Infection Prevention and Control

Standard Operating Procedures

For

Cholera Treatment Centres and Units in Malawi

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Safeguarding Africa's Health

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Acronyms/Abbreviations

ABHR	Alcohol Based Hand Rub
CTC	Cholera Treatment Centre
CTU	Cholera Treatment Unit
HAIs	Healthcare Associated Infections
HCF	Healthcare Facility
HCW	Healthcare Workers
IPC	Infection Prevention and Control
MoH	Ministry of Health
ORP	Oral Rehydration Point
ORS	Oral Rehydration Solution
QI	Quality Improvement
QMD	Quality Management Directorate
WASH	Water Sanitation and Hygiene

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Introduction

Infection prevention and control (IPC) in a CTC/ CTU

IPC are all practical measures taken in the healthcare facility to prevent harm caused by infections to patients, health workers and communities.

The main goal of IPC in the cholera response is to

- To reduce transmission of health care-associated infections of cholera and any other infectious disease
- To enhance the safety of staff, patients and visitors
- To enhance the ability of the organization/health care facility to respond to an outbreak
- To reduce the risk of the hospital (health care facility) itself amplifying the outbreak

Water, Sanitation and Hygiene (WASH)

WASH are all measures taken to guarantee environmental hygiene, safe water of all used within the health facility. It encompasses water, sanitation, waste management, cleaning within the health facility which in this case is CTU/C. A complete WASH package in the CTU/CTC reduces the risk of spread of Vibrio cholerae inside and outside the CTC/CTU.

The probability of spreading or acquiring cholera through a CTC/CTU can be highly reduced when proper IPC and WASH measures are respected, followed and monitored. These measures are, in principle, valid in CTC/CTUs and ORPs, although they need to be adapted to the specific characteristics of the facility concerned.

1 Screening, Triage and Isolation

1.1 Screening

Aims **at** establishing separation of patients on arrival at all health facilities entrances to reduce mixing of patients with cholera and other patients in the health facility. It also establishes effective patient flow and isolation of patients in the facility for appropriate management and care. The following screening questions should be asked at the entrance:

1. Do you have watery loose stools?
2. Are you vomiting?

If the answer to any of the two questions is YES, please refer the patient to the cholera treatment area for further triage. If the answer to the two questions is NO, please refer the patient to the general OPD area for further triage. Details of the screening questions and algorithm can be found in ***annex 1***

1.2 Triage

All cholera patients sent to the CTC/CTU, should be categorized according to severity of symptoms to enhance proper IPC measures

1.3 Isolation

All cholera patients should be isolated from other patients to reduce the risk of spread of infection in the health facility hence the need to set up a CTC/CTU setup and design of CTC/CTU can be found in Annex 2. While the patient is in CTC/TCU, the IPC focal point should facilitate further separation of patients according to severity of symptoms to support proper management of IPC.

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

2 Hand Hygiene

2.1 Hand hygiene

Hand hygiene avoids the transmission of Vibrio cholerae and other pathogenic micro-organisms in the CTC/CTU. Visibly soiled hands should be washed with soap and water. Alcohol based hand rub should be used when hands are not visibly soiled and should be provided at all points of care. When there is no access to soap, 0.05% chlorine solution can be used as an alternative for hand washing. Hand washing facilities should be placed and used in the following places ; entrance (s), Decontamination area, Triage, Observation area, Staff area, kitchen, patient admission area/ward, patient discharge, Chlorine preparation area, PPE donning area, PPE doffing area, Linen management area, Waste management area, Toilets/latrines, Morgue and Exit(s).

Note : All hand hygiene facilities should be clearly labelled in a manner easy to understand by all users and have the hand washing/rubbing technique poster ***(Annex 3)*** displayed. If 0.05% chlorine solution is used, properly label the time of mixing and time of discard which should be an interval of 4 hours.
In all patient care areas, the WHO five moments of hand hygiene poster and hand hygiene technique poster must be displayed side by side to guide hand hygiene. Both sets should be displayed with five meters of each other and in easily visible places.

WHO's My 5 Moments for Hand Hygiene includes: ***(See poster in Annex 4)***

- Before touching a patient
- Before clean/aseptic procedures
- After body fluid exposure risk
- After touching a patient
- After touching patient surroundings

2.2 ***Table1***: Critical Hand hygiene timing for staff at CTC/CTU

STAFF	
On entering the CTC/CTU	On leaving the CTC/CTU
Donning PPE	Doffing PPE
Entering into a new zone or area (e.g. red zone to green zone)	Exiting a zone or area (e.g. red zone to green zone)
And before (*) : • Examining a patient • An aseptic procedure (e.g. inserting a catheter, introsseous needle) • Preparing ORS solution or food • Feeding a patient • Giving a patient ORS to drink • Eating	**And after :** • Examining a patient • Contact with stool, vomit, blood or other body fluids • Going to the toilet • Preparing a corpse • Handling soiled laundry, waste and emptying excreta and vomit buckets etc.

2.3 ***Table 2***: Critical Hand hygiene timing for patients and guardian

PATIENTS / GUARDIANS	
On entering the CTC/CTU	On leaving the CTC/CTU
And before: • Feeding a patient • Giving ORS to drink. • Eating. • Preparing food for a patient.	**And after:** • Contact with stools, vomit. • Going to the toilet. • Handling soiled laundry.

****Medical staff can use an alcohol based handrub (ABHR) before inserting an IV catheter or introsseous needle. Hand rubbing with an alcohol solution eliminates bacteria, including Vibrio cholerae, but these solutions are not detergents. It is imperative to wash visibly soiled hands with soap and water.***

All patients, caretakers, and visitors should taught and encouraged to wash their hands

Note : Only patients without danger signs, conscious and capable of walking without assistance, are asked to wash their hands on entering the CTC/CTU.

Guards at the entrance of the CTC/CTU should not delay the treatment of serious cases (patients that have difficulty standing up or with altered consciousness) because this systematic hygiene measure is not a priority in patients, in a life-threatening condition.

References

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3 Risk Assessment and Personal Protective Equipment

3.1 Objective	This standard operating procedure (SOP) describes the use of personal protective equipment (PPE) using risk assessment to select appropriate PPE for tasks related to the care of patients with acute watery diarrhea (AWD), when performing cleaning and disinfection of the patient care environment, and when managing waste.
3.2 Key concepts involved	PPE is specialized clothing or equipment worn by health care workers, patients or visitors creating a physical barrier between potentially infectious or hazardous materials and a portal of entry (such as eyes, nose, mouth, or broken skin). PPE's purpose is to reduce the risk of exposure of the wearer to infectious pathogens (bacteria, viruses, fungi, protozoa, parasites) and/or hazardous materials or chemicals (sharps, bio hazardous waste, disinfectants). Risk assessment is the systematic process of assessing all aspects of the work to identify hazards that pose a risk to the safety and health of the worker and the patient.

3.3 Material required	• Soap and clean water for hand hygiene
	  • **OR** Alcohol-based hand rub
	  • **OR** 0.05% chlorine solution
	• Waste bin for disposal of single use PPE
	• Heavy duty bags for PPE waste
	• Receptacles for reusable PPE
	• Buckets for cleaning and disinfection of reusable PPE
	• 70-90% alcohol solution for decontamination of face shields or goggles
	  • Or **wiping** with 0.2% chlorine solution
	• 0.2% chlorine solution for decontamination of heavy duty PPE (i.e gumboots, heavy duty gloves and apron)

3.4 PPE required	• Examination gloves, • Heavy duty gloves, • Heavy duty aprons • Fluid resistant gown, • A face mask (E.g. : respirator and surgical mask) • Face shield (single-use or reusable) • Gumboots
3.5 Responsibilities	Health care personnel: all people, paid and unpaid, in a health care setting who have direct patient contact or potential for exposure to infectious or hazardous materials; including environmental service staff, waste management staff and volunteers who could be exposed. Family members or visitors who participate in patient care and may be exposed to infectious or hazardous materials should also have access to PPE and be instructed on correct use, including proper removal and disposal.

3.6 Considerations	• If local policy is to use contact precautions (gown, gloves) and/or universal masking (medical mask) at all times in the Acute Watery Diarrhea (AWD) isolation area, this policy should take precedence. • Additional PPE not included in this SOP may be indicated by risk assessment if patient is suspected/confirmed of another infectious pathogen (e.g. coverall or respirator for respiratory infections) • Always clean your hands before and after wearing PPE • PPE in appropriate size to the wearer should be available where and when indicated and selected according to risk assessment. • When there is an identifiable risk (e.g. body fluid exposure), PPE should be donned before contact with the patientor patient environment. • Never use expired PPE • Always remove PPE immediately after completing the task and/or leaving the patient care area • Never reuse disposable PPE • If reusable PPE is used, clean and disinfect PPE between each use • Doff/discard PPE if it becomes contaminated or damaged • Always remove PPE carefully to avoid self-contamination

3.7 Risk assessment for PPE in the context of AWD

Step	Action
1.	**Perform a risk assessment** for the immediate task that needs to be performed on a patient presenting with AWD or within a patient care environment which provides care for patients with AWD and gather the PPE needed for the task being performed. **If** performing patient care for a patient with AWD or cleaning and disinfecting the patient environment where there is **body fluid exposure risk** (e.g. patient or patient environment is soiled with diarrhea or vomitus, contact with mucous membranes or non-intact skin, intravenous catheter insertion or maintenance, cleaning and disinfection of small volume of soiling) **then** wash hands and don examination gloves.

	If performing patient care where there is a **risk of a splash or spray of body fluids** (e.g. handling buckets containing diarrheal or vomitus output, bathing or dressing patients with incontinence) **then** wash hands and don fluid resistant gown, face shield, and examination gloves. If performing cleaning and disinfection, where there is a risk of a splash or spray of body fluids and chemicals (e.g. disinfecting or cleaning large volume of soiling, changing/handling/laundry of heavily soiled linen, decontamination of medical instruments when using chlorine solutions) **then** wash hands and don Heavy duty aprons, face shield, and Heavy duty gloves. **If** performing cleaning and disinfection of patient environment **with disinfectants then** wash hands and don filtering face piece respirator, gumboots, face shield, and heavy duty gloves and apron, **If** performing **waste management duties** (transporting, treatment and disposal), perform risk assessment for exposure to body fluids, potential tears in bags/containment receptacles, and other exposure risks as indicated above. **Then**, at minimum, don heavy duty gloves and apron, gumboots, face shield, to reduce risk of exposure to sharps, chemicals, and infectious waste. Select additional PPE where indicated by risk assessment.
2.	**Use the following order to don PPE** depending on the PPE selected, **1. Perform hand hygiene** **2. Put on gumboots** **3. Put on fluid resistant gown** (where indicated by risk assessment) • Choose the correct size • The opening goes at the back • Be sure to tie at the neck and the waist 4a. **Put on face mask** (where indicated by risk assessment) • Place mask to cover nose, mouth and chin using the ear straps to keep it in place

	• Place the nose wire at the bridge of the nose and press down with index and middle fingers of both hands to fit snuggly on the face.
	OR
	
	4b. Put on filtering face piece respirator (when preparing chlorine solutions)
	• Place respirator to cover nose, mouth and chin
	• Place one strap at the top of the ears and one at the base of the neck
	• Adjust and perform a seal check:
	  • Cup the respirator with both hands
	  • Inhale – there should be no leakage
	  • Exhale – there should be no leakage
	
	5a. Put on face protection – face shield (where indicated by risk assessment)
	• A face shield should go over the front of the eyes and sit on top of the mask, sitting over the brow
	• Adjust to fit
	
	OR
	
	5b. Put on eye protection- goggles (where indicated by risk assessment)
	• Goggles should go over the front of the eyes and mask, sitting over the brow
	• Adjust to fit
	
	6. Put on examination or heavy duty gloves (where indicated by risk assessment)
	• Gloves are put on last
	• Choose the correct size
	• Be careful not to tear or puncture the gloves
	• Gloves should go over the cuff of the gown (if wearing)
	***See Annex 5* for PPE donning procedure poster**

3.	**Continue to perform risk assessment** during the task performed. Establish the risk of exposure and extent of contact anticipated with body fluids, broken skin, chemicals, or potentially infectious waste. If risk assessment changes during care, leave the patient care area and doff current PPE when safe to do so and don new PPE appropriate to risk. PPE should be used for a single task/interaction in the patient care environment, doffed and discarded appropriately (if single use) or keep for decontamination (if reusable) before performing a risk assessment for the next task. In some instances, PPE may become contaminated or soiled during patient care (e.g. after body fluid exposure or chemical splash) while PPE continues to be indicated by risk assessment for the current task. In this instance, when safe to do so, leave the patient care area and doff all currently donned PPE appropriately and perform hand hygiene before donning fresh/clean PPE to continue care. Where examination gloves are used, they should be doffed and discarded and hand hygiene performed. A new pair of gloves may be donned after hand hygiene is performed if indicated by risk assessment. **Avoid adjusting or modifying PPE during use:** • if there is a need to adjust the PPE or the PPE becomes damaged or soiled during use, leave the patient care area when safe to do so and doff the PPE appropriately • never touch your face while wearing gloves or before performing hand hygiene in a patient care environment; remove gloves and perform hand hygiene before touching your mouth, nose, or eyes
4.	**Use the following order to doff PPE,** depending on the PPE selected : Ideally doffing should take place in a designated area, however it can be performed close to the exit of the isolation area with a dedicated waste bin with heavy duty bag for disposal

	and/or a clear plastic receptacle to doff PPE which may be decontaminated for reuse. **Be careful during doffing of PPE, as doffing carries a high risk of self-contamination.** **1. Remove examination or heavy duty gloves** • Pinch at wrist and peel away • Allow glove to turn inside out (examination glove) or pull until fully removed from your hand away from your body (heavy duty glove) • Hold in opposite hand • Slide fingers underneath gloved hand and roll towards your fingers (examination glove) or pull away from body until fully removed from your hand (heavy duty glove) • Discard into appropriate waste bin (examination glove) or into appropriate receptacle for decontamination (heavy duty glove) **2. Remove fluid resistant gown** (if wearing) • Untie the neck and the waist • Grasp gown at the sides of the neck and carefully pull the outer, contaminated side of the gown forward off the shoulders, turning inward • Roll off the arms into a bundle • Discard into appropriate waste bin – do not shake or agitate **3. Perform hand hygiene** **4. Remove eye/face protection** (if wearing) • Headbands of face shields/goggles are considered clean and may be touched with the hands • The front of face shield/goggles is considered contaminated • Remove eye/face protection by handling bands **only** • Make sure to lean forward when removing the eye/face protection • Discard into appropriate waste bin or into an appropriate container to be cleaned and disinfected **5. Remove mask/ filtering face piece respirator** (if wearing) • Gasp the bottom strap and pull over the head

	• Grasp the top strap and pull forward off the head, bending forward to allow the respirator to fall away from the face • Make sure to lean forward when removing the eye/face protection • Discard immediately into appropriate waste bin **6. Perform hand hygiene** **7. Remove gumboots after your shift** • Use none touch technique as much as possible when removing gumboots • Perform hand hygiene after removing the gumboots **See Annex 6 for PPE doffing procedure poster**
5.	**Dispose of all single use PPE used in cholera isolation areas as infectious waste in appropriate waste bins with heavy duty bags.** Avoid filling waste above ¾ of the wate bin and dispose of appropriately.
6.	**Place all reusable PPE in appropriate receptacles for cleaning and disinfection** **Heavy duty gloves** may be decontaminated by cleaning and disinfection. Cleaning and disinfection of heavy duty gloves • Perform hand hygiene • Clean with soap/detergent and water with attention to the removal of any organic debris • Soak heavy duty gloves in a bucket of 0.2% Chorine solution for 10 minutes • Rinse with clean water • Hang gloves upside down position (fingers up and cuff down) to dry • Pour away used 0.2% Chlorine solution and detergent/water used for cleaning and disinfection • Perform hand hygiene **Reusable face shields/goggles** may be decontaminated by cleaning and disinfection immediately after appropriate doffing and hand hygiene is performed OR placed in a designated closed container for later cleaning and disinfection. Cleaning and disinfection of face shield/goggles • Perform hand hygiene.

	• Clean and disinfect surface where the face shield will be cleaned with 0.2% Chlorine solution. • Clean with soap/detergent and water using a clean cloth with attention to the removal of any organic debris on the face shield or elastics • Allow time for face shield to dry • Wipe face shield with a clean cloth or wipe using 70%-90% alcohol or 0.2% Chlorine solution - If 70% alcohol is used, allow for at least 1-minute contact time before returning eye protection to clinical use. - If 0.2% Chlorine solution is used, allow contact time of 10 min, rinse with clean water, and allow to dry before returning eye/face protection to clinical use. • Perform hand hygiene **Gumboots: Should be** placed in a designated closed container for later cleaning and disinfection. **Cleaning and disinfection of gumboots** • Perform hand hygiene • Clean with soap/detergent and water with attention to the removal of any organic debris using a brush • Soak gumboots in a bucket of 0.2% Chlorine solution for 10 minutes • Rinse with clean water • Hang gumboots upside down position (foot up and cuff down) to dry • Pour away used 0.2% Chlorine solution and detergent/water used for cleaning and disinfection • Perform hand hygiene **To assess after cleaning and disinfection of reusable PPE:** • Is the functional shape and integrity of the PPE maintained (e.g. are there any tears/stains/damage to the heavy duty gloves)? • Is there damage to the function of the PPE (e.g. are the elastics/plastic of the face shield intact/is there degradation in visibility?)

	• Discard reusable PPE where there is degradation to its function or where it cannot be returned to clean/usable condition

References

1. WHO Standard Precautions for the Prevention and Control of Infections: Aide-Memoire
2. OpenWHO - Standard precautions: The role of personal protective equipment
3. GTFCC Cholera Outbreak Response Field Manual

4 Management of Guardians

4.1 Objective	This SOP describes the procedures for managing visitors and guardians in cholera treatment centres (CTC) or cholera treatment units (CTU)
4.2 Key concepts involved	The well-being of patients is essential to their recovery, making allowances for interaction with family and visitors essential to promoting well-being. The management of visitors/guardians is important to ensure safety and prevent infection.

4.3 Material required	• Hand hygiene stations
	  ○ Soap and clean water
	  ○ **OR** Alcohol-based hand rub
	  ○ **OR** 0.05% chlorine solution if the above not available

4.4 PPE required	• Examination gloves • Fluid resistant gown
4.5 Responsibilities	• guardians • CTC/CTUstaff
4.6 Considerations	• Limit access to CTC/CTU to one guardian per patient.

4.7 Management of guardians in cholera treatment centres

Step	Action
1.	○ All guardians should be screened for signs and symptoms of acute watery diarrhea before entrance to the CTC/CTU utilizing agreed case definitions and screening tools.
2.	• All guardians should perform hand hygiene upon entry to the CTC/CTU with soap and safe water, or Alcohol-Based Hand Rub (ABHR). When neither soap and safe water, or ABHR is available, water treated with a 0.05% chlorine solution should be used.
3.	○ To minimize risk of infection, guardians should be briefed and oriented on the CTC/CTU including:

	▪ The different areas of the structure (such as patient treatment areas and areas for staff only) and flow. ▪ The entry and exit points. ▪ Location of latrines and baths/showers for patients. ▪ Location of latrines for visitors/guardians. ▪ When to perform hand hygiene. ▪ How to perform hand hygiene, including display of correct technique. ▪ Risk assessment for appropriate use of PPE and how to put on and safely remove PPE. ▪ Minimize contact with the patient's waste ▪ Minimize contact with other patients and visitors/guardians ▪ Waste management ▪ Laundry management ▪ Food hygiene • Cooked food should be eaten hot. • Food handlers should follow strict hygiene practices. • No leftover food should be taken home by patients, guardians or staff. It should be disposed of on site.
4.	Guardians who are providing care or having close contact (e.g. assisting with food, holding) should use PPE where indicated by risk assessment (e.g. if there is a body fluid exposure risk from patient or patient environment, examination gloves should be worn; if visitor/guardian come into contact with soiled bedsheets and/or buckets used for diarrhea/vomiting then a fluid resistant gown and examination gloves should be worn).
5.	o All guardians should perform hand hygiene at the following times: ▪ On entry ▪ Before and after taking care of the patient ▪ After touching the patients' surroundings (patient environment) ▪ After using latrines ▪ Before cooking or eating ▪ After leaving the CTC

	○ Hand hygiene should be performed with soap and safe water, or an approved alcohol-based hand rub (ABHR). When neither soap and safe water, or ABHR is available, water treated with a 0.05% chlorine solution should be used.
6.	○ Prior to leaving the CTC ▪ Remove PPE and dispose appropriately ▪ Perform hand hygiene

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

5 Dead body mangement during cholera outbreaks

5.1 Objective	This SOP describes the procedures for dead body management during a cholera/AWD outbreak at CTC/CTUs and within the community.
5.2 Key concepts involved	Bodies of people who have died of cholera pose a risk of transmission because body fluids contain high concentrations of *V. cholerae*. To prevent the spread of cholera, handling of dead bodies should be kept to a minimum and burial should take place as quickly as possible (preferably within 24 hours after death).
5.3 Material required	• Soap and clean water for hand hygiene ○ OR 0.05% Chlorine solution • 2% Chlorine solution (labelled) • 0.2% Chlorine solution (labelled) • Soap and clean water for cleaning/disinfection • Buckets • Clothes/towel for cleaning/disinfection • Infectious waste bags, waste bins and liners • Body bag • Cotton wool • Wasters, towels • Pair of scissors • Stretcher
5.4 PPE required	• Heavy duty gloves • Examination gloves • Fluid resistant gown • Fluid resistant apron • Medical mask • Face shield • Heavy duty apron • Gumboots
5.5 Responsibilities	• Burial team staff

5.6 Considerations	As the bodies of deceased cholera patients are infectious, some of the traditional burial and ritual practices require adaptation, to ensure that family members and funeral participants can say goodbye to loved ones without being exposed to cholera. Preparation of the corpse must be done by a trained staff member wearing appropriate PPE.

5.7 Procedures for dead body management

Step	Action (for community death)
1.	**Arrival** • On arrival staff should not be wearing PPE. Greet the family and offer your condolences before unloading the necessary material from the vehicles.
2.	**Prepare burial with family** • Request respectfully for a family representative. Always consider social, cultural, and religious beliefs and practices. The family must be fully informed about the dignified burial process and their religious and personal rights. Ensure that they agree to all modifications of cultural practices before starting the burial. • Propose to one or two family members to witness the preparation activities of the body of the deceased patient on behalf of the other family members. • Ask the family witness if there are any specific requests from the family or community, for example, about the personal belongings of the deceased. • Allow the family witness, family members to take pictures of the preparation and burial.
3.	**Put on PPE** o People conducting the burial should put on PPE - gloves, a medical mask, face shield, and a fluid resistant gown and gumboots
4.	**Prepare chlorine solution** Lay out and organise all materials/equipment on plastic sheeting outside the house and prepare the chlorinated water (table 4 for chlorine preparation for different concentration)
5.	**Prepare the body** o Locate the room where the body of the deceased patient is, open the windows and doors for optimal light and ventilation.

	○ If requested, family members may be present during the preparation of the body for burial. They must be informed of how to protect themselves from infection and be provided with necessary PPE and hand washing facilities. Families may be invited to view the body if there is sufficient space to ensure infection control. ○ The body should be disinfected by washing with 2% chlorine solution, using a sponge. Sprayers should not be used to "disinfect" a corpse. Intestines should not be emptied. ○ Put cotton wool soaked in 2% chlorine solution in all orifices (nose, mouth, ears, vagina, anus) ○ Immediately place the body in a body bag. If body bag is not available, an absorbent cloth or towel, soaked in a 2% chlorine solution, can be used to wrap the body (as needed). Whatever is used to wrap the body should particularly be placed under head and buttocks to absorb potential fluids during transport.
6.	**Perform cleaning and disinfection** ○ Identify with the family, the rooms and annexes (bathroom, toilet) that were used by the deceased patient as they need to be cleaned and disinfected. ○ People conducting the burial should collect soiled objects for disinfection (or burning if unable to disinfect) and perform cleaning and disinfection of the environment. ○ Cholera waste: Stool and vomit from the deceased should be decontaminated with 2% chlorine solution. Buckets should be carefully transported and emptied preferably into a latrine. ○ The bucket should be washed with soap and water and then disinfected using 0.2% chlorine solution. ○ Clean surfaces and mattresses with soap and water with focus on removing all visible organic debris, followed by disinfection with a separate clean cloth soaked in 0.2% chlorine solution and leave to dry for at least 10 minutes contact time. ○ Disinfect the deceased patient's clothing and bedding with the appropriate chlorine solution (0.2%).
7.	**Removal of PPE**

	○ Once the house has been cleaned and disinfected, and all potentially infectious elements removed, the following steps should be taken: ▪ Remove PPE according to procedure (see annexe 6). ▪ Place the single-use PPE in an appropriate waste bag, prepared by the supervisor. The bag will be closed and disinfected and brought to a designated place where it will be burned. ▪ Place any reusable material or equipment in a bucket wash with soap and water and then disinfect with 0.2% chlorine solution giving a contact time of 10 minutes. ▪ Place the reusable materials to dry. ▪ Perform hand hygiene.
8.	**Transport the coffin or body bag to the cemetery** ○ The coffin is placed (delicately) on the platform of the vehicle that will serve as the hearse, usually the head towards the front ○ Respect the time of grieving, possibly with a speech about the deceased and religious songs (chants) to aid the departure of the deceased to the cemetery, according to local cultural and religious beliefs/habits ○ During the departure of the funeral procession to the cemetery, some family members might be on rear of the vehicle with the coffin ○ No family member should sit in the vehicle cabin. Only the people conducting the burial, without PPE (including gloves), should sit in the vehicle cabin ○ The other participants of the funeral may follow behind the car at walking pace.
9.	**Placement of the coffin or the body bag to the cemetery** ○ The body should be buried at least 50 meters from a water source and at least 1.5 meters deep. ○ Manually carry the coffin or body bag to the grave, which is already prepared, followed by the funeral participants ○ Place the coffin or body bag into the grave
10	**Burial at the cemetery**

	○ Respect the time required for prayers and funeral speeches. Family members and their assistants should be allowed to be close the grave ○ Place an identification on the grave (name of the deceased and the date) and a religious symbol if requested ○ Clean hands using alcohol hand rub (OR soap and water OR 0.05% chlorine solution) immediately after removing gloves ○ Family and all persons attending the burial to clean hands with the burial (using alcohol-based hand-rub solution OR soap and water OR 0.05% chlorine solution). ○ Avoid serving food at the funeral. If food is served, it should be eaten hot and hand washing should be compulsory before eating or preparing food. A designated health worker present at the funeral gathering can be helpful in supervising and supporting the use of hygienic practices. ○ Avoid hand washing in a single common hand dipping bowel, instead all hand washing should be under running water.
5.8 Procedures for dead body management within the CTC	
1	○ Ensure staff involved in body transport and preparation are trained and wearing the correct PPE – fluid resistant gown, medical mask, face shield, heavy duty gloves and gumboots.
2	○ Move the body to the morgue for body preparation – this should be done by at least 2 staff utilizing a stretcher. Following transfer, the stretcher should be disinfected with 0.2% chlorine solution.
3	**Prepare the body** ○ The health workers should invite at least two family members to be present during the preparation of the body for burial. They must be informed of how to protect themselves from infection and be provided with necessary personal protective equipment and hand washing facilities ○ The body should be disinfected by washing with 2% chlorine solution, using a sponge. Sprayers should not be used to “disinfect” a corpse. Intestines should not be emptied.

	○ Put cotton wool soaked in 2% chlorine solution in all orifices (nose, mouth, ears, vagina, anus) ○ Immediately place the body in a body bag. If not available, an absorbent cloth or towel, soaked in a 2% chlorine solution, can be used to wrap the body (as needed). Whatever is used to wrap the body should particularly be placed under head and buttocks to absorb potential fluids during transport.
4	**Transportation and burial** ○ The body should be buried in a location decided by the family within 24 hours period after death. The body should be buried at least 50 meters from a water source and at least 1.5 meters deep (see section above).
5	**Perform cleaning and disinfection** ○ Cholera waste: Stool and vomit from cholera patients should be collected in specific buckets under the cholera bed or next to the head of the bed. The cholera waste should be treated with a 2% chlorine solution. Buckets should be carefully transported and emptied preferably into a dedicated pit for this purpose. If a dedicated pit is not possible, a patient latrine can be used for cholera waste. ○ Clean surfaces and cholera beds with soap and water with focus on removing all visible organic debris, followed by disinfection with a separate clean cloth soaked in 0.2% chlorine solution and leave to dry for at least 10 minutes contact time.

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

6 Linen management

6.1 Objective	This standard operating procedure (SOP) describes the linen management in the CTC/CTU to reduce transmission of cholera from contaminated of linen
6.2 Key concepts involved	A CTC laundry room handles 3 categories of laundry – Staff PPE (clothing, rubber gloves, boots etc.) – Hospital laundry (sheets, blankets) – Patients'/attendants' laundry PPE is changed every day and each time it is soiled. Hospital laundry is changed when soiled and on patient discharge. Patient and attendant clothing is changed when soiled. Patient/attendant clothing must not be sprayed with chlorine before being taken to the laundry room. Soiled PPE, hospital laundry and patient/attendant laundry are infectious
6.3 Material required	• Soap and clean water for hand hygiene (0.05% chlorine solution) • Waste bin for disposal of single use PPE • Basins • Buckets for clean linen • Buckets for reusable PPE • Buckets for contaminated linen • Buckets for cleaning and disinfection of reusable PPE • Drying lines • 0.2% chlorine solution for decontamination of reusable PPE (i.e. gumboots, heavy duty gloves and aprons) and linen • Brushes • Detergent for linen washing

6.4 PPE required	• Heavy duty gloves • Heavy duty aprons • Fluid resistant gown • A face mask (E.g. : respirator and surgical mask) • Face shield (single-use or reusable) • Gumboots
6.5 Responsibilities	Health care personnel: all people, paid and unpaid, in a health care setting who have direct patient handling of linen. Guardian attending to the patients may clean linen.
6.6 Considerations	• All persons handling linen must be trained, supervised and monitored • Disinfection contact time should be observed • Linen should be drying on hanging lines • Linen laundering should be conducted in a designated area • A soak away pit should be provided for waste water • If available washing machines and driers are preferred option • Patient clothes should be washed separately from any other linen • All linen from CTC/CTUs should be decontaminated before leaving the CTC/CTU premises • Consider a unidirectional flow of linen during the laundering process

Step	Action
1	Ensure staff involved in linen management are trained and wearing the correct PPE – fluid resistant gown, medical mask, face shield, heavy duty gloves and gumboots. (see annex 5 for donning procedure) after performing hand hygiene
2	Transport the linen in leak proof container
3	Perform a risk assessment of the linen to separate grossly soiled from the less soiled linen. • Remove all gross soiling from linen and dispose of into the latrine • Be careful while handling to avoid injuries from sharps that might be in the linen
4	Then wash linen starting with the less soiled linen and finally the more grossly soiled linen

	• Clean with soap/detergent and water with attention to the removal of any organic debris • Soak linen in a bucket of 0.2% Chlorine solution for 10 minutes • Rinse with clean water • Hang linen on the hanging lines • Pour away used 0.2% Chlorine solution and detergent/water used for cleaning and disinfection into the soak away pit • Remove all PPE according to procedure ***(see annex 6 for doffing procedure)*** • Perform hand hygiene
	See Annex () for laundry cycle and washing

Reference

WHO Standard Precautions for the Prevention and Control of Infections: Aide-Memoire

Open WHO - Standard precautions: Linen Management

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7 Environmental cleaning

7.1 Objective	This standard operating procedure (SOP) describes the environmental cleaning for all spaces in the CTC/CTUs as a measure to reduce transmission of cholera
7.2 Key concepts involved	Environmental hygiene is key in reducing the risk of transmission of cholera in the CTC/CTU The cleaning of premises includes all patient zones, all areas of the "clean" zone (administration, changing rooms, stock rooms, etc.) and the outside areas of the CTC
7.3 Material required	• Soap and clean water for hand hygiene or 0.05% chlorine solution • Waste bin for disposal of single use PPE • Basins • Buckets for clean linen • Buckets for reusable PPE • Buckets for contaminated linen • Buckets for cleaning and disinfection of reusable PPE • 0.2% chlorine solution • Brushes • Mops • Detergent • Wasters • Warning signage • Cleaning schedule and checklist ***(See annex 8 for cleaning schedule and annex 9 for cleaning checklist)***
7.4 PPE required	• Heavy duty gloves • Heavy duty aprons • Fluid resistant gown • A face mask (E.g. : respirator and surgical mask) • Face shield (single-use or reusable) • Gumboots

7.5 Responsibilities	Hospital attendants: all people, paid and unpaid, in a health care setting who are involved in environmental cleaning.
7.6 Considerations	• Wear appropriate PPE • Clean before disinfection • Don't spray • Do not dry sweep consider dump dusting • Allows clean from top to bottom • Always work from clean to dirty • Clean patients' areas before patients' toilets. • Low-touch surfaces before high-touch surfaces. • Clean high-touch surfaces outside the patient zone before high-touch surfaces inside the patient zone • Clean environmental surfaces before cleaning floors • Always use the figure of 8 technique • Always follow the cleaning schedule for different places in the CTC/CTU (see annex 8 for cleaning schedules)

Step	Action
1	Ensure staff involved in environmental cleaning are trained and wearing the correct PPE – fluid resistant gown, medical mask, face shield, heavy duty gloves and gumboots. (see annex 5 for donning procedure) after performing hand hygiene
2	Clear the area and place the wet caution sign
3	Prepare the cleaning materials (buckets, detergent, disinfectant) and start the cleaning process • Be careful while handling to avoid injuries from sharps that might be in the linen • Fill one bucket with detergent and water, one bucket with 0.2% Chlorine solution and one bucket with plain clean water. • Immerse the mop in the cleaning solution bucket and wring out with heavy pressure. • The mop should be damp not dripping wet. • Clean a 3m x 3m area and let the area dry • Rinse the mop thoroughly in the rinse bucket.

	• Wring out over the rinse bucket before dipping it back in the cleaning solution. • Change rinsing water frequently when it appears dirt • Apply disinfectant in the same manner • Clean and disinfect the cleaning materials (mops and buckets) with soap and water then disinfect with 0.2% chlorine • Fully immersing the items in chlorine 0.2% for the 10 minutes contact time and rinse with clean water to remove chlorine residue. • Store mops upside down to allow complete draining and drying.
4	Remove all PPE used while cleaning
5	Perform hand hygiene

References

GTFCC Technical Note on WASH and IPC

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8 Decontamination of Vehicles (bicycles, motorcycles, cars, wheelbarrows)

8.1 Objective	This standard operating procedure (SOP) describes the handling and decontamination of all vehicles used to deliver patients to the facility. This also included vehicles used to transport the deceased
8.2 Key concepts involved	Vehicles used on transportation of patients can be a source of transmission of cholera and therefore should be proper decontaminated to reduce the risk of transmission. Vehicles in this case include; bicycles, motorcycles, cars, wheelbarrows both person and public.
8.3 Material required	• Soap and clean water for hand hygiene or 0.05% chlorine solution • Waste bin for disposal of single use PPE • Basins • Buckets for reusable PPE • Buckets for contaminated linen • Buckets for cleaning and disinfection • 0.2% chlorine solution • Brushes • Detergent • Wasters • Signage • Clean water
8.4 PPE required	• Heavy duty gloves • Heavy duty aprons • Fluid resistant gown • A face mask (E.g. : respirator and surgical mask) • Face shield (single-use or reusable) • Gumboots
8.5 Responsibilities	Hospital attendants: all people, paid and unpaid, in a health care setting who are involved in environmental cleaning. IPC focal points who monitors all decontamination processs

8.6 Considerations	• Wear appropriate PPE • Clean before disinfection • Spraying inside or outside the vehicles is **NOT recommended**. • Clean and disinfect both the inside and outside of the car • Decontamination of vehicles should be done in a designated area • All sorts of vehicles (bicycles, motorcycles, cars, wheelbarrows both person and public) must be decontaminated after transporting a cholera case • Each CTC/CTU must have a decontamination area for all vehicles transporting patients

Step	Action
1	Ensure staff involved in vehicle decontamination are trained and wearing the correct PPE – fluid resistant gown, medical mask, face shield, heavy duty gloves and gumboots. (see annex 5 for donning procedure) after performing hand hygiene
2	Prepare the cleaning materials (buckets, detergent, disinfectant)
3	Clean the interior of the vehicle following the steps below • Gather required cleaning and disinfection equipment, bucket with water and detergent, bucket with rinsing water and bottle with chlorine solution 0.2%. By default, these materials should be located in the Red zone and remain there. • Don in appropriate PPE; Fluid resistant gown, face shield, medical mask, heavy duty apron, rubber household gloves. • **Open ALL** doors of the car to maintain good ventilation while cleaning and decontaminating. • Start with carefully removing **all waste** in infectious waste bag and sharps in sharps box if any. • Carefully bag all dirty linen such as blankets and sheets and send for decontamination in the laundry area. Avoid any shaking of the linen in the process. • Disinfect the outside of the bag with a damp cloth with 0.2% chlorine solution

	• Proceed with cleaning and disinfecting **All** visible surfaces, especially **High Touch** surfaces (e.g. stretcher, mattresses, rails, control panels, horizontal surfaces in the car, as well as fixtures, seats, handles and fittings, floors and walls). • Adopt an organized cleaning and disinfection process from the ceiling of the car to the floor and from cleaner to dirtier areas. • Use a solution of detergent and water, with cleaning cloths/rag (reusable clothes should be laundered and dried between each use). Ensure a adequate supply of cleaning cloths/rags. • Following cleaning, disinfect all surfaces with a 0.2% chorine solution for 10 minutes them wipe with clean water. Use 70% isopropyl alcohol for metallic surfaces • Mop the floor with detergent and water then disinfection with a 0.2% chlorine solution and allow a contact time of 10 minutes • Rinse off the chlorine on the car floor with a mop soaked in clean water

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

9 Food hygiene

9.1 Objective	This guidance describes the key consideration and handling of food in the CTC/CTU
9.2 Key concepts involved	Cholera being a faecal – oral route disease, food hygiene is key in reducing the risk of spreading of the infection within the CTC/CTU
9.3 Material required	• Soap and clean water for hand hygiene or 0.05% chlorine solution • Buckets for cleaning utensils • 0.2% chlorine solution • Detergent • Cleaning diseases • Energy source • Clean water • Waste bins • Utensils drying rack • Five keys to safer food poster
9.4 Responsibilities	Hospital attendants: all people, paid and unpaid, in a health care setting who are involved in food handling. Guardians who support patients in feeding and cleaning of utensils IPC focal points who monitors all food hygiene in the CTC/CTU

9.5 Considerations	• All food handlers (out sourced caterers, health workers, guardians) should be sensitized on the Five keys to safer food (See Annex 10) • Access to the kitchen and food stores, as well as the handling of food and distribution of meals, is reserved to kitchen staff only • Perform hand washing before preparing and serving food • Use only potable water stored in containers with lids and taps for washing and preparing food. • After meals: discard leftovers, do not keep prepared food, • Do not let food out of the CTC/CTU. • All foods must be thoroughly cooked • All cooked food must be eaten hot • All fruits and vegetables should be washed thoroughly with clean and safe water before eating. • All out source catering services must provide hot meals and food brought in covered containers • All food coming in from home should be in covered containers and if possible brought in hot or reheated before eating if possible • Patients should not share common eating in the same plate with guardian • Guardians should eat from outside the patient wards • Reheat all cooked cold food before eating • Display the key messages on food safety e.g. Key to safer food poster in all easily visible areas in the CTC/CTU as reminders • Wash all utensils used for eating in the CTC/CTU in a designated area before they leave the premises following the steps below

Step	**Action for decontamination of utensils**
1	Gather all the washing materials (soap, water, buckets,0.2% chlorine solution)
2	Wash the utensils (cups, plates, spoons, forks, knives, etc.) using soap wash and the scrubbing sponge

3	Rinse the utensils using clean and safe water thoroughly to remove all soap
4	Soak the utensils in 0.2% chlorine solution for 10 minutes
5	Rinse the utensils using clean and safe water thoroughly to remove all chlorine
6	Place the utensils on the drying rack an d allow to drip completely dry
7	Store the utensils in a covered container to avoid exposure to vectors and other sources of contamination
8	Perform hand hygiene after washing the utensils

References

GTFCC Technical Note on WASH and IPC

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10 Chlorine solution preparation and use

10.1 Objective	This standard operating procedure (SOP) describes the chlorine preparation, its storage and different uses in the CTC/CTU
10.2 Key concepts involved	Chlorine solution is majorly used for different purposes in the CTC/CTUs including in treatment of water, disinfection of surfaces, bodies, vehicles, reusable PPE. The Chlorine solution is also used in hand hygiene, patient care equipment and environment. It is therefore vital in control of cholera transmission and must be given the appropriate preparation measures and procedures.
10.3 Material required	• Chlorine based products • Drums with air tight covers • Mixing sticks (none metallic) • Protocols • PPE (heavy duty gloves, industrial mask/N95, heavy duty apron, goggles, boots) • Hand washing materials (soap, water or 0.05% chlorine) • buckets
10.4 PPE required	• Heavy duty gloves • Heavy duty aprons • Fluid resistant gown • A face mask (E.g. : respirator and surgical mask) • Face shield (single-use or reusable) • Gumboots
10.5 Responsibilities	Hospital attendants: all people, paid and unpaid, in a health care setting who are involved in environmental cleaning. IPC focal points who monitors all decontamination processs

10.6 Considerations	• Chlorine solution should be available at all times in the CTU • Chlorine solutions are inactivated by the presence of organic matter (such as blood and other biological liquids, secretions or excreta, or dirt). • Clean objects, floors, surfaces, laundry with detergent and water before applying chlorine solution. • Display the protocol on the preparation of chlorine solutions in all CTC/CTU chlorine preparation areas. • Work in a well-ventilated room or, better still, outside in the shade but protected from the wind. • Wear personal protective equipment when preparing chlorine solutions • Prepare solutions with clean, cold (or room temperature) water, in plastic containers only • Respect and follow recommended concentrations for the different uses (an over-diluted product is less active; an over-concentrated product can cause irritation and corrosion). (Refer to table 3 and 4 below for different chlorine solution concentration uses and how to make the different concentrations respectively) • Wait for 30 minutes after mixing any concentration of chlorine solution before use • Disinfection using chlorine solution requires contact time of different duration depending on the strength of the solution and this should always be observed. • Steps for Chlorine preparation are described below

Step	Action for chlorine preparation
1	Staff involved in chlorine preparation be trained and wearing the correct PPE –elastomeric mask/industrial mask/respirator, face shield/goggles, heavy duty gloves heavy duty apron and gumboots. (see annex 5 for donning procedure) after performing hand hygiene
2	Gather Chlorine solution preparation materials
3	Prepare the chlorine solution of desired concentration

	• Pour the required amount of water required into a container into a Use CLEAN water cold (or room temperature) water, NO metal (corrosion of metal, inactivates chlorine). • Measure the required chlorine amount with different measuring containers as deemed applicable • Add the Chlorine product as per volume required to the water without splashing. • **NEVER pour water directly into chlorine this can explode !** • Stir using a clean wooden/bamboo stirrer dedicated only for this purpose (no metal!). • Stir for 10 seconds or until the chlorine product is dissolved. • Leave for 30 minutes, thereafter it is ready for usage. • Label the containers (0.05%, 0.2%, 1% and 2%), specifying the chlorine concentration, date and time of preparation and discard. • Discard 0.05% chlorine solution after 4 hours, 0.2 after 12 hours, 1 % and 2% after 72 hours. • DO NOT add or mix any other product (e.g. a detergent) to chlorine solutions. • Store in air-tight non-metallic containers, away from heat, light and humidity in a ventilated area. • Carefully close containers after use.
4	Caution : Never place them in contact with water, acid, fuel, detergents, organic or inflammable materials (e.g. food, paper or cigarettes) Never mix NaDCC with calcium hypochlorite (risk of toxic gas or explosion)

10.7 *Table 3*: Prepared solutions and uses

Solution	0.05%	0.2%	2%	1%

Use	Hand washing	Disinfection of floors, surfaces, materials, aprons, boots, dishes and laundry (after cleaning)	Décontamination of corpses Excreta and vomit buckets	Stock solution for chlorinating water

10.8 *Table 4*: Preparing Chlorine solutions from Powder form of chlorine products in 20L of water using a tablespoon

Active chlorine in product	**Desired concentration and number of table spoons for 20 Litres**			
	0.05%	**0.2%**	**1%**	**2%**
35%	2 (table spoons)	8 (table spoons)	38 (table spoons)	76 (table spoons)
65%	1 (table spoon)	4 (table spoons)	21 (table spoons)	41 (table spoons)
68%	1 (table spoon)	4 (table spoons)	20 (table spoons)	39 (table spoons)
70%	1 (table spoon)	4 (table spoons)	19 (table spoons)	38 (table spoons)

10.9 Foot baths containing 0.2% chlorine solution:

Foot baths should be considered for all exits from the CTC/CTU

The chlorine solution in the footbath should be poured away each time it is visible turbid and a new solution replaced

All persons leaving the CTC/CTU should step in the chlorine foot bath and stand for at least one minute to allow for contact before stepping out of the footbath

11 Water Supply

Key Considerations	
11.1 Water Quantity	A large amount of water is required for: – The preparation of ORS and human consumption (drinking, cooking). – Hand-washing and personal hygiene of patients and attendants. – Cleaning and disinfection of objects, floors, surfaces and laundry 60 litres per day per patient are needed to cover patient, attendant and staff needs as well as cleaning the facility. This volume is given as an indication. Reserve supply on-site to cover at least 3 days of activity. For example, for a CTC with 50 patients present: 60 (litres) x 50 (patients) = 3000 litres of water/day x 3 (days) = 9000 litres of water The CTC needs to have at least 9000 litres of water available every day
11.2 Water Quality	Check all prechlorinated water for free residual chlorine and if not present in the recommended amounts (0.2-0.5 mg/litre) add 1% stock solution (1 tea spoon in 20 ltrs of water) to the water For water sources that are not prechlrorinated like boreholes, wells, add 1% stock solution (1 tea spoon in 20 ltrs of water) to the water Wait for 30 minutes then use the water The Turbidity should be under 5 NTU The FRC concentration at all distributions points should be 0.5 mg/litre after a contact time of 30 minutes The PH of the water should be < 8

References

GTFCC Technical Note on WASH and IPC

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12 Waste Management –Solid Waste

12.1 Objective	This SOP describes the key concepts and consideration in management of all solid wastes generated in the CTC/CTU
12.2 Key concepts involved	Waste can be a source of transmission of infections within the CTC and the community if not handled properly. As a standard precaution therefore, all solid wastes should be appropriately handled to reduce risks of cholera transmission
12.3 PPE required	**PPE for Staff Managing Waste** : • Goggles/Shield • Medical mask • Gown • Heavy duty gloves • Heavy duty apron • Gum Boots **PPE for Incinerator Operator :** • Goggles/Shield • Leather Gloves – anti thermal • Elastomeric Full or Half face mask with P100 filter • Fire resistant apron • Safety boots (puncture resistant)

12.4 Material required	**Waste segregation receptacle in green zone** • Black bin with lid (Marked separately for GENERAL & ORGANIC (food)). • Yellow plastic bin with lid with biohazard sign (Marked INFECTIOUS) **Waste segregation receptacle in red zone** • Black bin with lid (Marked separately for GENERAL & ORGANIC (food)). • Yellow plastic bin with lid with biohazard sign (Marked INFECTIOUS) • Red Plastic bucket with lid (anatomical and pathological waste e.g. placenta) • Sharp's box, (Marked SHARPS) with biohazard symbol, Puncture-proof Bin liners (Black, yellow, liners) **Waste management site equipment:** Incinerator • Residue (ash) pit • Organic waste pit/food waste pit/rubbish pit • Placenta pit • Sharps pit with safety box reducer (desirable) • Vial crusher • Shovel • Hard broom • Diesel • Large storage bins for waste (color coded and clearly labelled) • Weighing scale and register book • Waste trollies **Cleaning the waste bins**

	• Washing area (with proper drainage) • Detergent • 0.2%chlorine • Brushes • Drying area for the waste bins and other equipment Hand washing facilities (soap, waster or 0.05% Chlorine Solution) IEC materials (waste segregation, signs, etc.)

12.5 Responsibilities	Hospital attendants, ground laborers, incinerator operators: all people, paid and unpaid, in a health care setting who are involved in handling of waste. Guardians who support patients in CTC IPC focal points who monitors waste management in CTC/CTU

12.6 Considerations	• All waste handlers should be trained on the SOP of waste management
	• Health care waste generated at CTC/CTU requires special consideration and should by default be managed on site
	• Correct Health Care Waste Management (HCWM) includes the following "technical" steps:
	  o Minimization of waste generation
	  o Segregation at the point of generation
	  o Collection
	  o Transport
	  o Storage
	  o Treatment
	  o And/or final disposal
	• To all considerable extents possible CTC/CTU should minimize the generation of waste (including reducing unnecessary use of PPE, reducing entrance of plastic bags used for food, excess foods and having reusable containers as opposed to one time use for food.)
	• All waste handlers should use appropriate PPE according to risk assessment
	• All staff managing waste should be vaccinated for Hepatitis B, Tetanus and OCV.
	• Avail Staff roaster for waste management
	• Ensure availability of appropriate PPE (for all uses and sizes)
	• Ensure all staff involved in waste management are trained on Accidental Exposure to Blood and body fluids (AEB)
	• Ensure AEB job aids are available in the waste management area.
	• The waste management area should be fenced off and only accessed by authorized personal only

Step	**Action for Waste collection**

1	• Empty waste receptacles when ¾ full. DO NOT overfill the bin or bin liner. DO NOT use pressure with hands or stick to push waste further in the bin liner, this can create aerosols and potentially cause injury. • All the point of care bins should be emptied to larger bins in the storage area. • Follow the steps in annex 12 for removing bin liner • DO NOT use staples or metal coils for sealing of plastic bags to prevent injury or damaging other plastic bags. Instead use cable tie using the “Swan-Neck" sealing method. • Upon collection immediately, replace bin liners. If the bin is dirty clean and disinfect bin and place new bin liner • For collection of sharp boxes check if it is filled to the indicated line on the box. If it reached the indicated level the sharp box should be sealed to ensure safe transport. • DO NOT attempt to close a sharp box that is overfilled! Sensitize staff on the high risk of injury this poses. Carefully transport the sharp box to the waste management area for immediate disposal. • Ensure enough CLEAN waste receptacles are available for replenishment
2	Action for Transport
	• Collect and transport different types of waste on separate clearly marked waste Otto-bins, waste carts or wheelbarrows. • DO NOT Carry health care waste on your back or shoulder. • Pile a safe number of bags on an Otto-bin, waste cart or wheelbarrow to prevent spills during transportation to storage area. • Ensure waste is treated and disposed as per type of waste immediately. (Note: waste must be disposed of as segregated)
3	Action for Storage
	• The storage area provides a safe temporary storage place due to backlog of delayed treatment of waste before disposal. • Ensure the storage area is large enough to accommodate the incoming waste, for each type of waste (Note : waste must be stored of as segregated)

	• Arrange the storage bins according to color and or clear labelling for easy identification to disregard secondary segregation. • Ensure to obey the thumb rule of filling up the bins (3/4 full).
4	Treatment by incineration
	• Wear appropriate personal protective equipment—helmet, goggles, respirator, gown, heavy-duty gloves, apron, and boots. • Ensure fuel (diesel) is available for operating the incinerator and that the waste to be incinerated is dry. • Record the number of safety boxes and waste bags to be burned. • Clean the incinerator, by removing the ash on the tray and deposit it safely in the ash pit • Place the grate/tray back in the incinerator. (Different incinerator will require different clearing of the ash from Ensure waste is treated as per type of waste immediately. (Note: waste must be disposed of as segregated)
5	Disposal of glass bottles and vials
	All the glass material should undergo a crushing process before disposal, a glass crusher should be constructed on top of the glass pit Arrange all the bin with glass (vials, bottles, disposed lab slides etc.) near the crushing equipment (The simple crusher is a tube that has a heavy slide hammer, with a section opening along the tube meant for loading for small amount of glass to be crushed) Ensure the crusher is on top of the glass pit (should be installed on a constructed glass pit) **Operating the glass crusher** • Lift the slide up the tube past the opening • Hook the hammer handle to hold the suspended hammer • As per design load the desired amount of vials • Release the hook and allow the hammer to drop on top of the vials • Repeat the same process for subsequent load batches of vials • Do NOT operate the crusher if open, or is damaged
	Disposal of organic waste

	Put all food remains into the food pit Caution! Do not dispose of any other waste other than food leftovers into the waste pit (Note: waste must be disposed of as segregated)
	Disposal of anatomical waste
	Put all anatomical waste in the placenta pit Caution! Do not dispose of any other waste other than anatomical waste into the placenta pit (Note: waste must be disposed of as segregated)
	Disposal of Ash from incinerator Dispose of the ash into the ash pit Caution! Do not dispose of any other waste other than ash into the ash pit (Note: waste must be disposed of as segregated)
6	Action for Cleaning and disinfection of waste bins • Make sure to don the appropriate PPE before starting to clean the waste bins (gum boots, heavy duty apron, heavy duty gloves, medical mask, goggles or face shield, water proof head cover) • Wash the inside and outside of waste bin thoroughly with detergent and water using a brush and sponge • Rinse the waste bin with clean water • Wash the waste bin with 0.2% Chlorine solution • Rinse the waste bin with clean water • Put the waste bin upside down, allow it to drip dry in a designated well drained area within the waste disposal area
7	Remove all PPE used during waste handling following the correct procedure (see annex 6 for doffing procedure)
8	Perform hand hygiene after removing PPE and before leaving the waste disposal zone

References

GTFCC Technical Note on WASH and IPC

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13 Waste Management –Liquid Waste

13.1 Objective	This SOP describes the key concepts and consideration in management of all liquid wastes generated in the CTC/CTU
13.2 Key concepts involved	Liquid waste including faeces, vomit from cholera patients can be a source of transmission of infections within the CTC and the community if not handled properly. As a standard precaution therefore, all liquid wastes should be appropriately handled to reduce risks of cholera transmission
13.3 PPE required	**PPE for handling liquid waste** : o Goggles/Shield o Medical mask o Gown o Heavy duty gloves o Heavy duty apron o Gumboots
13.4 Material required	Buckets Pits Latrine 2% Chlorine solution 0.2% Chlorine solution Detergent Water Scrubbing brushes Hand washing facilities (soap, waster or 0.05% Chlorine Solution) IEC materials (labelling different strength of chlorine solution and the uses, signs, etc.)
13.5 Responsibilities	Hospital attendants, ground laborers: all people, paid and unpaid, in a health care setting who are involved in handling of liquid waste. Guardians who support patients in CTC IPC focal points who monitors waste management in CTC/CTU

13.6 Considerations	Stools and vomit should be collected in buckets as patients cannot go to latrines due to the intensity of their often uncontrollable diarrhoea and vomiting. Buckets used for collection of stool should be 20 litres bucket, placed directly under the bed hole to avoid splashing of faeces Pour 1cm depth of 2% chlorine solution into the buckets used for collecting vomit and faeces before putting under the bed and close to the head side of the bed for faeces and vomit respectively. Buckets need to be monitored, emptied, cleaned and replaced after each episode of diarrhea or vomiting. Stools and vomit should be poured into excreta pits or latrines. If possible, use different coloured buckets for stools and vomit or label buckets indicating what they are to be used for. Do not use these buckets for clean activities (e.g. preparation of ORS, transport of potable water).

Step	13.7 Action for cleaning buckets
1	• Make sure to don the appropriate PPE before startingto clean the buckets (gum boots, heavy duty apron, heavy duty gloves, medical mask, goggles or face shield, water proof head cover) • Wash the inside and outside of buckets thoroughly with detergent and water using a brush and sponge • Rinse the buckets with clean water • Wash the buckets with 0.2% Chlorine solution • Rinse the buckets with clean water • Put the buckets upside down, allow it to drip dry in a designated well drained area close to the latrines/pits

	NOTE : Before returning the bucket to the patient, pour 1 cm of 2% chlorine solution again into the bucket.
	13.8 Management of waste water
	All wastewater (showers, sinks, laundry, hand-washing points, ORS preparation, and kitchen) must be collected in a grease trap then infiltrated via a soak away pit. If it is not possible to build a soak away pit (e.g. lack of space, nature of the soil), wastewater discarded in the open but away from facilities in a well-drained designated area. NOTE : Soakaways (for most soils) must be located at least 30 meters from any groundwater source and the bottom of any latrine is at least 1.5 meters above the water tables.

14.9 Notes on Excreta pits and Latrines

Excreta pits

Placed at least 30 metres away from all wells, boreholes and water sources

Placed at least 5 metres away from all facilities

Should be easily accessible and the ground should allow liquids to infiltrate into the soil

Latrine

There should be one latrine for every 20 persons in the CTC

There should be separate latrines for male and female patients

There should be separate latrines for patients and health workers (NOTE: the health workers' latrines should be placed in the green zone.

14 Vector control

14.1 Objective	This guidance describes the key considerations for controlling vectors in the CTC/CTU
14.2 Key concepts involved	Vectors like; houseflies, cockroaches can transmit cholera in the CTC/CTU when they come in contact with patient faeces and transfer the contamination to the food. Other vectors like mosquitoes transmit malaria which can be a comorbidity for the already suffering patients and make treatment outcomes poorer including long hospital stay and sometimes death. It is therefore important to control vectors in the CTC/CTU to reduce the risk of spreading cholera and other diseases.
14.3 Material required	• Mosquito bed nets • Mosquito window and ventilator mesh/net • Drop hole covers • Insecticides • Insect repellants
14.4 Responsibilities	Hospital attendants: all people, paid and unpaid, in a health care setting who are involved care of patients. Guardians who support patients in CTC/CTU Health workers in the CTC/CTU IPC focal points in the CTC/CTU

14.5 Considerations	• Flies or mosquitos (attracted by waste, stagnant water or wastewater, food, ORS sugar) can be abundant and become a nuisance. • Waste and wastewater management may be enough to control vectors, but sometimes insecticides are required. • All windows in the structures at the CTC/CTU should have mosquito nets/mesh • All latrines should have drop hole cover to keep of cockroaches • Holes and places that can store open stagnant water should be eliminated or covered to reduce mosquito breeding sites at the CTC/CTU • Keep all grasses in the CTC/CTU slashed to reduce breeding and hiding sites for vectors and vermins • Provide enough light in the night to keep off mosquitoes • All pits used for excreta disposal should be covered to reduce access of houseflies and cockroaches

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

Human Resource	
16.1 Objective	This guidance describes the key considerations for IPC human resource in the CTC/CTU
16.2 Key concepts involved	Human resource is a key element in the components any IPC program to enable the running of IPC activities and practices. In the CTC/CTU ; the main IPC personnel will include the IPC focal person, IPC committee especially for CTC hospital attendants, ground staff, waste handlers and incinerator operators, disease control and surveillance assistant, laundry attendants, security guards
16.3 Responsibilities	Admistration and CTC/CTU incharge IPC focal person, hospital attendants, ground staff, waste handlers and incinerator operators, disease control and surveillance assisstant, laundry attendants, security guards
16.4 Considerations	• All CTCs/CTU should have an IPC committee and an IPC focal person • All CTC/CTUs should have at least an IPC focal person • The IPC committee and focal persons should be responsible for the IPC activities and practices in the CTC/CTU as applicable • All committees, personnel working in IPC must have a clear terms of reference (ToR) to enhance monitoring and accountability (See annex 13 for TORs of different personnel) • All persons involved in IPC at the CTC/CTU must be trained, on IPC for cholera and continuously monitored for effectiveness of the trainings

References

GTFCC Technical Note on WASH and IPC

GTFCC Cholera Outbreak Response Field Manual

Annex 1 : Cholera screening tool and algorithm for use at all entrances to health facilities in Malawi during Cholera Outbreak

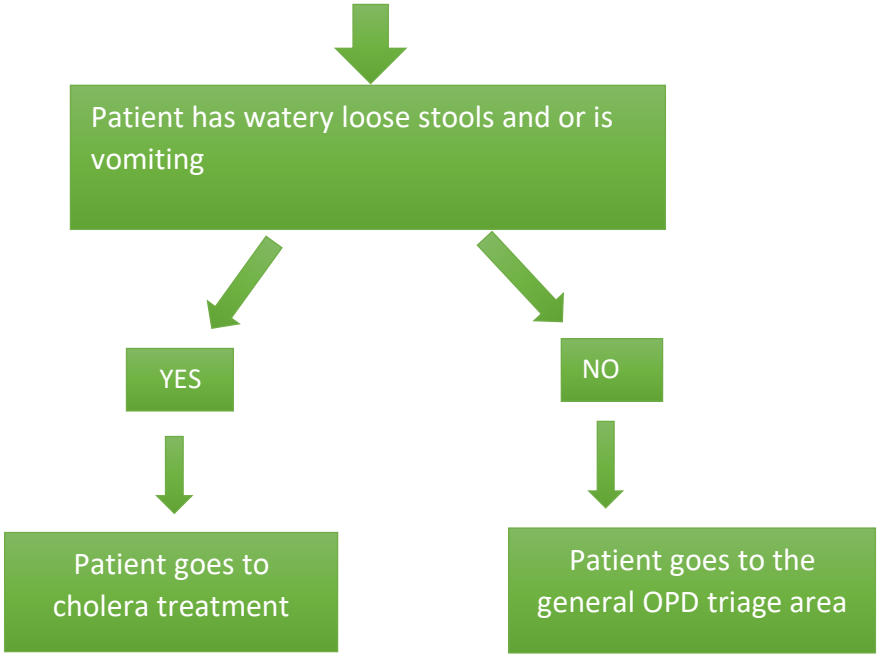
Objectives

- Establish screening of all patients on arrival at all sites using the guidance and case definitions
- Establish effective patient flow through screening at the entrance of all healthcare facilities
- Establish mechanisms for the isolation of patients in all care sites using the guidance.

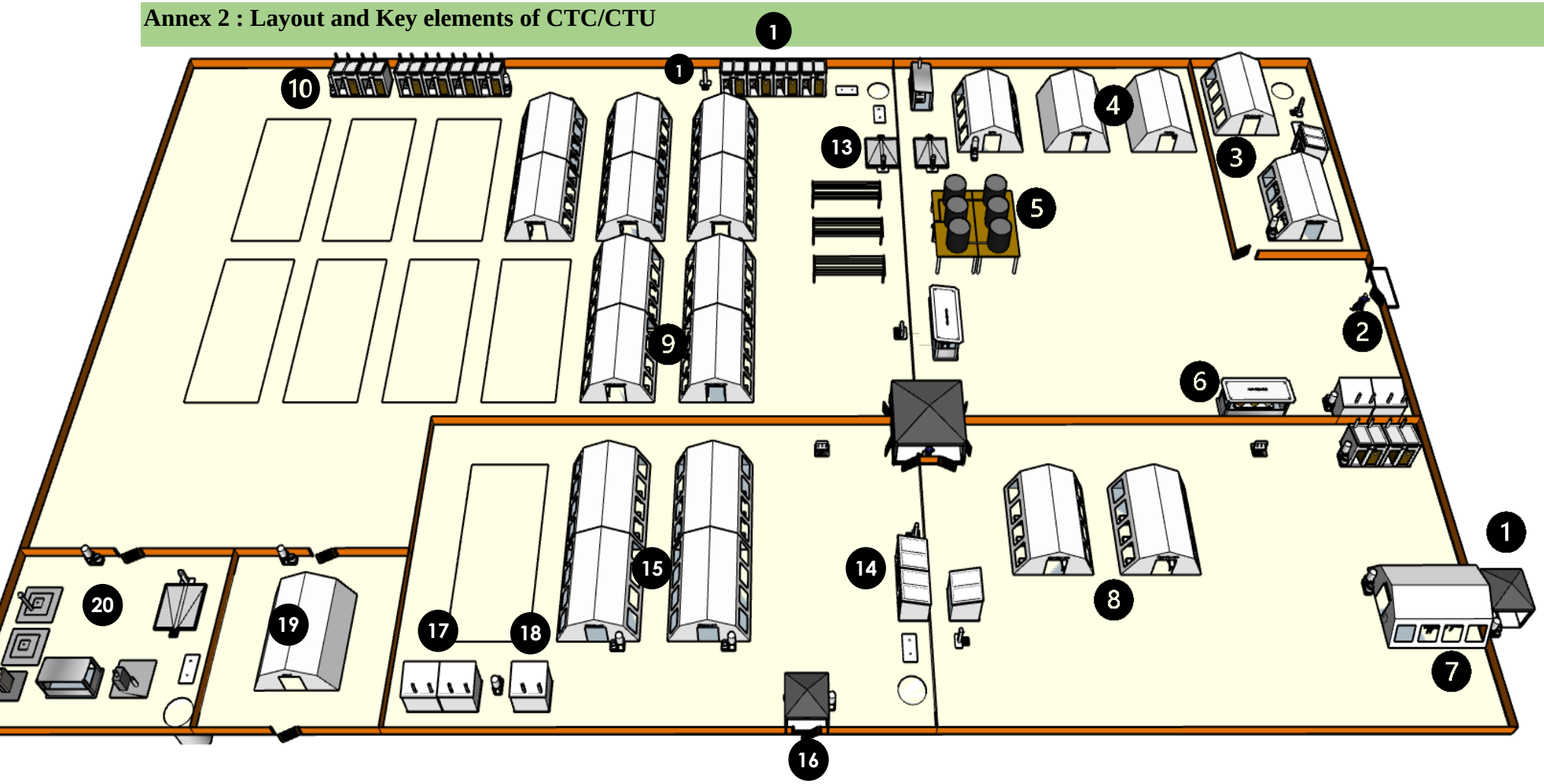
Screening questions for all patients visiting the health facility

1. Do you have watery loose stools ?
2. Are you vomiting?

- If the answer to any of the two questions is YES, please refer the patient to the cholera treatment area.
- If the answer to the two questions is NO, please refer the patient to the general OPD triage area.



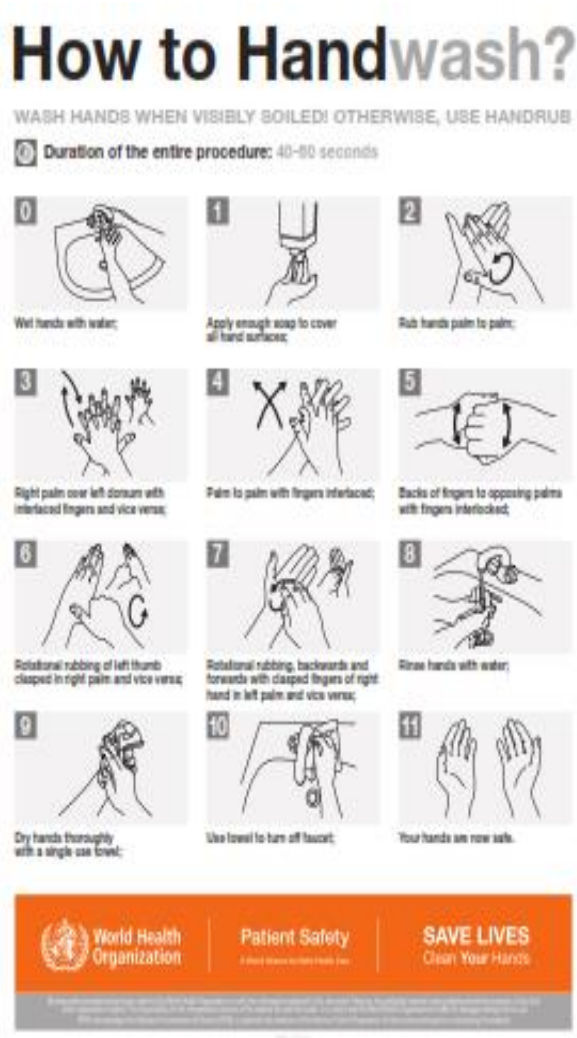
Annex 2 : Layout and Key elements of CTC/CTU

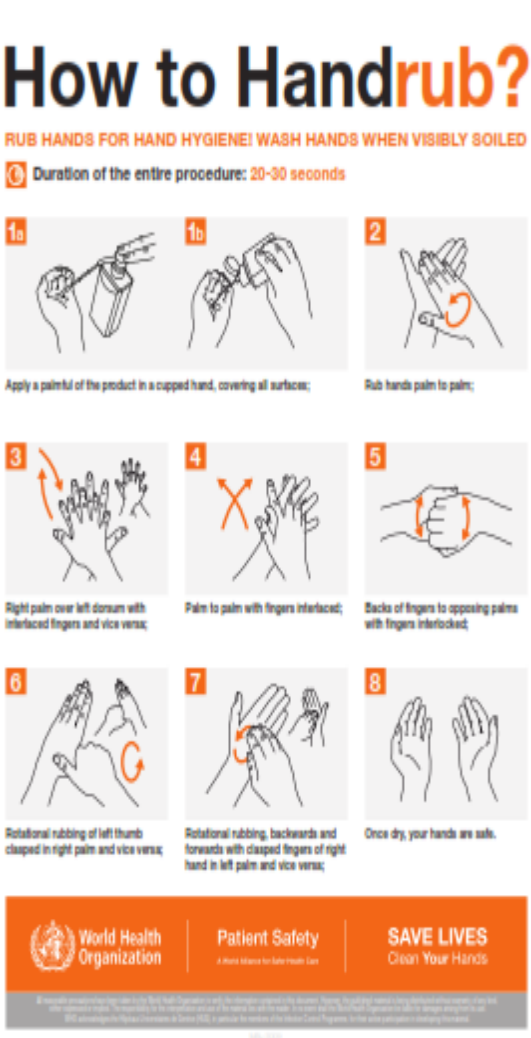


CTC/CTU Elements and Layout and Key:

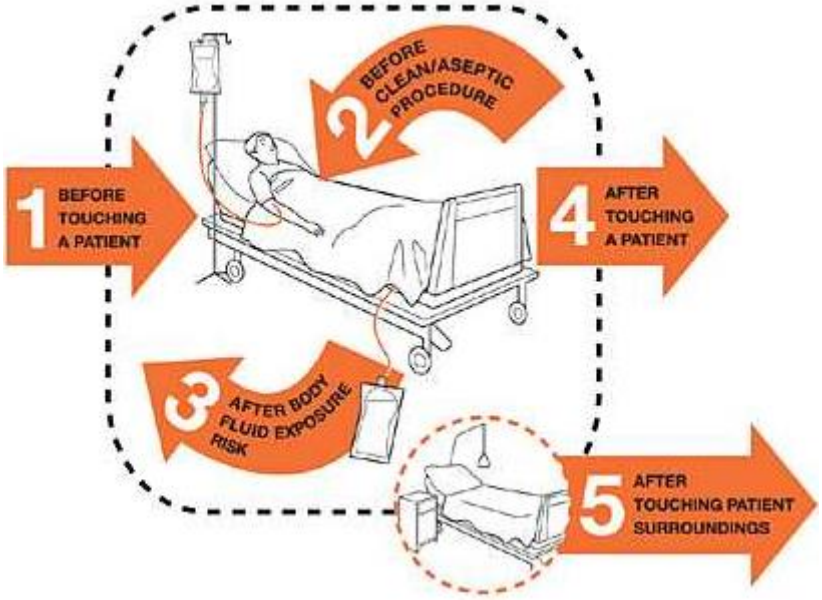
1. Patients/Vehicle Entrance
2. Staff Entrance
3. Staff Facilities: Toilet, Showers, Changing Rooms
4. Pharmacy And Warehouse
5. Water Tanks For Chlorinated Water
6. Chlorine Preparation Area
7. Triage Area
8. Observation Area
9. Treatment Area
10. Patient And Staff Toilets
11. Water Point
12. Showers
13. Washing Point
14. Patient Showers
15. Recovery Area
16. Patients Exit
17. Patients Toilet
18. Staff Toilet
19. Morgue
20. Waste Management Area

Annex 3 : Hand washing and hand rubbing technique posters





Annex 4 : The WHO's 5 Moments for Hand Hygiene Poster



Annex 5 : PPE donning procedure poster

Annex 6 : PPE doffing procedure poster

Annex 7 : Preparing Chlorine solutions from Powder form of chlorine products in 20l of water using a tablespoon.

Active chlorine in product	**Desired concentration and number of table spoons for 20 Litres**			
	0.05%	**0.2%**	**1%**	**2%**
35%	2 (table spoons)	8 (table spoons)	38 (table spoons)	76 (table spoons)
65%	1 (table spoon)	4 (table spoons)	21 (table spoons)	41 (table spoons)
68%	1 (table spoon)	4 (table spoons)	20 (table spoons)	39 (table spoons)
70%	1 (table spoon)	4 (table spoons)	19 (table spoons)	38 (table spoons)

Annex 8 : Recommended cleaning schedules for CTC/CTU

Patient area	Frequency	Responsible staff	Products/Supplies	Additional guidance
Triage area: floor and surface	At least twice daily + after each patient (the surface)	cleaning staff	Cleaning solution (neutral detergent and water) Disinfectant (alcohol, chlorine-based, other as approved) If using chlorine-based solution, make new solution after 24 hours Freshly made solutions, cloths, and mops for each cleaning session, disposable paper towel, Discard/reprocess supplies after each cleaning session	Focus on high-touch surfaces, then floors (last)
Inpatient rooms / cohort – occupied	At least daily, twice daily preferable	Cleaning staff		Focuses on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible
Inpatient rooms – unoccupied	Upon discharge/ transfer	cleaning staff (terminal cleaning)		Low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, bed thoroughly cleaned and disinfected
Outpatient / Ambulatory Care rooms	After each patient visit and at least once daily terminal cleaning	Clinical staff (after each patient); Terminal cleaning (cleaning staff)		High touch surfaces to be disinfected after each patient visit; terminal clean as above (end of day)

Hallways / Corridors	At least twice daily	Cleaning staff	Dedicated supplies for inpatient isolation areas **PPE:** gowns and/or impermeable aprons, non-sterile gloves rubber gloves, medical mask, and eye protection (preferably face shield) and gum boots	High-touch surfaces (e.g., railings)
Hallways/Corridor Spill of blood and body fluids (splashes and drips)	Immediately after the spill	Cleaning staff		Disinfect area with paper towel soaked with 0.1% chlorine solution, give a contact time of one minute then wipe with clean water, dry surface with disposable paper towels and perform hand hygiene
Hallways/Corridor Spill of blood and body fluids (large spill)	Immediately after spill	Cleaning staff		Cover spill with disposable towel or cloth soaked in 0.5% Chlorine, for 3-5 minutes, remove paper towel, clean the area with detergent solution and wipe surface with fresh 0.5% chlorine solution and wait for 1 minute then rinse with water and dry surface with paper towel or mop
Patient toilets	Private (at least daily); Shared (at least three times daily)	Cleaning staff		High-touch surfaces, including door handles, light switches, counters, faucets, then sink bowls, then toilets and finally floor (in that order)

Annex 9: Daily cleaning checklist

Place a **"Y"** for all areas that meet the inspection standard. **Date Completed**_____

Comment on areas that do not meet the standard. **Completed by**_____

ROOM or WARD #_____	**If Yes = Y** **If No = N**	**COMMENT**
Hand wash sink clean		
Soap, alcohol rinse dispensers are clean/stocked/not expired		
Ceiling, air vents clean		
Sharps container checked, garbage bins emptied		
Equipment- i.e., IV stand and base, oxygen cylinder and/or concentrator, wheelchair etc. clean		
Shelves or cupboard handles and surfaces clean and free of tape and hand prints		
Bedside table surface and pulls clean		
Chair(s)- clean		
Room fan on countertop dust-free		
Windows, ledges are clean on inside and ledges are dust free		
Floors clean, not sticky, free of soil		
Counters where medications and supplies are prepared		
Doorknobs, light or fan switches		
Others:		
BED		
All side rails are free of tape, and clean, including both sides of rails, crevices around controls, bottoms of rails		
Frame is dust free		
Controls at foot of bed are clean and dust free if applicable		
BATHROOM		
Sink, faucet and counters free of water spots and clean		

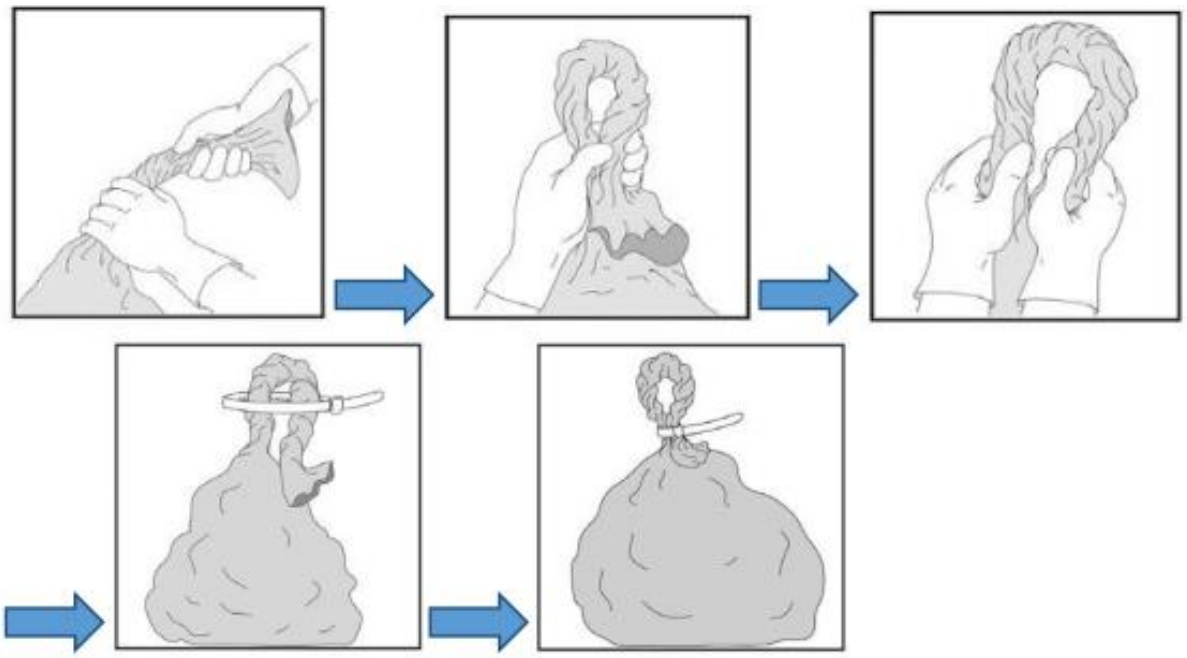
Soap dispensers are clean and stocked		
Lights are dust free, mirror clean, light switches clean		
Toilet/latrine is clean (handle toilets seat etc.), floor around and behind toilet/latrine is clean		
Pipes around toilet are free of water build up and clean		
Bathroom smells clean, no odors noted		
Bathroom door is clean and free of handprints, handles are clean		
Others:		
TOTAL ITEMS MET PER ROOM	**/32**	

Annex 10 : Five keys to safer food poster


Five keys to safer food
Keep clean
Separate raw and cooked
Cook thoroughly
Keep food at safe temperatures
Use safe water and raw materials
Knowledge for Prevention

Annex 11 : Health care waste management

Annex 12 : Waste collection/removing bin liners



Annex 13 : TORs of different IPC personnel

Terms of Reference For Infection Prevention and Control Committee Responsibilities

1. Monitor, supervise & evaluate all IPC activities in the CTC/CTU
2. Development of workplans, budgets & routine reporting mechanisms
3. Oversee the implementation of the IPC programme and plans
4. Report to other related committees
5. Provide advice on IPC and related matters
6. Liaise with in-service training coordinators on training programme(s) in IPC at the facility
7. Disseminate information and reports on IPC to relevant senior managers and clinical leads across the facility
8. Play a lead role in advocacy and resource mobilization for IPC activities (securing an annual budget for IPC, human resources, staff health and safety)
9. Routine meeting to review IPC activities and other related subjects

Terms of Reference For Infection Prevention and Control Focal Person Responsibilities

1. Assess the IPC level of their CTC using the daily IPC checklist
2. Participate in the development of an improvement and maintenance plan for IPC conditions/gaps in the CTC
3. Ensure that trainings are done for all staff (Managers, Technical, Domestic etc)
4. Carry out the implementation of IPC activities in the CTC
5. Give feedback on IPC evaluation results, its health structure to other healthcare providers and ensure the implementation of the improvement plan
6. Maintain attendance register of staff who are trained in IPC
7. Make sure copies of all IPC guidelines, policies, SOPs are available at the CTC
8. Collect feedback from health care providers on their IPC activities during implementation and send them to the Facility QI focal person/manager

9. Organize monthly IPC meetings in the CTC to ensure reporting of IPC activities
10. Keep minutes of IPC meetings
11. Keep and track Action plans for IPC activities
12. Ensure that the IPC committee is multidisciplinary
13. Keep a copy of IPC work plans for the CTC
14. In collaboration with the pharmacist and the QI manager of the health facility, ensure that the IPC supplies and resources are available at all times
15. Ensure integration of IPC, WASH and Antimicrobial stewardship activities
16. Should compile monthly and quarterly report and share with in-charges, CTC manager, Director and QMD
17. Participate in renovations and new infrastructure to ensure IPC considerations are taken into account
18. Ensure Quarterly Internal IPC assessments are done and results are shared at the CTC and QMD Zonal

Terms of Reference for Patient Attendant

Responsibilities

1. Bathing patients, feeding patients, dressing patients.
2. Removing soiled linen from patients beds abd changing wih cleaner ones
3. Making beds for patients.

Terms of Reference For Disease Control and Surveillance assitants

Responsibilities

1. Conduct Chlorine solution preparation
2. Monitoring the FRC in water used at the CTC/CTU
3. Conduct Health education
4. Work with the nurses to support dead body management
5. Support cleaning and disinfection of the CTU/CTC
6. Support in vector control in the CTC/CTU

Roles and responsibilities of the cleaners

1. Decontaminate all allocated places as per schedule

2. Maintain refills of disinfectants at all times in all designated places
3. Maintain refills of hand hygiene supplies at all times in all designated places
4. Decontamination of all reusable items after each shift

Roles and responsibilities of the waste handlers

1. Ensure the bins are emptied when ¾ full
2. Ensure the waste collection containers are regularly decontaminated
3. Ensure appropriate temporary storage and or dispose of all wastes