident .....

CERTIFICATE OF MEDICAL PRACTITIONER

I certify that I have examined the workman referred to above and in my opinion he is incapable of work by reason of ..... and has been so incapable since ..... His incapacity is due to the injury received in the accident referred to in the Accident Report mentioned above. He is likely to remain incapable of work for a period of ..... days.

Remarks: .....

Date of examination ..... Signature .....
(Medical Practitioner)
Date of Signature .....
Address .....

Note
In occupational disease cases please certify whether the incapacity is due to the nature of the employment.

FINAL MEDICAL CERTIFICATE
THE WORKMEN'S COMPENSATION ACT, No. 7 1983

Name of injured workmen ..... Tally of Pay No. .....
Name of Employer .....
Accident Report No. ..... Date of Accident .....

CERTIFICATE OF MEDICAL PRACTITIONER

I certify that I have examined the workman referred to above and in my opinion he has remained incapable of work by reason of the injury incurred in the accident referred to above since the date of the First Medical Certificate issued in his case. He shall be fit to return to work on ..... (see Note below)

- A Disablement Report is attached
- He has no disablement arising from the accident.

Remarks: .....

Date of examination ..... Signature .....
(Medical Practitioner)
Date of Signature .....
Address .....

Note
(a) If the workman is unfit for work from some cause unconnected with the accident delete this sentence and state the reason in the remarks space.
- Delete whichever does not apply

DISABLEMENT REPORT
THE WORKMEN'S COMPENSATION ACT, No. 7 1983

Name of injured workmen ..... Tally of Pay No. .....
Name of Employer .....
Accident Report No. ..... Date of Accident .....

I have examined the workman referred to above and submit the following report –

1. Nature of injuries caused by the accident .....
2. Precise nature of disablement arising from the injuries .....
3. Percentage loss of earning capacity arising from the disablement ..... %
4. Is the disablement temporary or permanent? (Disablement which is not likely to improve within 24 months should be deemed to be permanent) .....
5. If the disablement is temporary — for how long is it likely to persist? ..... months (see Note below). Should a further examination then be made YES/NO
6. If the workman is 100% permanetly disabled, does he need the constant help of another person? YES/NO
7. Remarks (including explanation of any apparent inconsistency with the Second

Attachment 4

TRAINING EVALUATION CHECKLIST

Five questions on SOP's content (Yes/No, multiple choices or open-ended questions):

6. Should workers handling HCRW have a full medical before they commence work? Yes / No?
7. What immunizations should HCRW workers receive before commencing work?
8. If you receive vaccinations, you don't need to wear PPE. True / False?
9. HCRW Workers should have annual or biannual medicals to monitor their occupational health status. True / False?
10. If you experience a 'near miss' of accident or injury, should you still report it? Yes / No?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO

Section:	Number:	Title:	Revision:
MOH-HCWM	011	**Hand Hygiene**	1

	Name:	Date:	
Lead Author:	Ministry of Health Technical Working Group	27/11/2012	
Approved:	Environmental Health Department	04/10/2013	
Effective Date:	01/01/2014	Review Period:	*Annual/Quarterly*

1. Purpose

This document provides procedures on hand hygiene.

2. Scope

Effective hand-hygiene is the most cost-effective and simplest measure for health care workers to prevent cross-contamination in the health care setting and wearing gloves is not a substitute for hand hygiene.

3. Responsibilities

Title	Responsibility
Managerial Staff	• Obtain and be familiar with national waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Ensure staff is trained on the proper procedures. • Budget for adequate supply of HCWM products and activities. • Advocate for staff health and safety. • Follow hand hygiene best practice.
Clinical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are ¾ full for collection and replacement. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Follow hand hygiene best practice.

Support Staff	• Place appropriate HCRW containers at designated locations. • Know colour-coding system and use it correctly. • Practice safe operating procedures and wear appropriate PPE. • Collect correctly filled (no more than ¾) HCW containers. • Ensure a clean and orderly environment at the facility. • Record keeping—record number of filled HCW containers, identify supply needs, report stock outs. • Store HCRW in a dedicated and secure location. • Follow hand hygiene best practice.
Technical Staff	• Follow waste management policies and procedures. • Practice safe operating procedures and wear appropriate PPE. • Ensure adequate supply of HCWM products. • Follow colour-coded waste segregation system. • Notify Support Staff when HCW containers are no more than ¾ full. • Follow hand hygiene best practice.
Infection Prevention Control Staff	• Obtain and be familiar with national and programme waste management policies and guidelines. • Enforce facility waste management plan (goal, budget, staff, roles, supervision, training, reporting, etc.). • Train staff on proper procedures for identification, segregation and packaging of HCW. • Conduct quality audits and verify compliance with HCWM SOPs and National Guidelines. • Advocate for staff health and safety. • Notify Stores when HCW container stock is running low to ensure sound stock control. • Follow hand hygiene best practice.

4. Definitions

Term	Definition
Anatomical Waste / Pathological Waste	Anatomical Waste (also often referred to as pathological waste) consists of tissues, organs, body parts, blood and bodily fluids from patients, human foetuses and animal carcasses, but excludes teeth and hair.
Antiseptic	Compound or preparation that prevents the growth of disease-causing microorganisms on skin.

Biohazard Symbol	 This symbol is required on the side of all infectious and sharp waste containers.
Cleaning	Removal of contamination from an item to the extent necessary for the further processing or for the intended use.
Clinical Staff	This includes all staff involved in and related to the observation and treatment of actual patients rather than theoretical or laboratory studies. *Examples: nurses; doctors; phlebotomists; dentists; etc.*
Chemical Waste	Consists of discarded solid, liquid, and gaseous products that contain dangerous or polluting chemicals, for example from diagnostic and experimental work and from cleaning, housekeeping and disinfecting procedures. Chemical waste from health care may be hazardous or non-hazardous. *Example: pharmaceutical waste, cytotoxic / genotoxic waste and radioactive waste.*
Colour-coding System	A system for relating the contents of packaging / containers by using different colours.
Containerization	Often used interchangeably with the word packaging. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Contaminated	State of having been actually or potentially in contact with a contaminant *Examples: pollutant, radioactivity, chemical, blood, etc.*
Decontamination	Process or mode of action to reduce contamination to a safe level.

Decontamination Area	Area of a health care facility designated for collection, retention, and cleaning of soiled and/or contaminated items.
Hazard	Intrinsic potential property or ability of any agent, equipment, material, or process to cause harm.
Health Care Facility	Place or site where professional health services are dispensed to human or animal patients or where biological research is carried out. *Example: laboratory, hospital, clinic, free-standing operating theatre, mobile clinic and health centre.*
Health Care General Waste	Comparable to domestic/municipal/household waste, this type of waste does not pose special handling problems or hazards to human health or to the environment.
Health Care Risk Waste	All waste generated by health care establishments, research facilities, and laboratories that could pose a health risk to health worker, the public, or the environment.
Identification	The process of visually recognizing relevant health care waste streams at the point of generation.
Infectious Waste	This is waste that may have been in contact with human blood or bodily fluid and may have the ability to spread disease. *Examples: gauze, cotton, dressings, laboratory cultures, IV fluid lines, blood bags, gloves, anatomical waste, surgical instruments and pharmaceutical waste.*
Infection Prevention Control (IPC) Staff	Infection Prevention Control Committee Members.
Managerial Staff	This includes all staff in administrative or decision-making capacity for the relevant facility(ies). *Examples: administrator; manager; senior matron; senior medical officer.*

Microbial	Is a microorganism.
Microorganism	Entity of microscopic size, encompassing bacteria, fungi, protozoa, and viruses.
Minimum recommended concentration (MRC)	Minimum concentration at which a liquid chemical sterilant is suitable for the decontamination procedure.
Packaging	Often used interchangeably with the word containerization. Refers to the materials used to wrap and safely contain the relevant waste streams to prevent exposure during transport till final disposal. *Examples: rigid plastic containers, flexible plastic bags, lined fibre-board box sets, etc.*
Personal Protective Equipment (PPE)	Specialized clothing or equipment worn by an employee for protection against a hazard.
Segregation	Systematic separation of health care waste into designated categories.
Sharps Waste	This is waste that may puncture the skin and cause disease. *Examples: needles, infusion sets, scalpels, knives, blades, lancets, and broken glass.*
Soap	A substance used with water for washing and cleaning, made of a compound of natural oils or fats with sodium hydroxide or other strong alkali.
Sodium Hypochlorite Solutions	Widely used for decontaminating surgical instruments, laboratory equipment and spot-disinfection of countertops and floors in health care facilities. *Example: Jik is the local trade name for concentrated sodium hypochlorite, which is sold widely.*
Special Waste	Comprised of hazardous and non-hazardous waste, which has physical or chemical characteristics, or both, that are different from anatomical / pathological, chemical, radioactive, and general waste that requires special

	packaging and/or handling. *Example: lead, batteries, mercury, pressured containers, infectious laundry, microbiological waste, infectious food waste, amputated limbs and electronic waste.*
Support Staff	This includes all staff in an ancillary or assisting role to other staff. This level of staff usually emerges with a lower level of education and skill competency than the other staff groups. *Examples: cleaners; orderlies; housekeepers; groundsmen; drivers; etc.*
Technical Staff	This includes all staff involved in a field related to a particular subject, art, or craft, or its techniques, which is non-clinical. *Examples: accounts / finance; stores; biomed; maintenance.*

5. Acronyms

HCF	Health Care Facility
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HCWM	Health Care Waste Management
IPC	Infection Prevention Control
PPE	Personal Protective Equipment
MOH	Ministry of Health
MOH-EHD	Ministry of Health – Environmental Health Department
QA	Quality Assurance
SEA	Swaziland Environmental Authority

SOP	Standard Operating Procedure

6. References

1. "Recommended Practices for Surgical Hand Antisepsis/Hand Scrubs," in Standards, Recommended Practices, and Guidelines (AORN, 2004).
2. "WHO Guidelines on Hand Hygiene in Health Care," (WHO, 2006)

7. Procedure

7.1 General Hand Hygiene

7.1.1 Hand hygiene should be performed upon entering patient areas, before and after patient contact, after removing gloves or before wearing gloves, any time there is a risk of contact with blood or other potentially infectious materials, before and after eating, drinking or smoking, and, before and after using the toilet.

7.1.2 Health care workers should avoid contact with surfaces that are potentially contaminated, such as equipment and other inanimate objects in the patient care setting.

7.1.3 Fingernails should be kept short, clean, and healthy. Removal of debris underneath fingernails requires the use of a disposable, single-use nail cleaner and running water. Fingernails should not extend past the fingertips as long fingernails may cause patient injury and can increase the risk of glove tearing. Polish, if used, should not be chipped as chipped polish may support the growth of larger numbers of microorganisms on fingernails.

7.1.4 Artificial nails should not be worn. Fungal growth occurs frequently under artificial nails as a result of moisture becoming trapped between the natural and artificial nail.

7.1.5 Cuticles, hands, and forearms should be free of open lesions and breaks in skin integrity, which increase the risk of patient and clinical staff member infection.

7.1.6 Rings, watches, and bracelets should be removed before performing hand hygiene activities. These items may harbour microorganisms or inhibit their removal.

7.1.7 If hands are visibly soiled, wash them as soon as possible with soap and water as follows (duration of the entire procedure is approximately 40-60 seconds):

1. Wet hands with warm water;
2. Apply enough soap to cover all hand surface;
3. Rotate rubbing hands palm to palm together seven (7) times;
4. Rub right palm over left dorsum with interlaced fingers and vice versa seven (7) times;

5. Rub palm to palm with fingers interlaced seven (7) times;
6. Rub back of fingers to opposing palms with fingers and vice versa seven (7) times;
7. Rotate rubbing of left thumb clasped in palm and vice versa seven (7) times;
8. Rotate rubbing backwards and forwards with clasped finger of right hand in palm and vice versa seven (7) times;
9. Rinse hands with water;
10. Dry hands thoroughly with a single use towel;
11. Use towel to turn off faucet and open door;
12. Discard towel in general waste (black) bin.

NOTE: ALCOHOL-BASED HAND RUBS ARE NOT APPROPRIATE FOR USE WHEN HANDS ARE VISIBLY SOILED OR CONTAMINATED (E.G. BLOOD, SALIVA AND DIRT) BECAUSE THESE HAND RUBS DO NOT REMOVE SOIL OR DEBRIS.

7.1.8 If hands are not visibly soiled, an alcohol-based hand rub may be used for routine decontamination of hands in the absence of soap and water.

Wearing gloves is NOT a substitute for hand hygiene.

8. Records

2

9. Distribution

- Health Care Facility
- Regional Health Management Team
- Regional Environmental Health Officer
- Health Care Facility Staff

10. Documents

1. Attachment 1: Training Evaluation Checklist

11. Amendment History

	Name:	Title:	Date:
Original Lead Author:			
Original Section Approval:			
Original Effective Date:		Review Period:	*Annual/Quarterly*

12. Additional Reviewers

Revision:	Name:	Title:	Date:	Comments:

1				
2				
3				
4				

Attachment 1

TRAINING EVALUATION CHECKLIST

Questions on SOP's content (Yes/No, multiple choices or open-ended questions):

1. Define microorganism?
2. What is the proper procedure for washing your hands?
3. What is an antiseptic?

I confirm that I have read and understand this procedure: _____

	NAME	**SIGNATURE**	**DATE**
CARRIED OUT BY:	_____	_____	_____
EVALUATED BY:	_____	_____	_____

SUCCESSFUL: YES/NO