10 March 2020

COVID-19 Emergency Response

WASH and Infection Prevention and Control (IPC) in Health care facilities (HCF) Guidance Note

Understanding Infection Prevention and Control:

According to WHO, infection prevention and control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients and health workers. It is grounded in infectious diseases, epidemiology, social science and health system strengthening. IPC occupies a unique position in the field of patient safety and quality universal health coverage since it is relevant to health workers and patients at every single health-care encounter.

Poor WASH and IPC lead to health acquired infections, transmission of diseases from health facilities to communities and increased use of antibiotics and exacerbate outbreak and spread of infections- in this case- COVID- 19. On the contrary, effective IPC reduces hospital-acquired infections by at least 30% (WHO 2016).

In the context of HCFs, we also differentiate IPC and WASH: IPC cannot be met without WASH services, the later providing the basis for adequate IPC (water, sanitation and hygiene services). It is important to note that with a potential increased patient influx, the demand for water and sanitation services might be higher than the available offer and that it will be essential to support the gap to avoid health service to be disrupted. The below guidance also applies to temporary screening facilities set-up where WASH services need to be put in place or strengthened. However, we do not include the screening process itself and medical equipment disinfection and sterilization as part of UNICEF WASH, but we acknowledge that HEALTH can intervene on these aspects. We also must bear in mind that each country MoH has norms and standards in terms of water and sanitation for health facilities, that COs must be aware of.

Important resources to read:

Joint WHO-UNICEF WASH technical brief:	https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19
WHO technical guidance pages on IPC:	https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control https://www.who.int/infection-prevention/publications/en/
WHO revised online IPC training:	https://openwho.org/courses/COVID-19-IPC-EN

Key practices for IPC and WASH in HCFs:

- Hand Hygiene (handwashing with soap and running water or alcohol- based hand rub AHRB/ sanitizer) and safe cough and sneeze etiquette in all settings
- Ensure availability of safe water in adequate quantity and sanitation services at all time
- Environmental cleanliness (cleaning floors, surfaces and any touch points and linen)
- PPE and WASH equipment disinfection (aprons, boots, googles, waste containers, water containers)
- Infectious and hazardous waste management

What WASH can do to reduce infection risk in health care facilities (HCFs)

COVID-19 emergency response requires a triangulated approach to inform (C4D), educate (RCC, WASH and Health) as well as provide the needed resources (**WASH and IPC**).

First steps include:

- Undertake a quick assessment (using WASH-FIT) to determine HCFs without WASH services and those with the highest patient population which could undermine their safety. In the framework of the contingency COVID-19 response plan, it is likely that MoH will identify HCFs that are utilized for screening only and those for patients treatment; each type will require a different degree of IPC intervention and a coordination with MoH and WHO to clearly share roles & responsibilities. The WASH assessment will need to be done based MoH priorities in terms of geographical areas and HCFs as not all can be tackled at the same time. Capacity assessment must be done, and training health care workers and non-medical staff on IPC measures in coordination with Health colleagues may be needed.
- Prepare a plan for providing and improving or upgrading WASH services and supplies for O&M and treatment. It is important to procure and distribute critical hygiene and prevention items like soap, hand-sanitizer, chlorine (HTH 60-70%) commercial disinfectant (eg. clorox) and disinfection materials (mop, buckets etc.), masks drinking water dispensers, and personal protection equipment for use of hygienists in HCFs.
- Develop a simple system to monitor functionality of services - in both supported and non-supported HCFs, the following aspects must be monitored: availability of water and chlorine, handwashing systems (water/soap, alcohol rub /hand-sanitizers or chlorine water), treated water, toilets cleanliness and thorough disinfection (separated from suspected/confirmed cases and other persons), fecal sludge management where required, medical and solid waste regular disposal and safe elimination.

Provision of WASH services

Water: Is required to support personal hygiene including hand washing with soap as a key preventive measure. Water should also be available for regular cleaning and disinfection purposes, personal hygiene, cleaning, disinfection, laundry and other activities while sufficient drinking water remains crucial.

Key actions:

- **Ensure that safe and adequate running water is available in HCF** especially at points of care (screening rooms, examination rooms, injection rooms, wards, treatment rooms, labour rooms, delivery rooms and postnatal care rooms as well as mortuaries), and for environmental cleaning, laundry activities, personal hygiene and decontamination of equipment and surfaces.

- **If there is no running water**, all means must be put in place to secure continued availability of water for health care facility use, this includes water trucking or installation of water storage.

- **In areas where trucking water is opted for**.
  A. Each truck load should be checked for free residual chlorine (>0.5 mg/l)
  B. Allow water to settle in the tank before releasing for use.
  C. Ensure regular cleaning of storage tanks.

- **Ensure the water is safely treated.** A number of measures can be taken to improve water safety starting with collection and safe storage of treated water in regularly cleaned and covered containers. Furthermore, conventional, centralized water treatment methods which utilize common filtration system and disinfection should inactivate SARS-CoV-2.

- **All water used within HCFs should have a residual concentration** of free chlorine of ≥ 0.5 mg/l after at least 30 min contact time at pH < 8.0. A chlorine residual should be maintained throughout the distribution system.

- **When possible, provide water stations with pedal-operated taps and devices or water dispensers with sensors to minimize hand contact and reduce the risk of infection**; avoid installation of metal taps where possible and use elbow operated taps (as in surgical rooms) where feasible; in most cases though, where standard taps are in use, ensure taps are regularly disinfected together with regular handwashing or provide paper towels to use when opening and closing taps and facilities for disposing of towels safely.

Technical Annex: https://www.who.int/water_sanitation_health/hygiene/envsan/chlorineresid.pdf

Sanitation:

COVID-19 is less likely to be transmitted through fecal-oral and body fluid routes, the respiratory route remains the major route of transmission. However, precautionary principles apply and all fecal sludge generated from HCFs must be properly disposed of.
Around 1 in 5 HCF lack a sanitation service. That means, over 1.5 billion people are going to health centers with no toilets at all[i]. The COVID-19 emergency response efforts demand the availability of safely managed sanitation systems such as improved latrines or toilets connected to a septic tank or sewer lines to safely confine and treat faeces. As for the water demand, there might be an increased need of toilets and volume of faecal sludge and wastewater to collect and eliminate due to patients influx in HCFs.

Wastewater from washing hands, cleaning, laundry, bathing, flush toilets and teeth brushing activities should be safely collected and treated with chlorine before being sent to sewer lines or infiltrated into a soak-away pit (providing the water table is at least 1.5 m under the bottom of the pit at any time). The potential of contamination to the sanitation crew, the general community, healthcare workers and environment is of course, of critical concern.

Key actions:

- Ensure the safe collection, separation, storage, transport, treatment and final disposal of patient feces and wastewater from screening and treatment HCFs.
- Ensure availability of clean and adequate toilets or latrines, dedicated for suspected and confirmed cases of COVID- 19, complying with local MoH standards.
- Support and advise on the proper use of toilets to avoid droplets splashes.
- Use chlorine solution and lime to treat (i) wastewater from washing hands, cleaning, laundry, bathing and teeth brushing activities and (ii) feacal materials respectively.
- Whereas the disinfection power of chlorine kills viruses in wastewater, inactivating viruses in feacal materials shall be done by raising the pH of the feacal materials by lime to higher levels (>12) for 30 minutes.
- Ensure availability of disinfection supplies (chlorine, lime materials, detergents) and equipment (backpack and hand sprayers, incinerators and autoclaves).
- Assess the availability of desludging trucks, sewage holding tanks and locations of desludging to ensure they are safely managed and do not represent a risk for the nearby communities.
- Liaise with Health teams to ensure that Sanitation staff are trained on the WHO recommended procedures for donning/doffing PPEs

Technical Annexes:

https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf
https://www.lime.org/documents/lime_basics/fact-safety_precautions.pdf
Protocols for safe disposal of contaminated faecal sludge (based on Liberia Ebola response 2015) HERE

[i] *WHO / UNICEF Joint Monitoring Programme Report for WASH in Healthcare Facilities, April 2019*

Personal hygiene:

Hand hygiene and safe behaviors are key IPC measures for preventing the transmission of COVID-19 in HCFs.
Hand hygiene must be performed at every point and moment after touching surfaces in HCFs; touching doors handles, elevator doors and buttons, after removing masks; going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing. There is a need to make hand sanitizers or handwashing facilities positioned in every critical HCFs room (entrance, screening and observation, care, near toilets, exit).

Key actions for Hygiene are shared responsibilities:

- Hand rubbing with an alcohol-based formulation makes hand hygiene possible at the point of care, is faster, more effective and better tolerated (HEALTH, WASH); alternatively, regular hand washing with soap and water, or a 0,05% chlorine solution, is necessary to avoid infection.
- The appropriate technique and time taken to clean hands is also important (20-30 seconds for alcohol rub and 40-60 seconds for handwashing with clean water and soap) (C4D, HEALTH and WASH)
- Where patient care is taking place, hand hygiene facilities, including products (e.g. alcohol-based hand-rub if available, water, soap, sinks) should be **in place, easily accessible, as close as possible** (e.g. within arm's reach) to the point of care to fulfil the right times for hand hygiene in support of patient and health worker safety (HEALTH, WASH).
- Support behavioral change amongst health workers, patients and care takers towards effective hand hygiene as part of quality of care and patient safety. (C4D, WASH, HEALTH).
- For patients and visitors, avoid close contact with people who are sick - no hugging, kissing, shaking hands (HEALTH).
- Remind, brief and train healthcare workers, patients and clients including mothers on why, when and how to wash hands frequently (HEALTH, WASH, C4D).
- Ensure the availability of hand washing stations with soap and water or alcohol rub/hand sanitizers in healthcare facilities and other points of care (WASH).

Face hygiene messages should also be disseminated to patients and care takers:

- Avoid touching your eyes, nose, and mouth if hands have not been disinfected previously
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash. Always disinfect or washing your hands with water and soap after. Covering the mouth with bare hands while sneezing is not recommended.

Technical Annexes:
https://openwho.org/courses/COVID-19-IPC-EN (Module3, slide 11-17)
https://www.cdc.gov/handhygiene/providers/guideline.html
https://www.cdc.gov/vhf/ebola/pdf/making-hand-washing-solution-bleach-hth.pdf
https://www.cdc.gov/healthywater/hygiene/etiquette/coughing_sneezing.html

Environmental cleaning:

Environmental cleaning is a key IPC measure for preventing the transmission of COVID-19.

Existing recommended cleaning and disinfection procedures in HCF should be followed consistently and correctly. Laundry and surfaces in all medical environments should be regularly (at least once a day and when a patient is discharged) cleaned. There are many disinfectants, that are active against COVID-19. Currently, WHO recommends the use of:

- 70% Ethyl alcohol to disinfect small areas e.g. reusable dedicated equipment (e.g., thermometers) between uses
- Sodium hypochlorite at 0.5% (equivalent 5000ppm) for disinfection of surfaces.

Key actions:

- Clean and disinfect frequently touched objects using a regular household cleaning spray or wipe.
- Wipe down often-touched surfaces such as door and window nobs, doors handles, elevator buttons, with disinfectants or a household cleaning spray.
- Ensure adequate environmental cleaning including facility floors and walls and other surfaces.
- Cleaning staff (hygienist) should be trained on the WHO recommended procedures for donning/doffing PPEs and on decontamination practices.

Technical Annexes:

https://openwho.org/courses/COVID-19-IPC-EN (Module 3, slides 23-33)

WHO IPC MODULE 3 – PPT HERE

CDC poster on how to make 0,5% chlorine solution:

https://www.cdc.gov/vhf/ebola/pdf/cleaning-hand-washing-with-chlorine-powder.pdf

https://www.niinfectioncontrolmanual.net/cleaning-disinfection

Waste management:

Solid waste management including HCF infectious waste volumes will increase because of higher generation of personal protective equipment (PPEs) such as gloves, face and nose masks, water-proof protective gowns, rubber boots, rubber apron, and other contaminated materials including paper tissues. To reduce waste volumes, it is advisable to use reusable plastic PPEs that can be cleaned and disinfected with 0.5% chlorine solution. Proper collection, storage, transfer, treatment and final disposal of infectious waste from healthcare facilities and COVID -19 treatment units is key.

Ensure IPC protocols are in place in health care facilities, implemented and monitored effectively (waste collection, segregation waste storage, treatment and final disposal, incinerators/autoclaves, sprayers).

Key actions:

- Pedal-operated waste collection bins with liners should be available at point of use in healthcare facilities as the preferred choice.
- In the absence of pedal-operated waste bins, bins with swinging lids can be opted as the alternative. Otherwise, open waste containers are better than those which require physical opening/covering by hands.

- Color-coded waste segregation bins according to the 3- bin system (infectious waste, sharps and general waste). Waste bin coding /labelling is key to identify infectious healthcare waste and home-based materials to prevent infection. Waste bin liners should also be procured.
- Waste record keeping is important to understand how much waste is generated per day.
- Storage location to cater for large volumes, transport mechanism in decontaminated trucks and final disposal arrangements through incineration and autoclaves should be arranged in advance.
- Pit burning with the aid of fuel drops such as kerosene can be opted in the absence of incinerators and autoclave.
- Train waste handlers and sanitation crew on donning/doffing PPEs, decontamination, Infection Prevention and Control (IPC) measures.

Technical Annexes:

ICRC: https://www.icrc.org/en/doc/assets/files/publications/icrc-002-4032.pdf

CDC: https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/medical-waste.html#i2