



REPUBLIC OF ZAMBIA  
MINISTRY OF HEALTH



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

**THE TRAINING MANUAL**

**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.

  
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**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  
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## ACRONYMS

DHMT	District Health Management Team
EHT	Environmental Health Technician
GLASS	Global Analysis and Assessment of Sanitation and Drinking Water Survey
HAI	Health care Acquired Infections
HCW	Health Care Worker
HF	Health Facility
HLD	High-Level Disinfection
IEC	Information, Education and Communication
IPC	Infection Prevention and Control
MCDMCH	Ministry of Community Development, Mother and Child Health
MDGi	Millennium Development Goal initiative
MLG	Ministry of Local Government
MNCH	Maternal, Neonatal and Child Health
MOH	Ministry of Health
MTC	Ministry of Transport and Communications
PPE	Personal Protection Equipment
PMO	Provincial Medical Officer
SOP	Standard Operating Procedure
UNICEF	United Nations Children’s Fund
VIP	Ventilated Improved Pit
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
ZEMA	Zambia Environmental Management Agency

## INTRODUCTION

Primary health care facilities and hospitals are the first point of care for sick and vulnerable populations and are critical to responding to public health emergencies and outbreaks. Patients are highly susceptible to infections and rely on a safe and clean environment. A lack of appropriate Water, Sanitation and Hygiene (WASH) services increases exposure of infection to patients and health care workers. Millions of preventable infections—including neonatal infections—occur every year within the healthcare environment because of inadequate attention to WASH (Rehfuess, Bruce & Bartram, 2009; Bartram & Cairncross, 2010)<sup>1</sup>. Healthcare setting associated infections contributes to morbidity and mortality and to a loss of health-sector resources worldwide.

Good Infection Prevention and Control (IPC) practices with WASH are simple and routine, but require a coordinated and continuous approach to ensure reduction of health care acquired infections (nosocomial) to patients, healthcare workers and the community. This curriculum will serve as a guide for health care workers to enhance their knowledge and skills to prevent and control of disease and disease transmission in their health facility.

## COURSE OBJECTIVES

The objectives of this course are to understand what IPC with WASH is, and its role in reducing health care acquired infections. At the end of this course, participants will be able to demonstrate knowledge and skills in:

- Use of PPE
- Cleaning, Decontamination and Sterilisation
- Waste Management
- Hand Hygiene

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<sup>1</sup>Rehfuess E, Bruce N, & Bartram J. *More health for your buck: health sector functions to secure environmental health*. Bulletin of the World Health Organisation, 2009.

## TRAINING SCHEDULE

The IPC with WASH training course is a five half-day training that includes the following components:

- *2 days training on overall IPC with WASH for health care workers.*
- *1 day training on hand hygiene for health care workers.*
- *1 day training on Monitoring and supervision*
- *1 day of practical activities at facility level*

The trainings sessions take place in the afternoons, when the patient load in the health facilities is generally lower than in the mornings.

The number of participants per class will vary depending on the size of the health facility and their number of staff. Nevertheless, it is advised to limit sessions to 20 participants to allow participation and practical activities. The overall training schedule is recommended as follows:

### TRAINING SCHEDULE FOR IPC WITH WASH

<b>DAY 1: Infection Prevention Control with WASH Training for Health Care Workers</b>	
<b>Time</b>	<b>Item</b>
12:30	<ul style="list-style-type: none"><li>• Workshop opening &amp; setting ground rules</li><li>• Introduction</li><li>• Pre-test questionnaire</li><li>• Selection of daily feedback teams</li></ul>
13:45	<ul style="list-style-type: none"><li>• Why IPC with WASH</li></ul>
15:00	Tea Break
15:15	<ul style="list-style-type: none"><li>• Introduction to the IPC WASH manual / National IPC guidelines</li></ul>
15:30	<ul style="list-style-type: none"><li>• Cleaning and Housekeeping, PPEs and Monitoring tools</li></ul>
16.30	Wrap-up

<b>DAY 2: Infection Prevention Control with WASH Training for Health Care Workers</b>	
12:30	<ul style="list-style-type: none"> <li>• Warm-up &amp; recap of day 1</li> </ul>
12:45	<ul style="list-style-type: none"> <li>• Decontamination, High-Level Disinfection (HLD) and sterilisation, PPEs and Monitoring tools</li> </ul>
13:45	<ul style="list-style-type: none"> <li>• CPU introduction, chlorine concentration test</li> </ul>
14:15	<ul style="list-style-type: none"> <li>• Chlorine dilutions Demonstrations</li> </ul>
14:15	<ul style="list-style-type: none"> <li>• Water quality monitoring, chlorine doser and residual chlorine test</li> <li>• Hand washing and drinking points chlorine dosage</li> </ul>
15:00	Tea break
15:15	<ul style="list-style-type: none"> <li>• Waste management, PPEs and Monitoring tools</li> </ul>
16:00	<ul style="list-style-type: none"> <li>• Incinerator introduction and logbook</li> </ul>
16:30	Wrap-up
<b>DAY 3: Hand Hygiene Training</b>	
12:30	<ul style="list-style-type: none"> <li>• Hand hygiene introduction</li> </ul>
13:00	<ul style="list-style-type: none"> <li>• Pathogen transmission</li> </ul>
13:30	<ul style="list-style-type: none"> <li>• Hand hygiene videos &amp; discussion</li> </ul>
14:30	<ul style="list-style-type: none"> <li>• Types of hand hygiene</li> </ul>
15:00	Tea Break
15:15	<ul style="list-style-type: none"> <li>• When to wash hands?</li> </ul>
15:30	<ul style="list-style-type: none"> <li>• Exercise: Hand washing</li> </ul>
16:30	Wrap-up

<b>DAY 4: Monitoring and supervision</b>	
12:30	Warm up & Recap of prior days
12:45	<ul style="list-style-type: none"> <li>• Review of all Monitoring tools</li> </ul>
13:45	<ul style="list-style-type: none"> <li>• IPC Committee definition, roles, members, reporting</li> </ul>
14:30	Tea break
14:45	<ul style="list-style-type: none"> <li>• Information, Education, Communication (IEC) to patients</li> </ul>
15:15	<ul style="list-style-type: none"> <li>• Sign posting</li> </ul>
16:30	Wrap-up & closure
<b>DAY 5: Practicals</b>	
12:30	<ul style="list-style-type: none"> <li>• Post-test evaluation, Course evaluation</li> </ul>
12:45	<ul style="list-style-type: none"> <li>• Site screening against IPC WASH in Health principles</li> </ul>
13:45	<ul style="list-style-type: none"> <li>• Labelling, sign posting, monitoring and supervision forms</li> </ul>
14:45	Tea break
15:00	<ul style="list-style-type: none"> <li>• Lessons learned</li> </ul>
15:45	<ul style="list-style-type: none"> <li>• Commitments</li> </ul>
16:30	Wrap-up & closure

## GENERAL TRAINING REQUIREMENTS

- **Electricals:** 1 Video Projector, 2 electrical adapters, computer speakers
- **Stationary:** Copies of Checklists/Logs/Monitoring tools, IEC materials/signage, Pens, Note books, Markers Flip charts, Presentation handout
- **HF IPC Training Demonstrations:** Chlorine, Waste bins- 2, Sharps box, Bin liners (yellow & black), PPE
- **Hand Washing Training Demonstrations:** Hand sanitizer, Hand towel, Hand washing soap, Hand wash basin or Bucket & basin (Kalingalinga bucket) for hand washing, Correct Hand washing demonstration kit (powder)

## TRAINING TECHNIQUES

Techniques used in this manual include the following:

- **Presentations:** Activities conducted by the facilitator to convey information, theories, or principles.
- **Demonstrations:** Perform a specific operation or job, showing the participants how to do it. The participants then practice the same task.

### Advantages

- Provides step-by-step process to participants.
- Allows immediate practice and feedback.

### Tips

- Explain different steps of the procedure.
- Demonstrate an inappropriate skill, then an appropriate skill, and discuss the differences.
- Return appropriate demonstration by participants and give feedback.
- Practice.

**Group Discussions**—the role of a trainer during a group discussion is to facilitate the flow of participant’s comments and experience. The facilitator need not comment after each participant speaks, but periodic comments and open-ended questions can be helpful.

## SETTING THE LEARNING CLIMATE

Pre-read each session and review all materials before each training session; this will make you as the trainer comfortable with the material.

Ensure that you keep time and clearly establish yourself as the facilitator by calling the group together.

All materials to be used in the session should be ready at least a week before, these include: hand-outs, flip charts, and power point presentations, etc.

Create a good relationship and make your participants feel welcome at all times, this helps you gain their attention and interest. Be ready for questions; try your best to answer all questions participants may have. However, if there is a question to which you do not know the answer, let the participants know you'll research the answer and get back to them.

### **Applying Lessons Learned to Real-life Situations**

As a facilitator, promote the discussion on how the information learned in an activity will be helpful in their daily work. Discuss problems they might experience in applying or adapting what they have learned to their own or different situations. Ensure to focus on realistic solutions and adaptations.

### **Providing Closure**

- Briefly summarise the activities at the end of each day.
- Refer to the objective(s) and discuss whether and how they were achieved.
- Help participants leave with positive feelings about what they have learned and accomplished.

## WORKSHOP DAY 1: INFECTION PREVENTION CONTROL WITH WASH TRAINING FOR HEALTH CARE WORKERS

### DAY 1: REQUIRED MATERIALS

- **Training Materials Required** Laptop, Video projector, 2 electric adaptors, 1 paper flip chart, and packet of coloured markers.
- **Supplies for Participants:** Pens and notebooks.
- **Supplies for demonstrations:**
  - **Monitoring tools:** stock cards
  - **Posters** decontamination bay, chlorine 0.5%, soapy water
  - **Personal Protective Equipment:** 1 box/pack masks & respirators, 5 plastic/rubber aprons, 1 coat/work suit, 2 pairs heavy duty gloves, 1 box surgical gloves, 1 box examination gloves and 1 pair gum boots.

### DAY 1: TRAINING SCHEDULE

DAY 1 IPC with WASH Training for HCW	
Time	Item
12:30	Workshop opening & setting ground rules Introduction Pre-test questionnaire
13:45	Personal Protective Equipment (PPE) PPE demonstrations
15:00	Tea Break
15:15	Monitoring tools
15:30	Cleaning, decontamination, HLD and sterilisation
16.30	Wrap-up

## PRE-TEST QUESTIONNAIRE

A pre-test is administered to participants to obtain a baseline level of knowledge, attitudes, and skills regarding the issues to be covered in this training. The facilitator should encourage the participants to answer the questions from their own perspectives. See **Annex 1**.

### **Training notes**

Trainers in an Infection Prevention and Control workshop play several roles:

- **Expert:** the trainer transmits knowledge and skills, answers questions (or promises to obtain information later), and clarifies misconceptions.
- **Facilitator:** the trainer leads the sessions in such a way that participants are encouraged to participate fully in acquiring the new knowledge and skills introduced in the workshop.

Group discussions play a major role in an interactive training programme. To lead group discussions effectively, facilitators will need various facilitation skills. They should know how to deal with different types of participants and uncomfortable discussions.

**START IPC WITH WASH TRAINING FOR HCWs POWER POINT PRESENTATION**

1. Introduction: Follow IPC with WASH for HCW power point presentation for introductory and background slides.
2. Demonstration: PPE

**Personal Protective equipment/clothing Demonstrations**

Ensure that you have all the necessary demonstration materials required available as listed above. You may have to wear the PPE or alternatively call a second person with whom you will demonstrate, how each one of them is worn and how it should be disposed of or cleaned and stored if reusable.

**Gloves**

- Hands must be cleaned prior to putting on gloves.
- Holding the cuff of the gloves, pull the gloves into position taking care not to contaminate the glove from the wearer's skin especially when the second glove is being put on as the gloved hand of the first glove can touch the un-gloved second hand if care is not taken.

**Apron**

- Remove plastic apron from the dispenser/box.
- Pull the apron over the head, avoid touching hair.
- Tie the apron loosely at the back.

**Masks**

- Worn as part of routine universal precaution when there is risk of airborne aerosol of blood, body fluids, administration of toxic drugs or contact with patients who have smear positive tuberculosis or multi-drug resistance tuberculosis.

**Gown**

- Wear gowns/aprons if soiling is anticipated
- Sterile ones gowns should be used in theatre

**Protective footwear**

- Rubber boots or leather shoes provide extra protection to the feet from injury by sharps or heavy items that may easily fall. They must be kept clean.
- When possible, avoid wearing sandals, thongs, or shoes made of soft materials.

### 3. Monitoring tools:

Give out all the tools to be used under this section to each of the participants. Ensure that you review each one of them and get feedback from them.

- **Supply List (SOP):** Explain the list of supplies all health facilities should have to ensure effective IPC practices.
- **Stocktake form (SOP):** Explain the importance of the cards in monitoring stocks of each PPE product and how that can contribute to IPC in the health facility.
- **EHT Monthly Checklist (SOP):** Explain that the EHT/In-charge should monitor and supervise the implementation of the SOPs.
- **Consolidated Monthly Checklist (SOP):** Explain the 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 with WASH by the EHT/In-charge.
- **IPC Agenda (SOP):** Explain how the agenda for the monthly IPC committees ensures that WASH standards are been addressed and action taken where necessary.

## WORKSHOP DAY 2: IPC WITH WASH TRAINING FOR HCW

### DAY 2: REQUIRED MATERIALS

- **Training Materials Required** Laptop, Video projector, 2 electric adaptors, 1 paper flip chart, and packet of coloured markers.
- **Supplies for Participants:** Pens and notebooks.
- **Supplies for demonstrations:**
  - **Monitoring tools:** Including stock cards, chlorine request forms, chlorine delivery form, chlorine dilution guide, label, waste quantification form and the cleaning log.
  - **Posters/signage:** Hazardous waste, Infectious waste, domestic waste, waste segregation label.
  - **Cleaning supplies:** Monitoring tool examples, soft brush, 3 buckets and chlorine.

### DAY 2: TRAINING SCHEDULE

DAY 2 IPC with WASH Training for HCW	
<i>Time</i>	<i>Activity</i>
12:30	Warm-up & recap of day 1
12:45	Demonstrations: Chlorine dilutions, decontamination & cleaning
13:15	Monitoring tools
13:30	Waste management Demonstrations: Waste management
14:30	Monitoring tools
15:00	Tea break
15:15	Housekeeping Monitoring
16:30	Wrap-up

## GETTING STARTED

A participant is invited to lead the group in some warm ups.

## RECAP OF DAY 1

Let the selected participants give a summary of the previous day's session and emphasize on the most important issues. A selected participant gives a recap on activities for day 1.

## DEMONSTRATIONS AND PRESENTATION: DECONTAMINATION, AND CLEANING OF INSTRUMENTS

### START IPC WITH DEMONSTRATION ON CHLORINE DILUTION, DECONTAMINATION AND CLEANING POWERPOINT PRESENTATION

Make sure that all the demonstration materials are available and on hand.

#### How to use chlorine Powder Concentrate:

- Determine the concentration (% concentrate) of the powder you are using.
- Determine grams bleach needed (use formula below)

$$\text{Grams/Litres water} = \frac{\% \text{ Dilute solution} \times 1000}{(\% \text{ Concentrate})}$$

Mix measured amount of bleach powder with 1 litre of water.

Example: to make 0.5% chlorine solution from 3.5% concentrate chlorine powder

$$\text{Total parts water} = \frac{0.5\% \text{ Dilute solution} \times 1000}{35\% \text{ Concentrate powder}} = 14.2 \text{ grams/litre}$$

Formula: Mix 14.2 grams of 35% concentrate chlorine powder with 1 litre of water JIK  
To make a 0.5% chlorine solution

#### DECONTAMINATION AND CLEANING DEMONSTRATION

Requirements: - chlorine, water, washing powder, one or two instruments (receiver, forceps etc.), 3 buckets (for chlorine, soapy water, clean plain water), watch/clock,

- Reconstitute chlorine to the right strength for decontamination i.e. 0.5%;
- With gloved hands add instruments to the chlorine solution ensuring that they are immersed and take note of the time
- After 10 minutes, remove instruments and place them in the soapy water for cleaning;
- Clean instruments thoroughly, a brush may be used to clean certain toothed instruments
- Rinse

## Monitoring Tools

Review all the monitoring tools in this unit one after the other and ensure that participants understand the importance of each one of them.

Ask participants for feedback on the tools and the challenges they may encounter to implement them and get ideas from them on how to ensure that tools are used. The following are the tools:

- Chlorine request form
- Chlorine delivery form
- Chlorine production log form
- CPU daily reminder
- Chlorine dilution guide

## PRESENTATION AND DEMONSTRATIONS: WASTE MANAGEMENT

1. Follow Waste Management slides
2. Demonstrations: Waste Management

### WASTE MANAGEMENT DEMONSTRATION

Requirements: - Colour coded bin liners (black, yellow), 3 waste bins, and sharps box.

- Show the trainees the requirements for waste segregation at source.
- Explain what kind of waste should be placed into a sharps box; a waste bin with a yellow liner/container; a waste bin with brown liner/container; and a waste bin with black liner/container. Let them demonstrate.
- Explain how each of the waste in the containers should be disposed of.

## Distribute Monitoring Tools

Hand out all IPC with WASH tools and posters bulleted below for this section then review each one of them with the participants, and ask them for feedback.

- Waste quantification form.
- Posters: Infectious waste, Domestic waste, Sharps, Waste segregation, Biohazard waste.

## WORKSHOP DAY 3: HAND HYGIENE TRAINING

### DAY 3: REQUIRED MATERIALS

- **Training Materials Required** Laptop, Video projector, 2 electric adaptors, 1 paper flip chart, and packet of coloured markers.
- **Supplies for Participants:** Pens and notebooks.
- **Supplies for demonstrations:**
  - **Monitoring tools**, stock cards and hand washing water provision form.
  - **Cleaning supplies:** Soft brushes, 3 hand washing buckets and chlorine, soap, paper towel/hand towel.

### DAY 3: TRAINING SCHEDULE

DAY 3 Hand Hygiene Training	
<i>Time</i>	<i>Activity</i>
12:30	Introduction Warm-up Hand hygiene introduction
13:00	Pathogen transmission
13.30	Hand hygiene videos & discussion
14.30	Types of hand hygiene
15:00	Tea Break
15:15	When to wash hands?
15:30	Exercise: Hand washing
16:30	Wrap-up

**START HAND HYGIENE TRAINING FOR HCWs POWER POINT  
PRESENTATION**

**1. Hand Hygiene Introduction**

The facilitator should welcome the participants to the training and encourage them to actively participate throughout the training.

Go through the objectives of this part of the training and ask for questions or concerns.

Objective of hand hygiene session:

- To increase the number of health care personnel who are washing hands in order to reduce the spread of infection.
- To enhance correct hand hygiene skills of health workers

**2. Follow slides on pathogen transmission**

- Follow through the slides and ensure that the participants clearly see all images

**3. Follow Hand Hygiene Videos in slides**

Connect the computer speakers to the laptop and ensure that the participants are quiet and attentive

To play the video, click on the hyperlink highlighted in the slides; the video will automatically start playing (You should have already practiced playing the video prior to the session).

<http://www.youtube.com/watch?v=LvRP3c5n3P8>

and

<http://www.youtube.com/watch?v=mWe51EKbewk>

**4. Follow slides on:**

- Types of hand hygiene
- When to wash hands

## 5. Demonstration: Water and Pepper

### Materials:

- Bowl of water
- Pepper
- Soap

### Soap Demonstration:

- Sprinkle black pepper in a bowl of water. The pepper will float on top.
- Explain that the pepper represent germs. In the center of the bowl add a few drops of dishwashing soap.
- Watch the pepper disperse when the soap is added. Explain, just like the soap pushed the pepper germs away, when you wash your hands soap helps remove the germs from your hands.
- Discuss the importance of using soap when washing hands.

## WORKSHOP DAY 4: HAND HYGIENE TRAINING

### DAY 4: REQUIRED MATERIALS

- **Training Materials Required** Laptop, Video projector, 2 electric adaptors, 1 paper flip chart, and packet of coloured markers.
- **Supplies for Participants:** Pens and notebooks.
- **Supplies for demonstrations:**
  - **Monitoring tools:** including stock cards, hand washing water provision form.
  - **Posters/signage:** hand washing steps, hand washing stations.
  - **Cleaning supplies:** soft brush, 3 hand washing buckets, chlorine, soap, hand towel/paper towel.

## DAY 4: TRAINING SCHEDULE

DAY 4 Hand Hygiene Training	
<i>Time</i>	<i>Activity</i>
12:30	Warm up & Recap of prior day
12:45	Demonstrations: Hand Hygiene
13:45	Information, Education, Communication (IEC)
14:30	Tea break
14:45	Discussion: Making hand washing practical
15:15	Post-test evaluation Course evaluation
16:30	Wrap-up & closure

## RECAP OF DAY 3

- Let the selected participant give a brief recap of the previous day's lessons highlighting the most important issues.

**DEMONSTRATION: HAND HYGIENE (REFER TO WHO HAND HYGIENE GUIDELINES)**

**Demonstrations: Hand Hygiene Demonstration (WHO Hand Hygiene guidelines)**

*Requirements: running water, soap, sanitizer/alcohol-based formulation*

**Hand Hygiene with soap and water**

- Wet hands with water
- Apply enough soap to cover all hand surfaces
- Rub hands palm to palm
- Right palm over left dorsum with interlaced fingers and vice versa
- Palm to palm with fingers interlaced
- Backs of fingers to opposing palms with fingers interlocked
- Rotational rubbing of left thumb clasped in right palm and vice versa
- Rotational rubbing, backward and forward with clasped fingers of right hand in left palm and vice versa
- Rinse hands with water
- Dry hands thoroughly with single use towel
- Turn off faucet with towel or elbow
- Procedure should take **40-60 sec.**

**Hand Hygiene Technique with Alcohol-Based Formulation**

- Apply a palmful of the product in a cupped hand and cover all surfaces
- Rub hands palm to palm
- Right hand over left dorsum with interlaced fingers and vice versa
- Palm to palm with fingers interlaced
- Backs of fingers to opposing palms with fingers interlocked
- Rotational rubbing of left thumb clasped in right palm and vice versa
- Rotational rubbing, backward and forward with clasped fingers of right hand in left palm and vice versa
- Once dry, your hands are safe
- Procedure should take **20-30 sec.**

### **How to prepare a waterless alcohol-based solution for hand rub and surgical hand scrub**

A non-irritating, alcohol-based hand rub can be made by using the following: glycerine, propylene glycol or sorbitol to alcohol (Methylated spirit 60-70%) 10ml and 5mls syringes) pre-boiled or distilled water, measuring jug and storage container.

#### **Formula to dilute Spirit**

##### **Example:**

Available Methylated Spirit 95% (250ml)

Required Methylated =  $\frac{\text{Concentration needed} \times \text{volume}}{\text{Available concentration}}$

E.g.

$$= \frac{70\% \times 250\text{mls}}{95\%} = 184$$

This means that you subtract 184mls from 250mls

$$250 - 184\text{mls} = 66\text{mls}$$

- Therefore it means you remove 66mls of spirit from 250ml and add 66mls of pre-boiled or distilled water.
- Please note that the volume remains 250ml but the strength changes to 70%.
- Add 1ml of glycerine to 50mls of methylated spirit.
- Therefore for 250mls methylated spirit you add 5mls glycerine

**Discussion:** Making hand washing practical (This is a participatory discussion.)

The facilitator will lead the discussion with the participants on hand washing challenges to come up with solutions that they can utilize while working in environments that may not support the practice of washing hands.

The facilitator will make sure that the discussion remains within the intended context so that the intended purpose is achieved within the allocated time.

## POST –TEST EVALUATION AND COURSE EVALUATION

A post-test is administered to participants to evaluate the level of knowledge, attitudes, and skills participants have acquired in this training.

The facilitator should encourage the participants to answer the questions from their own perspectives.

Disperse the post-test assessment, and ask the participants not to refer to any of the materials given to them while answering.

## WORKSHOP DAY 5: GENERAL IPC WITH WASH FOR CLEANERS AND GROUND STAFF

### DAY 5: REQUIRED MATERIALS

- **Training Materials Required** Laptop, Video projector, 2 electric adaptors, 1 paper flip chart, and packet of coloured markers.
- **Supplies for Participants:** Pens and notebooks.
- **Supplies for demonstrations:**
  - **Monitoring tools**, including stock cards, cleaning log, waste quantification form, Chlorine request form, chlorine delivery form, chlorine dilution guide, mobile water points form.
  - **Cleaning supplies:** soft brush, 3 hand washing buckets, chlorine, soap, paper towel/hand towel.
- **Posters/Signage/Monitoring tools**
  - Hazardous waste
  - Infectious waste
  - Domestic waste
  - Waste quantification forms
  - Hand washing labels
  - Decontamination bay

### DAY 5: TRAINING SCHEDULE

DAY 5- General IPC with WASH for Cleaners & Ground staff	
<i>Time</i>	<i>Activity</i>
12:30	Warm-up & introductions
12:45	Why IPC with WASH?
13:00	Using PPE
13:30	Decontamination, cleaning, HLD & sterilisation Making concentrations of chlorine

	Demonstrations: Decontamination & cleaning of instruments
14:45	Tea break
15:00	Waste Management Demonstrations: Waste segregations
15:45	House-keeping
16:25	Hand Hygiene
17:00	Wrap-up & closure

## PRESENTATIONS AND DEMONSTRATIONS: IPC WITH WASH FOR CLEANING & GROUND STAFF

### START IPC WITH WASH FOR CLEANERS & GROUND STAFF POWER POINT PRESENTATION

1. Follow why IPC with WASH slides
2. Follow Using PPE slides
3. Demonstrations: PPE (Refer to demonstrations for the HCW training)
4. Follow decontamination, cleaning, HLD and sterilisation slides  
**Demonstrations:** decontamination and cleaning of instruments (*Refer to demonstrations for the HCW training*)
5. Follow Waste management slides  
**Demonstrations:** (refer to waste management slides)
6. Follow House-keeping slides

#### Why IPC WASH?

Using simple language, explain the relationship between IPC and WASH, this will give the participants a greater understanding of how critical their role is in preventing hospital acquired infections.

### **Decontamination, Cleaning, HLD & Sterilisation**

Since cleaners are usually involved in the processing of instruments, ensure that participants understand the importance of their role in this.

Emphasise the importance of following all the steps if the intended result is to be achieved.

### **Making Different concentrations of chlorine**

Help participants to understand the right concentration for the right cleaning activity and the consequences of doing it the wrong way.

Review the chlorine dilution guide with them and ensure that they all understand it.

#### **Waste Management Demonstration**

Ensure that you have the necessary materials needed for the demonstration: sharps container, 2 waste bins, bin liners (black & yellow), PPE (mask, examination gloves, heavy duty gloves, gum boots, plastic/rubber apron), strapping tape.

#### **Waste Segregation**

- 3 bin system; demonstrate to the participants what each of the bins/containers is used for
- Colour codes; use colour coded bin liners in the waste bins and if possible the two waste bins should be yellow and black in colour

Labelling: waste bins with labels to show type of waste they contain

#### **Posters/Signage/Monitoring tools**

- Hazardous waste
- Infectious waste
- Domestic waste
- Waste quantification forms

## **Hand hygiene**

- Posters & Signage; hand washing steps, hand washing only taps
- Demonstrate to participants the correct step by step hand washing procedure- follow the steps laid down on day 4 of the training.

## **Hand Hygiene Videos**

- Pathogen transmission video
- Hand washing steps video

## ANNEXES

### ANNEX 1. PRE & POST ASSESSMENT FORM

#### Health Facility Infection Prevention & Control with WASH

##### Pre-Assessment Form

Name: \_\_\_\_\_ Position: \_\_\_\_\_

Health Facility: \_\_\_\_\_ Department: \_\_\_\_\_

##### Section A: True/False

1. Many organisms that cause disease in humans multiply and can be transmitted from person to person.  
T / F
2. Making sure people are immune or vaccinated is NOT one of the methods of preventing the spread of infection.  
T / F
3. Double gloving should be used if you anticipate contact with blood/body fluids for less than 30 minutes.  
T / F
4. Disposable masks are sufficient to wear when caring for someone with MDR TB.  
T / F
5. Antiseptics are chemicals used on skin to reduce the number of microorganisms.  
T / F
6. Encapsulation and recycling are disposal options for waste with a high content of heavy metals (e.g., mercury, cadmium) such as batteries or thermometers.  
T / F
7. High-level decontamination of instruments is the most effective cleaning method to minimise the risk of transmission of microorganisms to health workers, cleaning staff and patients.  
T / F
8. Instruments and equipment are divided into three categories based on the degree of risk of infection associated with their use and the level of processing required for each.  
T / F
9. It is not necessary to wash hands after removing examination or procedure gloves.  
T / F
10. Waste segregation should be done at the point of generation in a health facility  
T / F
11. Incorrect concentration and inappropriate disinfectants can result in excessive costs  
T / F

**Section B: Multiple Choice** (*chose the correct answer*)

12. To decontaminate instruments, they must be soaked in what percentage of chlorine solution?
- 0.01%
  - 0.1%
  - 0.5%
  - 1%
13. How much water should be above the instruments when you are high-level disinfecting, by boiling?
- 1.0 cm
  - 1.5 cm
  - 2.0 cm
  - 2.5 cm
  - 3.0 cm
14. When high-level disinfecting instruments by boiling; ensure that instruments boil for
- 30 minutes
  - 20 minutes
  - 10 minutes
15. To high-level disinfect instruments by chemical solution; they must be soaked in what percentage of chlorine solution?
- 0.01%
  - 0.1%
  - 0.5%
  - 1%
16. Infectious waste should be classified and segregated into different colour bags. (*Circle all that apply.*)
- White
  - Black
  - Green
  - Yellow
  - Blue
17. Radioactive waste should be separated into:
- Yellow bag
  - Encapsulated
  - Red bag
18. Sharps containers should be disposed of when they are how full?
- 1/2
  - 3/4
  - Completely full

19. When cleaning and mopping floors what chlorine concentration is used?
- a. 0.01%
  - b. 0.1%
  - c. 0.5%
  - d. 1%
20. Washing your hands should be done when? *(Circle all that apply.)*
- a. Before examining a patient.
  - b. Before putting on procedure gloves.
  - c. Before any medical procedure.
  - d. After handling any contaminated objects.
  - e. After touching any blood, body fluids, and secretions.
  - f. After removing procedure gloves.
  - g. After any medical procedure.

## ANNEX II. MONITORING TOOLS

- Chlorine request form
- Chlorine delivery form
- Chlorine production log form
- CPU daily reminder
- Waste quantification form
- IPC agenda and minutes
- Maintenance surveillance form
- Mobile water points form
- Monthly checklist IPC HWM

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

1. Mr. Mulonda Mate (Deputy Director, Environmental and Occupational Health)
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5. Mr. Meetwell Cheelo (Chief Environmental Health Officer, Lusaka Province)
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10. Mr. Lavuun Verstraete (WASH Specialist, UNICEF)
11. Mr. Hilton Chibeleka (UNICEF)
12. Mr. Alain Phe (UNICEF)

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## Millennium Development Goal Initiative

Accelerating the Reduction of Maternal, Neonatal and Child Mortality



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