



REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH



**INFECTION PREVENTION AND CONTROL  
WATER SANITATION AND HYGIENE  
IN HEALTH CARE FACILITIES**

**THE GUIDELINES and  
STANDARD OPERATION PROCEDURES**

**2018**


## FOREWORD

The Ministry of Health recognises the importance of water, sanitation and hygiene in the delivery of maternal, neonatal child and nutrition health care. Infection prevention and control is a critical component of patient safety and quality health services, yet it has been neglected.

The rates of nosocomial infections related to poor prevention and control are relatively high. In Zambia, white laboratory coats were found to be highly contaminated with *S aureus* and *K. pneumonia* pathogens which exhibit high resistance to most antibiotics. The high burden of highly infectious disease demands that special attention be placed on infection prevention and control practices.

The Ministry of Health in its quest to improve patient safety and quality of care has prioritised infection prevention and control as a critical component of quality health care. The Millennium Development Goal initiative for Maternal Neonatal Child Health and Nutrition is a project derived through the United Nations (UN) supporting Water Sanitation and Hygiene (WASH) related Infection Prevention and Control (IPC) aimed at strengthening health care delivery. The priority focus of WASH related Infection Prevention and Control (IPC) are: access to safe and adequate water, hand washing, appropriate sanitation, solid waste management, cleaning and sterilization.

The document therefore, proposes minimum standards and guidelines for water, sanitation and hygiene in health facilities for IPC. It will serve as a guide to staff in implementing IPC-WASH as well as a reference for standards in planning and implementation.

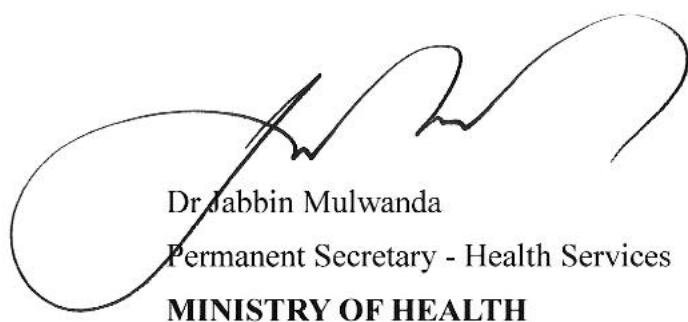
  
Dr. Chitalu Chilufya (MP)  
**MINISTER OF HEALTH**

## ACKNOWLEDGMENT

This document is the product of many individuals and stakeholders whose invaluable contributions have provided the technical, financial and material support that made its development possible. The integration of infection prevention and control (IPC) in water, sanitation and hygiene (WASH) is designed to provide health care providers and supervisors with a tool that enables them to implement effective interventions aimed at protecting health care providers and patients.

The Ministry of Health would like to thank the European Union (EU) through the Millennium Development Goal Initiative for providing financial support towards the development of this IPC-WASH standard package for health facilities and to United Nation Children's Fund (UNICEF) for technical support.

Further, gratitude goes to all members of staff in all the 11 MDGi districts and 51 Health facilities for their instrumental contribution towards the development of this document. Additionally, the Ministry wishes to acknowledge the following Institutions for their technical support, World Health Organization (WHO) Zambia Office, Ministry of Works and Supply, Ministry of Local Government and Zambia Environmental Management Agency.



Dr. Jabbin Mulwanda  
Permanent Secretary - Health Services  
**MINISTRY OF HEALTH**

## CONTENTS

FOREWORD .....	1
ACKNOWLEDGMENT.....	2
ACRONYMS.....	4
INTRODUCTION .....	5
What is this guide?.....	5
What is the Purpose of this Guide? .....	5
Who is this guide for? .....	5
What is in this guide?.....	6
THE IPC WASH IN HEALTH INDICATORS .....	7
1. Access to adequate and clean water .....	7
2. Hand hygiene .....	8
3. Access to Minimum Sanitation .....	9
4. Solid Waste Management.....	10
5. Decontamination, Sterilisation and General Cleaning .....	12
6. Equipment & INFRASTRUCTURE:.....	14
7. Personal Protective Equipment (PPE).....	15
8. Supplies.....	16
9. Monitoring .....	17
STANDARD OPERATING TOOLS TO IMPLEMENT IPC WASH PACKAGE .....	18
Annex 1: List of contributors to the development of MDGi-IPC/WASH Package .....	19

## ACRONYMS

CPO	Chlorine Production Officer
EHT	Environmental Health Technician
HAI	Health Acquired Infection
IPC	Infection Prevention and Control
MDGi	Millennium Development Goal initiative
MOH	Ministry of Health
PPE	Personal Protection Equipment
PMO	Provincial Medical Officer
SOPs	Standard Operating Procedures
UN	United Nations
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
ZEMA	Zambia Environmental Management Agency

## INTRODUCTION

### WHAT IS THIS GUIDE?

This is an instructional guide in implementing a monitoring system to ensure that effective WASH practices are being conducted at the health facility level. Monitoring and implementing effective IPC with WASH Standards at the health facility can lead to a reduction in Healthcare Facility Acquired Infections (HAI) and safer health care environment due to better waste management and sanitation practices, and better health outcomes for patients and staff.

### WHAT IS THE PURPOSE OF THIS GUIDE?

This guide is intended to support facility staff in adopting desired practices related to Infection Prevention and Control (IPC) with regards to Water, Sanitation and Hygiene (WASH) with the goal to help health facilities improve performance to meet the recommended IPC with WASH standards, and to integrate IPC with WASH into routine health care systems. It can be used in various ways, including:

- Guiding health care workers and auxiliary staff (Nurse, Midwives, Doctors, Chlorine Production Officer (CPO), Incinerator Operator, Cleaners) on using the tools to record implementation and track progress.
- Supporting supervisors in understanding how to monitor the implemented activities under the IPC with WASH standards and to promote safe and healthy healthcare facilities for patients and staff.
- Using the results to understand gaps and challenges and improve practices throughout the facility.

### WHO IS THIS GUIDE FOR?

This guide has been developed as a tool for the healthcare facility *workers, In-charges, the Environmental Health Technicians (EHT)* and members of the IPC Committee. By extension, this guide will also provide direction to the supervisors at district and provincial level in their supervisory and monitoring tasks.

## WHAT IS IN THIS GUIDE?

This is a two-part Guide, composed on one side of a list of recommendations under the 9 essential indicators of the IPC WASH in Health, and on the other side, a list of tools and forms to facilitate monitoring and supervision, defined as the Standard Operating Procedures (SOPS) for the minimum WASH package.

## THE IPC WASH IN HEALTH INDICATORS

### 1. ACCESS TO ADEQUATE AND CLEAN WATER

Recommendations:

- Ensure availability of adequate and clean water for clients through continuous equipment maintenance and disinfection.
- Ensure drinking water is stored in clean containers.
- Water quality assessment should be scheduled, timely conducted and documented.
- Water should be stored in clean, non-corrosive containers. Water piping materials also recommended to be non-corrosive.
- When providing new water supply point (such as a borehole), a water quality report should be established detailing the physical, chemical and micro-biological water quality. Documentation should be available at facility and District office.

*Remark: When identifying new groundwater supply points, relative positions between the possible sources of contamination (such as septic tanks) and water supply points should be considered. Ideally experts' advice (in hydrogeology) should be sought; when this advice is not available, indicative minimum distances of 30m between contamination and supply in stable ground with low infiltration capacity and longer distances are recommended in ground with higher infiltration capacities. The direction of underground water flows should also be considered.*

ACCESS TO ADEQUATE AND CLEAN WATER		
Tools Provided		Responsibility allocation and use
1.1	Safe Drinking Water Label <b>Print: Once</b>	<i>EHT/In-charge:</i> This label must be displayed at all drinking water sources.
1.2	Drinking Water Provision Form <b>Print: As required</b>	<i>Cleaner/Department Head:</i> Provision of drinking water must be recorded daily in each department and counter signed by Department head. Drinking water point is signposted.



## 2. HAND HYGIENE

### Recommendations:

- Availability of soap or hand sanitiser and towels with record of consumption to take into consideration supply processes.
- Hand washing facilities should be located in close proximity to the work area.
- Ensure at least one hand washing facility, even portable, for patients and one for staff in each department.
- Ensure clean and functional hand washing facilities through monitoring and maintenance.
- Posters and triggering activities must be organised regularly to promote hand hygiene among staff and patients.
- Hand washing points should clearly state the water is for hand washing only, moreover in case of chlorinated water.
- Hand hygiene should be practiced before and after contact with each patient; Regular and correct (following adequate practices) hand hygiene should be practiced.
- After washing, Health facility staff are advised to dry hands with personal towels.

HAND HYGIENE		
Tools Provided		Responsibility allocation and use
2.1	Hand Wash Label <b>Print: Once</b>	<i>In charge/EHT:</i> This sign must be displayed at all hand washing sites.
2.2	Hand Washing Water Provision Form <b>Print: As required</b>	<i>Cleaner/ Department Head:</i> Provision of hand washing water for mobile units must be recorded daily at all water points and counter signed by Department head.

### 3. ACCESS TO MINIMUM SANITATION

#### Recommendations:

- Adequate number of toilets accessible to outpatients, inpatients and staff.
- Ensure separate toilets for patients and staff; signposted accordingly.
- Ensure separate male and female toilets; signposted accordingly.
- Ensure provision of toilets for people with disabilities: provision of access ramp, toilet space and entrance allowing wheelchair mobility, wall mounted handles; and accordingly signposted.
- Ensure toilets have convenient hand washing facilities inside or shared right outside the block.
- Ensure provision for Menstrual Hygiene Management (MHM), including a water point in a private setting for women and a bin for disposal of pads.
- Ensure clean and functional toilets through monitoring and maintenance.
- Disinfection of all toilet surfaces scheduled, including brushes using 0.5% chlorine solution.

ACCESS TO MINIMUM SANITATION		
Tools Provided		Responsibility allocation and use
3.1	Toilet Label <b>Print: Once</b>	<i>In charge/EHT:</i> This sign must be displayed at all toilets, specifying male, female and disabled stalls.
3.2	Toilet Cleaning Form (see 5.9 Cleaning Log Form) <b>Print: As required</b>	<i>Cleaner/ Department Head:</i> Provision of toilet cleaning must be recorded daily at all stalls by cleaning staff and counter signed by Department head.

#### 4. SOLID WASTE MANAGEMENT

##### Recommendations:

- There shall be a solid waste management system in place at all health facilities.
- All healthcare facility personnel generating waste shall separate hazardous waste from non-hazardous waste at source (i.e. the ward, department, theatre, laboratory or any other room where waste is generated).
- All health facility waste shall be separated and sorted using 3-bin colour coded system:
  - a. **Yellow**-Pathological and infectious waste
    - i. Stored in a strong, leak-proof plastic bag or container.
    - ii. Marked “INFECTIOUS”.
  - b. **Brown**-Pharmaceutical and chemical waste
    - i. Stored in a plastic bag or rigid container.
    - ii. Labelled with appropriate Hazard symbol.
  - c. **Black**-General waste
    - i. Stored in plastic bag or container.
- Due to limited resources, it is not uncommon for health facilities to not always have access to appropriate coloured bins / bin liners. Nevertheless, health facilities should have a labeling protocol for segregated waste storage to ensure waste is disposed of correctly.
- No mixing of infectious/non-infectious waste. In case of accidentally mixed waste, it should be automatically considered and treated as hazardous and disposed of accordingly. For safety reasons, personnel should never try to separate waste once it has been mixed.
- Waste bags should be removed and sealed (with a plastic sealing tag) when not more than  $\frac{3}{4}$  full
- Sharps are to be stored in a puncture-proof container and shall be properly disposed of when the container is  $\frac{3}{4}$  full. Container marked “SHARPS”.
- Domestic waste bins should be available and labelled at the health facility to ensure good waste management practices and cleanliness of the environment from staff and patients.
- Health facilities should have a protocol and a responsible officer in charge of collecting, transporting and storing waste before disposal.

- Infectious waste is to be incinerated according to prescribed guidelines by trained and certified operators.
- Waste incineration SOP is available at the health facility.
- Incinerators will be regularly monitored by the District Medical Equipment Technologist who is the responsible officer.

SOLID WASTE MANAGEMENT		
Tools Provided		Responsibility allocation and use
4.1	Waste Segregation Label <b>Print: Once</b>	<i>EHT</i> : Ensure the label is displayed at the appropriate location to remind the need for segregation. Each bin/bin liner is also designated by colour, label and pictures.
4.2	Waste Quantification Form <b>Print: Monthly</b>	<i>Incinerator Operator</i> : To ensure all waste is quantified before and after incineration for purposes of collection. The same applies for sharps boxes before collection.
4.3	Incinerator Operation Guidelines	<i>District Medical Equipment Technologist/Operator</i> : Operational guidelines for the incinerator for health facilities.
4.4	What to Incinerate	<i>Operator</i> : A form listing what to incinerate to be used by ground staff operating the incinerator

## 5. DECONTAMINATION, STERILISATION AND GENERAL CLEANING

### Recommendations:

- Decontamination, cleaning and sterilisation will be practiced according to guidelines.
- Disinfectants should be available at all times for all wards.
- If chlorine is being produced on site; production rooms should be well ventilated with windows that can be opened and additional ventilation (air extractors) points.
- Medical instruments shall be disinfected in 0.5% chlorine for 10 minutes
- After cleaning, instruments shall be thoroughly washed with soapy water
- Thoroughly rinse instruments using running water before drying them.
- Autoclave instruments according to manufacturer's instruction or follow guidelines for HLD using chemicals for instruments
- There shall be an established schedule and written guidelines for cleaning environmental surfaces in all health facilities.
- Wet mopping by the use of disinfectant (0.5% chlorine) for cleaning blood/bodily fluids should be practiced.
- Ensure small spills are decontaminated by wiping with a cloth soaked in disinfectant solution (0.5% chlorine solution).
- Ensure large spills are flooded with disinfectant solution (0.5% chlorine solution), and if feasible, allow to sit for 10 minutes before mopping up.
- Soiled linen should be decontaminated at source (0.5% chlorine), then collected and transported to laundry for further cleaning.
- Scheduled and monitored cleaning (stains and odour) of toilets should be practiced.
- Clean surfaces according to schedule and protocols.

DECONTAMINATION, STERILIZATION AND GENERAL CLEANING		
Tools Provided		Responsibility allocation and use
5.1	Disinfectant/ Chlorine Delivery Form <b>Print: Monthly</b>	<i>Cleaning Staff Department staff:</i> Disinfectant/Chlorine should be delivered to each ward daily by the appropriate personnel. Department staff should sign off on receiving chlorine.
5.2	Additional Requirement Form:	<i>Cleaning Staff:</i> This form should be displayed at the CPU**or storage room for additional requests of

	Disinfectant/Chlorine <b>Print: As required</b>	disinfectant by department staff. Requests will be responded to accordingly and timely.
5.3	Chlorine Dilution Guide Label** <b>Print: Once</b>	<i>EHT/CPO:</i> An instructional label on chlorine dilution for various uses. This should be displayed clearly in the CPU room and each decontamination area.
5.4	Chlorine Production Log Form** <b>Print: Monthly</b>	<i>CPO:</i> To monitor how much chlorine is produced at each production. CPO to fill in and record production, In-charge/EHT to monitor.
5.5	Chlorine Production Daily Reminder Label** <b>Print: Once</b>	<i>CPO:</i> This should be displayed clearly in the CPU area to remind CPO on issues of daily production, usage storage and usage of brine.
5.6 5.7	Chlorine Production User Guide Label <b>Print: Once</b>	<i>CPO/EHT:</i> This should be displayed clearly in the CPU area as an instructional guide on how to operate the Chlorine Production Unit
5.8	Mobile Water Points Form <b>Print: Monthly</b>	<i>Cleaning staff/Department Head:</i> This form is to monitor the daily provision of drinking water and hand washing water at the relevant mobile water points. It should be located at both hand washing and drinking points sections.
5.9	Cleaning Log Form <b>Print: Weekly</b>	<i>Cleaner/Department Head/EHT:</i> This form should be displayed in each department. Cleaning should be performed at least 3 times per shift in each department and toilet areas. The department head or their representative should monitor it.

*\*Chlorine Production Operator (CPO)*

*\*Chlorine Production Unit (CPU)*

*\*\*Where chlorine production is available*

## 6. EQUIPMENT & INFRASTRUCTURE:

### Recommendations:

- Ensure guidelines provided to guide proper usage of equipment e.g. bleach production units, incinerators.
- There should be proper maintenance and storage of equipment in a dedicated and secured room.
- There should be a servicing plan and record for each equipment (incinerator, CPU, etc.)
- All WASH infrastructures should be regularly maintained and quickly fixed when broken i.e. toilets, sinks, showers, blocked drains.

EQUIPMENT & INFRASTRUCTURE		
Tools Provided		Responsibility allocation and use
6.1	Equipment Log Form <b>Print: Weekly</b>	<i>Cleaner/Department Head/EHT:</i> This form should be displayed in each department. Broken, faulty and non-operational equipment should be logged as required and repaired or replaced in a timely fashion.

## 7. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Recommendations to provide protection to health care personnel and clients from microorganisms present (blood, body fluids, etc.).

- Ensure availability of appropriate PPEs in all health facilities at all times for health workers and support staff to promote IPC; this includes gloves, aprons, boots, masks, goggles, etc.
- Availability of guidelines on the use of PPE: IPC Committee will ensure the good use of PPE by health care workers and support staff.
- Presence of accountability records on the use of PPE: A logbook should record any goods received, as well as the sender.
- All items should be listed and quantified at the beginning of each month and record any item out and to which department.
- Light gloves should not be used for heavy-duty work.

PERSONAL PROTECTIVE EQUIPMENT	
Tools provided	
Responsibility Allocation and Use	
7.1	PPE list
	An indicative list of supplies all health facilities should have to ensure effective IPC practices.



## 8. SUPPLIES

### Recommendations

- Supplies should be available for maintaining IPC practices.
- Proper monitoring should be undertaken to ensure that necessary supplies are available and are being used properly.
- Supply, delivery and handover of supplies to each ward should be recorded.
- Availability of soap should be monitored.
- Availability of chlorine should be monitored.

SUPPLIES		
Tools provided		Responsibility Allocation and Use
8.1	Stock Take Form	A form to track all supply delivery and use in all healthcare facilities.

## 9. MONITORING

### Recommendations

- EHT and In-charge should monitor and supervise the implementation of the SOPs.
- The IPC Committee should discuss issues raised from the implementation of the SOPs and take action as required.

MONITORING		
Tools Provided		Responsibility allocation and use
9.1	EHT Monthly Checklist <b>Print: Monthly</b>	<i>EHT</i> : This checklist is a consolidated weekly monitoring form for the EHT to ensure all IPC with WASH standards are being implemented correctly. It allows for easy feedback to the facility In-charge, IPC committee and district authorities on the needs of the facility. It covers all areas including PPE and Supply monitoring.
9.2	IPC and HCWM Monthly Checklist <b>Print: Once</b>	<i>EHT/In-charge</i> : This checklist should be displayed in a prominent place as a reminder of the roles and responsibilities that are required to be undertaken by staff at the facility for IPC and health care waste management (HCWM).
9.3	IPC Suggested Agenda <b>Print: Monthly</b>	<i>IPC Committee</i> : This is a suggested agenda for the monthly IPC committees to ensure that IPC with WASH standards are being addressed and action is taken where necessary. It covers all areas including PPE and Supply monitoring. Can also be used to raise and address maintenance needs at facility level and take action with support of the District.

## STANDARD OPERATING TOOLS TO IMPLEMENT IPC WASH PACKAGE

<b>1. Access to safe and sufficient water</b>	
1.1	Safe Drinking Water Label
1.2	Drinking Water Provision Form
<b>2. Hand hygiene</b>	
2.1	Hand Wash Label
2.2	Hand Washing Water Provision Form
<b>3. Solid Waste Management</b>	
3.1	Toilet Label
3.2	Toilet Cleaning Form
<b>4. Solid Waste Management</b>	
4.1	Waste Segregation Label, Types of waste labels, Incinerator label
4.2	Waste Quantification Form
<b>5. Decontamination, Sterilisation and General Cleaning</b>	
5.1	Disinfectant Delivery Form
5.2	Additional Disinfectant Requirement Form
5.3	Chlorine Dilution Guide Label
5.4	Chlorine Production Log Form
5.5	Chlorine Production Daily Reminder Label
5.6	Maxi WATA User Guide Label
5.7	Midi WAT User Guide Label
5.8	Mobile Water Points Form
5.9	Cleaning Log Form
5.10	Chlorine Production Label
<b>6. Equipment &amp; Infrastructure</b>	
6.1	Maintenance Surveillance Form (Infrastructure and Equipment)
<b>7. Personal Protective Equipment</b>	
7.1	Supply List
<b>8. Supplies</b>	
8.1	Stocktake Form
<b>9. Monitoring</b>	
9.1	EHT Monthly Checklist
9.2	Consolidated Monthly Checklist
9.3	IPC Suggested Agenda
9.4	SOP-Procedures Label
9.5	Standards Combined Labels

## ANNEX 1: LIST OF CONTRIBUTORS TO THE DEVELOPMENT OF MDGI-IPC/WASH PACKAGE

1. Mr. Mulonda Mate (Deputy Director, Environmental and Occupational Health)
2. Ms Cheleka Kaziya Mulenga (Assistant Director, Environmental Health)
3. Ms. Doreen Sakala (Chief Environmental Health Officer, MoH)
4. Ms. Florence Mwale (Chief Environmental Health Officer, MoH)
5. Mr. Meetwell Cheelo (Chief Environmental Health Officer, Lusaka Province)
6. Mr. Zakeyo Mvula (Chief Environmental Health Officer, Cancer Diseases Hospital)
7. Mr. Allan R. Mbewe (Lecturers, UNZA, School of Public Health)
8. Ms Nosiku Munyinda (Lecturers, UNZA, School of Public Health)
9. Dr. Mpundu Makasa Chikoya (Lecturers, UNZA, School of Public Health)
10. Mr. Lavuun Verstraete (WASH Specialist, UNICEF)
11. Mr. Hilton Chibeleka (UNICEF)
12. Mr. Alain Phe (UNICEF).



## Millennium Development Goal Initiative

Accelerating the Reduction of Maternal, Neonatal and Child Mortality



United Nations  
Z A M B I A

MDGi: A Joint Programme of the Government of the Republic of Zambia – European Union – United Nations

# ANNEXES



**SAFE**

**DRINKING WATER**





## 1.2 DRINKING WATER PROVISION FORM

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



United Nations  
Z A M B I A

DATE	DEPARTMENT	QUANTITY DELIVERED	OPERATOR NAME	SIGNATURE	RECEIVER NAME	SIGNATURE



**HAND WASHING**



## 2.2 HAND WASHING WATER PROVISION FORM

**Millennium Development Goal Initiative**

Accelerating the Reduction of Maternal, Neonatal and Child Mortality



**United Nations**  
Z A M B I A

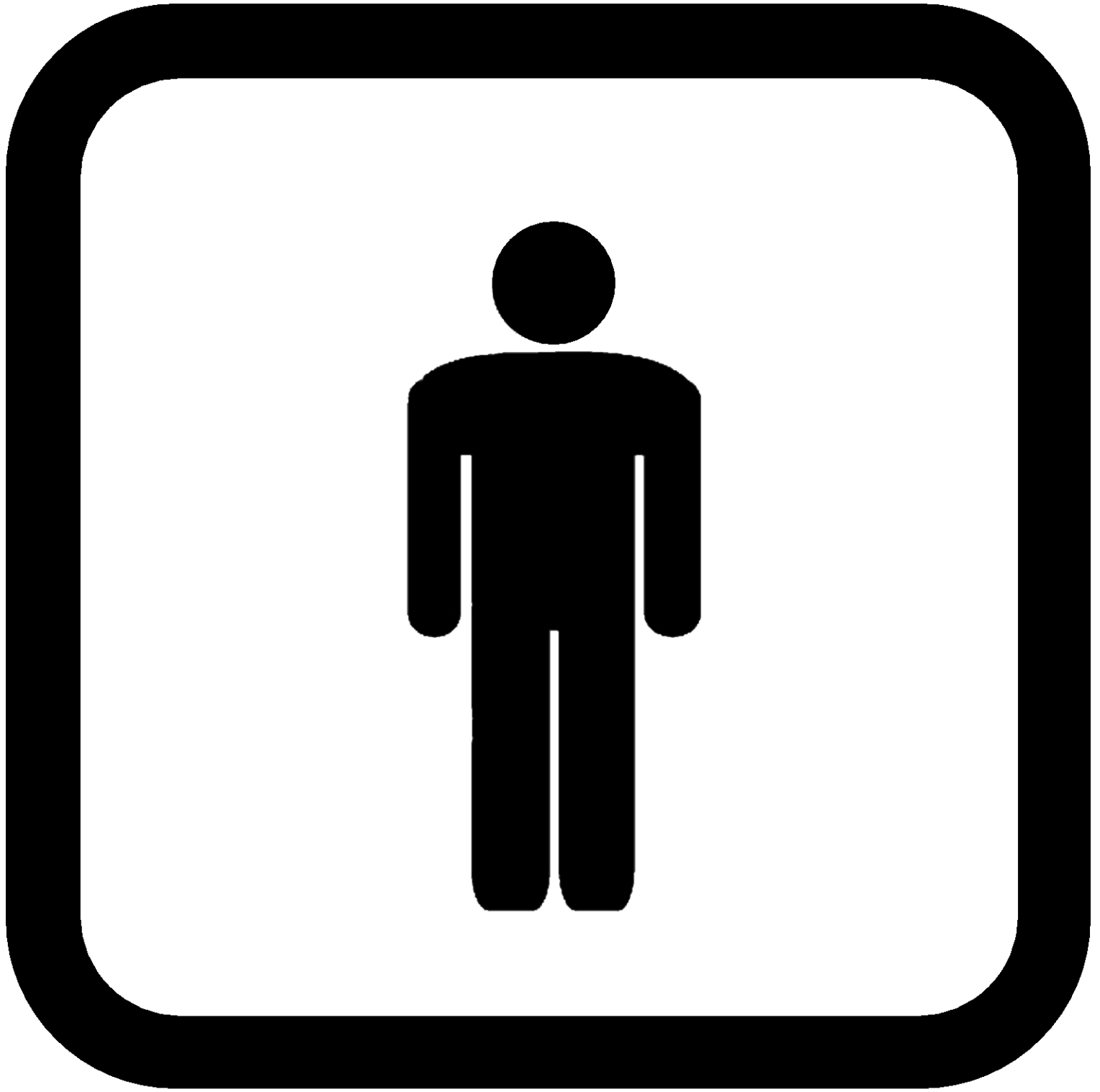
DATE	DEPARTMENT	QUANTITY DELIVERED	OPERATOR NAME	SIGNATURE	RECEIVER NAME	SIGNATURE



**TOILET**



**TOILET**



**TOILET**



### 3.2 TOILET CLEANING FORM



**Millennium Development Goal Initiative**  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



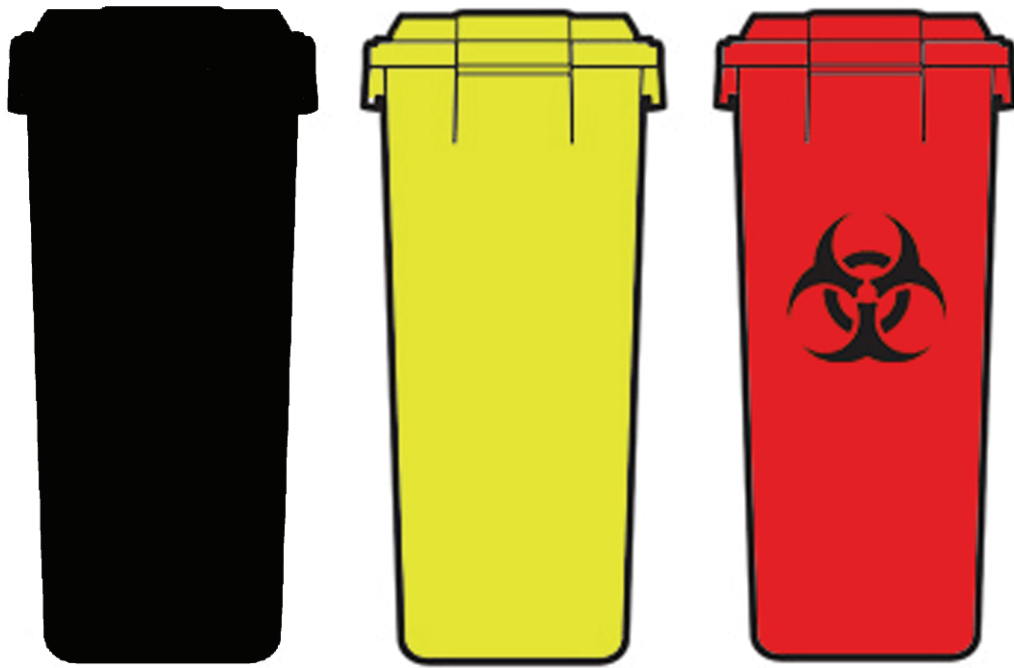
**United Nations**  
Z A M B I A

LOCATION:

Week #:

- Toilet cleaning should be performed at least 2 times per shift.
- Toilets are to be specially monitored as a potential hygiene risk in term of Infection Prevention and Control. Each performance should be documented, signed and certified by the Department's Head or delegate.
- Cleaners have to report any issue related to maintenance and supplies.
- At the end of each week, Cleaning Log Sheet has to be delivered to the Health Centre EHT for archive.
- Related comments or observations can be listed in preparation of the following IPC Committee meeting for guidance and action.

DATE	SHIFT	TIME	CLEANER'S NAME / SIGNATURE	SUPERVISOR'S NAME / SIGNATURE	OBSERVATIONS
	Morning				
	Afternoon				
	Morning				
	Afternoon				
	Morning				
	Afternoon				
	Morning				
	Afternoon				
	Morning				
	Afternoon				
	Morning				
	Afternoon				



**WASTE**

**SEGREGATION**





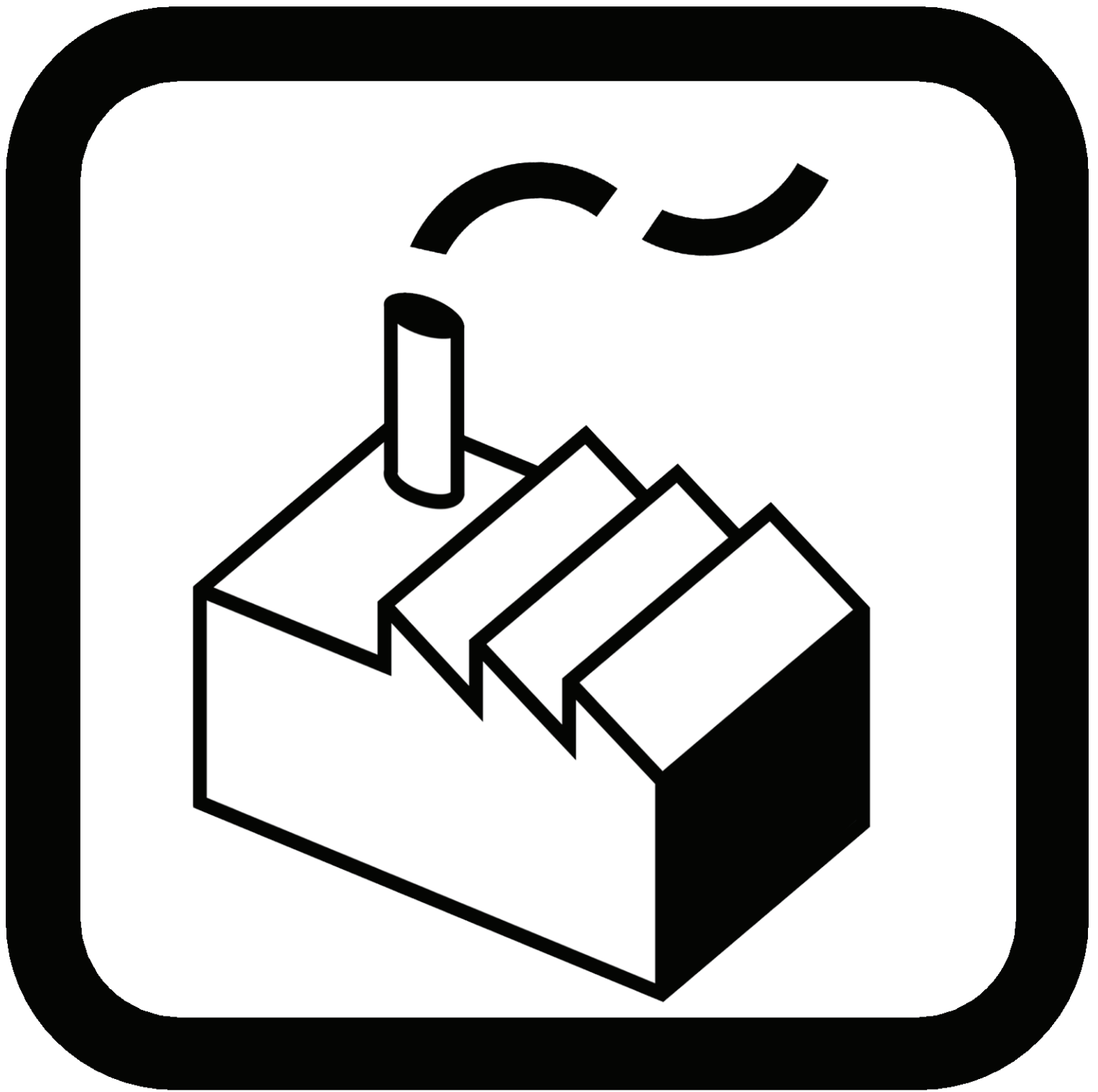
# BIOHAZARD WASTE



# DOMESTIC WASTE



# INFECTIOUS WASTE



**INCINERATOR**



## 4.2 WASTE QUANTIFICATION

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



DATE	QUANTITY OF DOMESTIC WASTE (bag or drum)	OPERATOR NAME	SIGNATURE	DATE	QUANTITY OF MEDICAL WASTE (Kg)		OPERATOR NAME	SIGNATURE
					Incinerated	Ash		



## 5.1 DISINFECTANT DELIVERY FORM



DATE	DEPARTMENT	QUANTITY DELIVERED	OPERATOR NAME	SIGNATURE	RECEIVER NAME	SIGNATURE



## 5.2 ADDITIONAL DISINFECTANT REQUEST FORM

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



DATE	DEPARTMENT	QUANTITY REQUIRED	NEEDED BY	DPT. DELEGATE NAME	SIGNATURE	RECEIVED	DELIVERY NAME	SIGNATURE



## 5.3 CHLORINE DILUTION GUIDE

Indicative dilutions and dosages depending on the active chlorine concentration available



### Disinfection

		Obtained concentration (given by the WataTest)				
		7 g/L	6 g/L	5 g/L	4 g/L	3 g/L
Soiled surfaces	<b>0.5 %</b>	1 Water 3 Chlorine	No dilution Full concentration	No dilution Full concentration	X	X
Floor, linen, instruments	<b>0.5 %</b>	1 Water 3 Chlorine	2 Water 1 Chlorine	3 Water 2 Chlorine	1 Water 1 Chlorine	1 Water 2 Chlorine
Hand washing	<b>0.05 %</b>	13 Water 1 Chlorine	11 Water 1 Chlorine	9 Water 1 Chlorine	7 Water 1 Chlorine	5 Water 1 Chlorine

### Water treatment

		Obtained concentration (WataTest)				
		7 g/L	6 g/L	5 g/L	4 g/L	3 g/L
Volume of water to be treated	<b>100 L</b>	21.4 mL	25.0 mL	30.0 mL	37.5 mL	50.0 mL
	<b>20 L</b>	4.3 mL	5.0 mL	6.0 mL	7.5 mL	10.0 mL
	<b>10 L</b>	2.1 mL	2.5 mL	3.0 mL	3.8 mL	5.0 mL



It is absolutely necessary to test for residual chlorine using the WataBlue test 30 minutes after chlorinating your drinking water. Only this test result will guarantee protection against waterborne diseases.





## 5.4 CHLORINE PRODUCTION DAILY LOG BOOK

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



United Nations  
Z A M B I A

Date	Name of producer	Starting time	Ending time	Quantity produced	Chlorine Concentration	Problem encountered



## 5.5 CHLORINE PRODUCTION DAILY REMINDER



USE SATURATED BRINE FOR PRODUCTION

**2 PRODUCTIONS PER DAY**

SAFE STORAGE OF CHLORINE

**PRIORITIZE USE OF PRODUCED CHLORINE**





USE JIK/BLEACH ONLY AT LAST RESORT



## 5.6 CHLORINE PRODUCTION USER GUIDE

### General Safety Measures



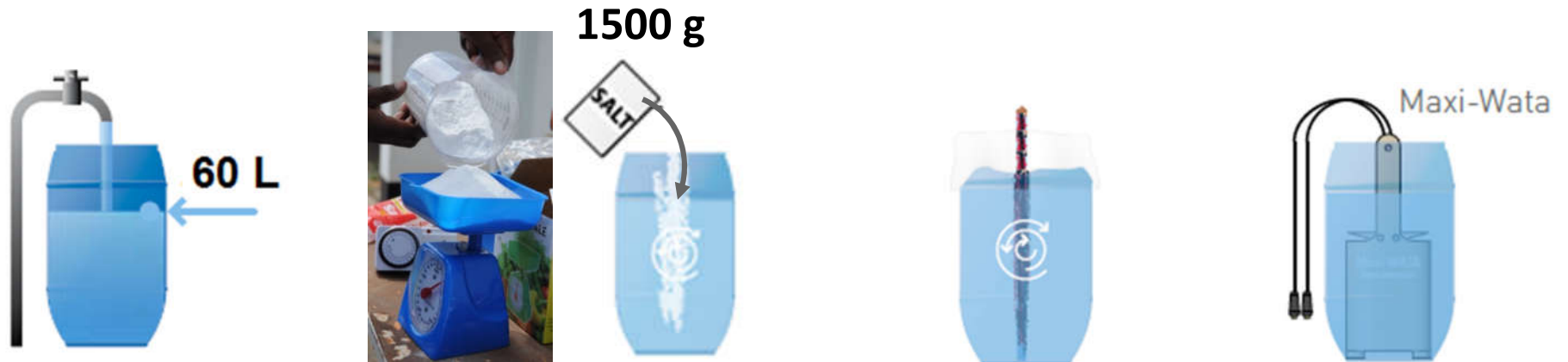
In general	
<p style="text-align: center;"><b>Do</b></p> <p>Wear Personal Protective Equipment</p> <ul style="list-style-type: none"> <li>• For using electrical equipment</li> <li>• To protect from chlorine vapours and splashing water</li> </ul> <p>Avoid splashing water on the floor</p>	<p style="text-align: center;"><b>Don't</b></p> <ul style="list-style-type: none"> <li>• Inhale or ingest the chlorine</li> <li>• Use metallic equipment for the production or storage</li> <li>• Use or store equipment near fire, flame or sparks</li> <li>• Pull or hang on WATA's cables</li> </ul>
	
During production	
<p style="text-align: center;"><b>Do</b></p> <p>Open windows Close cupboards and doors Have a ventilated room Have temperatures around 25°C</p>	<p style="text-align: center;"><b>Don't</b></p> <p>Cover the solution while producing Let dust and sun's rays enter in contact with the chlorine</p>
	
After production	
<p style="text-align: center;"><b>Do</b></p> <p>Store the sodium hypochlorite solution in an opaque, clean, labelled and well-sealed flask, out of reach from children Dip in sulphurous acid solution as soon as a layer of lime scale appears</p>	<p style="text-align: center;"><b>Don't</b></p> <p>Uncover the produced solution Store the solution more than 24 hours without checking the concentration</p>



# CHLORINE PRODUCTION UNIT User Guide Sheet (MAXI)



## Phase 1 - Preparation



### STEP 1

Fill the bucket with 60 liters of water

### STEP 2

Weigh 1500 grams of salt and add it to the water

### Step 3

Stir until there is no more salt remaining at the bottom of the bucket

### Step 4

Immerse the CPU (maxi) and unroll the cable



## Phase 2 – Connections + Timer

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



### STEP 1

Plug the regulator into the wall socket and switch on

### STEP 2

Set the timer for 4h30 and connect it to the regulator

### STEP 3

Connect the power source to the timer

### STEP 4

Connect the CPU (maxi) to the power source and turn it on (green switch)

### STEP 5

Close the storage, close the door and open the windows. Let the device run until the timer stops the production.





## Phase 3 – Closure

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



### STEP 1

Turn off and disconnect the electrical equipment in the opposite order of assembly (turn off the green switch, unplug the machine...turn off the regulator)



### STEP 2

Rinse the machine with clear water and store it

### STEP 3

Measure the chlorine concentration using the CPU test.  
...g/L= number of drops until colour changes / 2



### STEP 4

Fill the Log Book

Date	Name of producer	Starting time	Ending time	Quantity produced	Chlorine Concentration	Problem encountered

### STEP 5

Store the sodium hypochlorite solution in a clean tightly closed, opaque, non-metallic container and label it with production date.









## 5.7 CHLORINE PRODUCTION USER GUIDE

### General Safety Measures



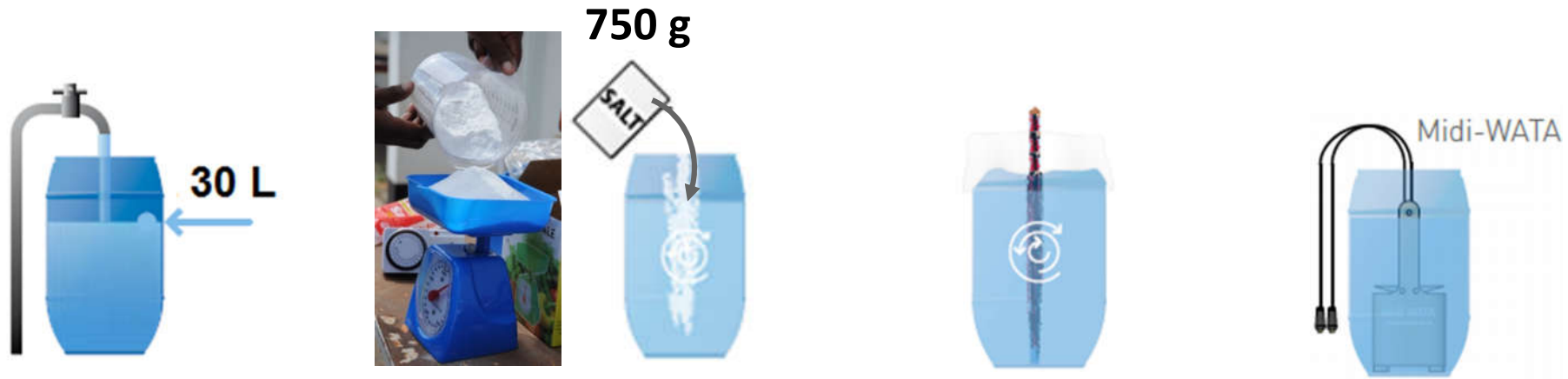
In general	
<p style="text-align: center;"><b>Do</b></p> <p>Wear Personal Protective Equipment</p> <ul style="list-style-type: none"> <li>For using electrical equipment</li> <li>To protect from chlorine vapours and splashing water</li> </ul> <p>Avoid splashing water on the floor</p>	
<p style="text-align: center;"><b>Don't</b></p> <ul style="list-style-type: none"> <li>Inhale or ingest the chlorine</li> <li>Use metallic equipment for the production or storage</li> <li>Use or store equipment near fire, flame or sparks</li> <li>Pull or hang on WATA's cables</li> </ul>	
During production	
<p style="text-align: center;"><b>Do</b></p> <p>Open windows Close cupboards and doors Have a ventilated room Have temperatures around 25°C</p>	
<p style="text-align: center;"><b>Don't</b></p> <p>Cover the solution while producing Let dust and sun's rays enter in contact with the chlorine</p>	
After production	
<p style="text-align: center;"><b>Do</b></p> <p>Store the sodium hypochlorite solution in an opaque, clean, labelled and well-sealed flask, out of reach from children Dip in sulphurous acid solution as soon as a layer of lime scale appears</p>	<p style="text-align: center;"><b>Don't</b></p> <p>Uncover the produced solution Store the solution more than 24 hours without checking the concentration</p>



# CHLORINE PRODUCTION UNIT User Guide Sheet (MIDI)



## Phase 1 - Preparation



### STEP 1

Fill the bucket with 30 liters of water

### STEP 2

Weigh 750 grams of salt and add it to the water

### STEP 3

Stir until there is no more salt remaining at the bottom of the bucket

### STEP 4

Immerse the CPU (maxi) and unroll the cable



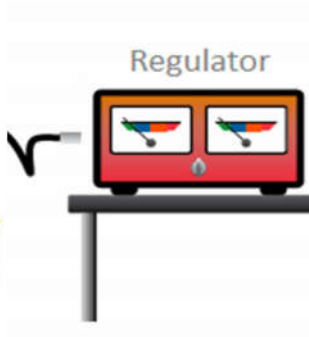


## Phase 2 – Connections + Timer

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



1



2



3



4



### STEP 1

Plug the regulator into the wall socket and switch on

### STEP 2

Set the timer for 4h30 and connect it to the regulator

### STEP 3

Connect the power source to the timer

### STEP 4

Connect the CPU (maxi) to the power source and turn it on (green switch)

### STEP 5

Close the storage, close the door and open the windows. Let the device run until the timer stops the production.





## Phase 3 – Closure

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



### STEP 1

Turn off and disconnect the electrical equipment in the opposite order of assembly (turn off the green switch, unplug the machine...turn off the regulator)



### STEP 2

Rinse the machine with clear water and store it

### STEP 3

Measure the chlorine concentration using the CPU test.  
...g/L= number of drops until colour changes / 2



### STEP 4

Fill the Log Book

Date	Name of producer	Starting time	Ending time	Quantity produced	Chlorine Concentration	Problem encountered

### STEP 5

Store the sodium hypochlorite solution in a clean tightly closed, opaque, non-metallic container and label it with production date.





## 5.8 MOBILE WATER POINTS FORM

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



DEPARTMENT:

DRINKING WATER	HAND WASHING
For 20l. Bucket, add 5ml. of chlorine	For 210l. Container, add 19l. of chlorine
For 210l. Container, add 52,5ml. of chlorine	
For 500l. Container, add 125ml. of chlorine	For 500l. Container, add 45l. of chlorine

**DO NOT FORGET TO STIR THE MIXED SOLUTION**

DATE	LOCATION	TIME	OPERATOR NAME	SIGNATURE	SUPERVISOR NAME	SIGNATURE



## 5.9 CLEANING LOG FORM



**Millennium Development Goal Initiative**  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



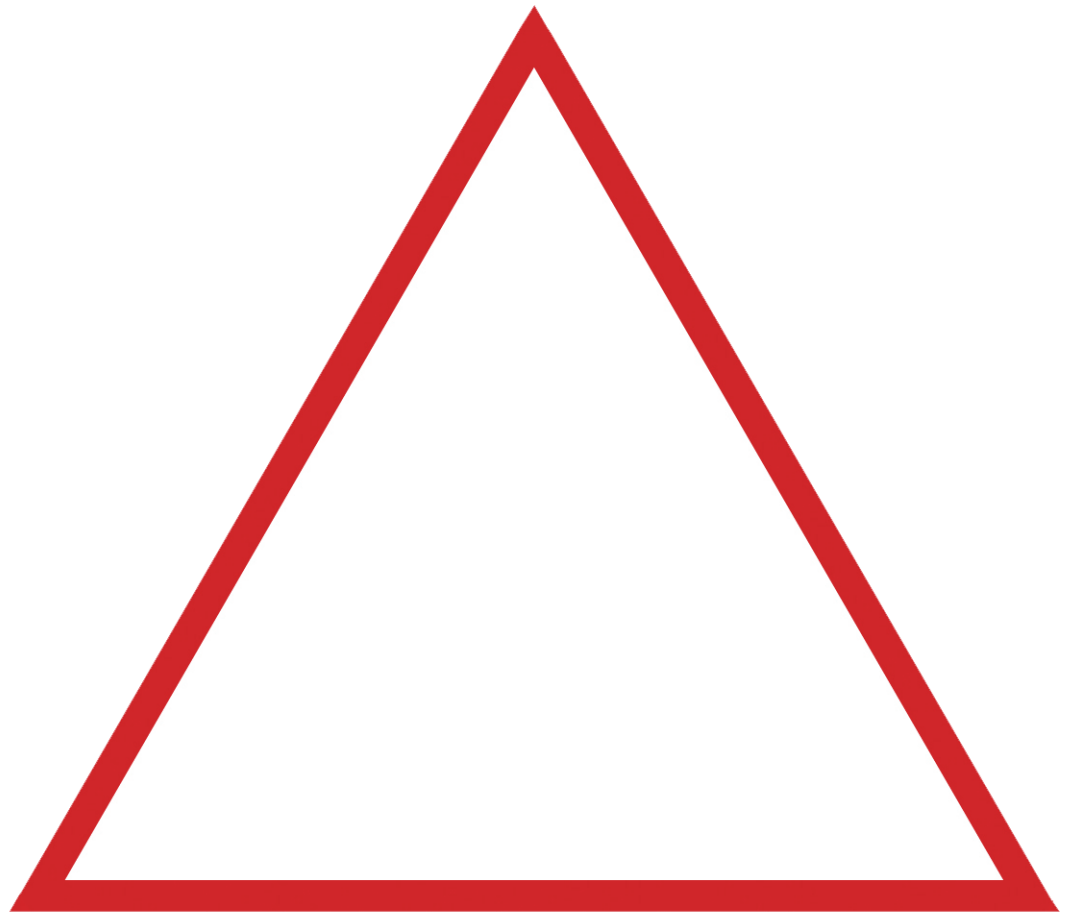
**United Nations**  
Z A M B I A

DEPARTMENT: \_\_\_\_\_

Week #: \_\_\_\_\_

- Cleaning should be performed at least 2 times per shift in each department
- Toilets are to be specially monitored as a potential hygiene risk in term of Infection Prevention and Control.
- Each performance should be documented, signed and certified by the Department's Head or delegate.
- At the end of each week, Cleaning Log Sheet has to be delivered to the Health Centre EHT for archive.
- Related comments or observations can be listed in preparation of the following IPC Committee meeting for guidance and action.

DATE	SHIFT	TIME	WHOLE DEPARTMENT	TOILETS	OPERATOR NAME	SIGN	SUPERVISOR NAME	SIGN
	Morning							
	Afternoon							
	Morning							
	Afternoon							
	Morning							
	Afternoon							
	Morning							
	Afternoon							
	Morning							
	Afternoon							
	Morning							
	Afternoon							
	Morning							
	Afternoon							



**CHLORINE**

**PRODUCTION**



## 6.1 MAINTENANCE SURVEILLANCE FORM

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



DATE	DEPARTMENT	ISSUE OBSERVED	OBSERVER NAME	OBSERVER SIGNATURE	ACTION TAKEN	DATE OF RESOLUTION	CERTIFIED BY	SIGNATURE



## 7.1 SUPPLY LIST

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



<b>WASH Supplies</b>	<i>Hospital</i>	<i>Large HF</i>	<i>Small HF</i>	<i>Per unit KR</i>	<i>Details</i>	<i>Total Large HF</i>	<i>Total Small HF</i>
<b>PPE</b>							
Plastic Aprons		60	60	25		1,500	1,500
Gum Boots (pair)		15	10	125	Sizes 7-10	1,875	1,250
Face Masks (box of 50)		5	3	22	box	110	66
Respirators		3	2	240	Box	720	480
Drapes (cloth)		15	15	50		750	750
Medical caps (100/bag)		5	5	50	Box	250	250
Goggles		30	25	50		1,500	1,250
Heavy Duty Gloves (thicker)		25	15	12	M & L Sizes	300	180
Utility Gloves (pairs)		20	15	14	M & L Sizes	280	210
Mackintosh (Reusable)		15	10	135		2,025	1,350
Examination Gloves (100/big box) - 2 big boxes		100	40	28	Box/100 (Large & Medium)	2,800	1,120
Sterile Gloves (50/big box) so 1 big box		30	20	60	Box/50 Pairs (L & M Sizes)	1,800	1,200
<b>IPC WASH Supplies</b>							
Kalingalinga Bucket		5	3	150	Set with 20l buckets	750	450
Decontamination Buckets (15 litre)		20	10	30		600	300
Pedal Bins (20 litre)		10	5	50	20l	500	250
Waste Bins (45 litre)		15	7	185	45l	2,775	1,295
Leak proof Bin Liners (Rolls) yellow (20/roll)		30	10	50	Rolls-Yellow & Black. Medium & Large	1,500	500
Leak proof Bin Liners (Rolls) black (20/roll)		30	10	50	Rolls-Yellow & Black. Medium & Large	1,500	500
Sharps Boxes (25/box)		30	10	16	5l Boxes	480	160
Hand Washing Soap (Dettol/175g)		20	10	10	200g tablet	200	100
Hand Sanitizer (50ml)		100	40	20	150ml	2,000	800
Hand Sanitizer (keychain/xml) with clips		150	50	40	50ml	6,000	2,000
Hand sanitiser industrial/refill 5l		5	2	200	5l	1,000	400
Linens (bedsheets)		8	4	98	Bedsheets	784	392
<b>Cleaning Supplies</b>							
Spirit of Salt (5l)		4	2	60	5l	240	120
Hand Andy		10	6	10		100	60
Ajax		10	6	6		60	36

Pynol (toilet cleaner, 5l)		3	2	200	5l	600	400
Mutton cloth (roll)		10	6	15	Rolls	150	90
Teepol (all purpose cleaner, 5l)		10	6	40	5l	400	240
Harpic (500ml)		10	6	10	750ml	100	60
Savlon (2l)		10	6	78	5l	780	468
Chlohexidine (2.5l)		10	6	60	5l	600	360
Broom		4	2	50		200	100
Jerrycan (plastic/20l)		4	2	200		800	400
Industrial Mops		5	4	50	Heavy duty mops	250	200
Squeezers		4	3	150	15l with wheels + squeezer	600	450
Washing powder (500g)		25	10	60	1kg Boom/Sunlight	1,500	600
Chlorine (750ml)		25	10	10	750ml JIK/Bleach	250	100
Methylated Spirit (2.5l)		3	2	20	5l	60	40
<b>Drinking water station</b>							
		2	2	2000		4,000	4,000
<b>BPU Training Supplies</b>							
Worksuits/overalls		2	1	85	Size: 1 Medium and 1 Large	170	85
Stabilizer : Frequency: 50 and 60 Hz Nominal voltage: 230 V or 220 V Input voltage tolerance: 165 – 285 V Output voltage variation: 230 ± 10% Power: 2500 -3000 VA)		1	1	4,200		4,200	4,200
Timer/Clock		1	1	165		165	165
80 liter buckets		1	1	450	80 litres for the Maxi-WATA	450	450
Bucket (20 liter)		1	1	34	Plastic bucket with lid	34	34
Measuring jar/cup		1	1	40		40	40
Funnel 20cm diameter		1	1	19		19	19
Plastic Container (20L) chlorine storage with lid		1	1			-	-
Wooden Sticks/spoon (1m.)		1	1	32	Stirring stick	32	32
Balance 5kg measuring scale		1	1	178		178	178
Wrapping cloth 2 meters square		1	1	38		38	38
90kg bag of salt		1	1	210		210	210



Sulfuric acid/(H2SO4)/Battery acid/2.5litres		1	1	38		38	38
Adaptors & Extension Cables		1	1	295		295	295
<b>Incinerator Training Supplies</b>							
Scales		1	0	2,500		2,500	-
Gum boots		1	0	125		125	
Overalls		1	0	85		85	
Heavy duty gloves		1	0	12		12	
Face mask		1	0	10		10	-
<b>TOTAL</b>						<b>51,291</b>	<b>30,262</b>



## 8.1 STOCKTAKE FORM



STOCK LIST	QUANTITY	DATE CHECKED	SIGN	STOCK IN (Quantity)	DATE	STOCK OUT (Quantity)	DATE	TOTAL STOCK	DISTIBUTER NAME	SIGN	RECEIVER NAME	SIGN



## 9.1 EHT MONTHLY CHECKLIST

Millennium Development Goal Initiative  
Accelerating the Reduction of Maternal, Neonatal and Child Mortality



Area	Week 1 Date:	Remarks	Week 2 Date:	Remarks	Week 3 Date:	Remarks	Week 4 Date:	Remarks
Cleaning procedures application								
Cleaning medical equipment procedures application								
Chlorine production quality								
Chlorine delivery to departments								
Waste management and timely collection								
Waste segregation at generation								
Domestic waste weight recorded								
Ash after incineration weight recorded								
SOP Incinerator								
Maintenance surveillance								
Water Quality Check Date:								
IPC Committee Recommendations								



## 9.2 IPC and Health Care Waste Management (HCWM) Checklist



D=Daily W= Weekly R=As Required (Per months or as required per specified task)	Responsibility Allocation	Department			Toilet			Waste Storage Facility		
		D	W	R	D	W	R	D	W	R
<b>CLEANING</b>										
Remove Rubbish and wipe bins clean	Cleaner	✓			✓					
Make sure waste is segregated and take it to waste storage facility	Cleaner				✓			✓		
Clean wash basins, toilets, urinals including cisterns and pipework	Cleaner		✓							
Provision of toilet paper	Cleaner	✓			✓					
Check walls for stains and remove	Cleaner	✓				✓				
Clean smears from glass and mirrors	Cleaner		✓		✓					
Dust light fittings, fixtures and ledges (cobwebs)	Cleaner		✓			✓				
Damp mop floors with chorine	Cleaner	✓			✓					
Clean furniture, benches, desks, chairs, underneath beds etc	Cleaner		✓							
Monitoring cleaning practices	Department Head	✓								
Spot Checks	EHT		✓							
<b>DECONTAMINATION, CLEANING, STERILISATION AND PROPER STORING OF INSTRUMENTS</b>										
Decontamination/sterilisation buckets available	Cleaner	✓								
Sterilization of medical equipment	Health Care Worker	✓		✓						
Collection and transportation of soiled linen and their decontamination	Cleaner/Laundry	✓								
Monitoring of disinfection and of sterilisation practices	Department Head	✓								
Sport Checks	EHT		✓							
<b>CHLORINE PRODUCTION (where available)</b>										
Prioritise use of produced chlorine	CPU	✓								
2 x Production of Chlorine	CPU	✓								
Provision of chlorine to each department	CPU	✓								

Provision of additional chlorine	CPU			✓									
Usage of Brine	CPU	✓											
Safe storage of chlorine	CPU	✓											
Monitoring provision of chlorine to departments	Department Head	✓											
Spot Checks of correct production	EHT		✓										
<b>HAND HYGIENE</b>													
Soap, hand towels and/or alcohol based rub available	Cleaner		✓		✓					✓			
Hand washing water available	Cleaner	✓			✓					✓			
Monitoring availability of handwashing supplies and hand wash water	Department Head	✓											
Spotchecks	EHT		✓										
<b>PERSONAL PROTECTIVE EQUIPMENT (PPE)</b>													
Monitoring availability of PPE	Department Head		✓										
Provision of PPE	EHT			✓									
<b>HEALTH CARE WASTE MANAGEMENT</b>													
Segregation of waste	Cleaner	✓			✓					✓			
Collection of waste from departments and toilets	Cleaner	✓			✓					✓			
Collection of waste by Council	EHT		✓								✓		
Incineration of waste	Incinerator operator	✓			✓					✓			
Spotchecks	EHT		✓										
<b>MAINTENANCE</b>													
Maintenance of equipment and departments	EHT		✓										
Monitoring availability of supplies for maintenance as required	EHT			✓									
Monitoring of WASH infrastructure	EHT		✓										
Repair of WASH infrastructure	EHT			✓									

\*CPU: Chlorine Production Unit



## 9.3 Infection Prevention Control Committee Meeting Agenda and Minutes

Millennium Development Goal Initiative

Accelerating the Reduction of Maternal, Neonatal and Child Mortality



United Nations  
Z A M B I A

**Date:**

**Time:**

**Attendance:**

Suggested participants include; In-charge, EHT, Department Heads and District EHT.

These minutes can be used to report back to the District Office.

Time	Agenda Item	Minutes (including: description, Action taken and responsible person)
	Updates from previous meeting	
	Review EHT checklist and discuss issues arising including availability of soap and water	
	Cleaning update	
	Waste management; collection and segregation at generation	
	Adequate PPE supplies	
	Maintenance	
	Quarterly Health Facility Clean Up (next date, time, cost)	
	Budget allocation for IPC	

	Water Quality Check (next check details; time and date, current and past water quality results)	
	Infection Update and diseases trend No. last month No. this month	
	Discuss results; strengths, weaknesses, challenges and opportunities for improvement	
	Any Other Business (AOB)	
	Follow up from district required? If so what?	
	<b>Next Meeting</b> Date: Time: District Representative Co Chair (every quarter):	

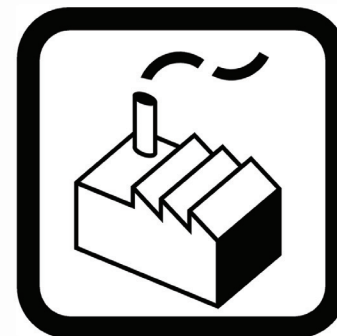


# PROCEDURES



MILLENNIUM DEVELOPMENT GOAL INITIATIVE

A Joint Programme Accelerating the Reduction of Maternal, Neonatal and Child Mortality



GOVERNMENT OF  
THE REPUBLIC OF  
ZAMBIA



EUROPEAN UNION



UNITED NATIONS  
Z A M B I A

## Millennium Development Goal Initiative

Accelerating the Reduction of Maternal, Neonatal and Child Mortality



United Nations  
Z A M B I A

MDGi: A Joint Programme of the Government of the Republic of Zambia – European Union – United Nations