

Standard Operating Procedures (SOPs)

WASH SDG Programme | July 2021



Standard Operating Procedures (SOPs) for WASH in Health Care Facilities (HCFs)

SNV in Nepal | July 2021

SNV



About SNV

SNV is a not-for-profit international development organisation that makes a lasting difference in the lives of people living in poverty by helping them raise incomes and access basic services. We focus on three sectors and have a long-term, local presence in over 25 countries in Asia, Africa and Latin America. Our team of more than 1,300 staff is the backbone of SNV.

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Photo © Female Community Health Workers demonstrating handwashing with soap in Khadak municipality, SNV

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Abbreviations

BCC	Behaviour Change Communication
CVR	Climate Vulnerability and Resilience
FSM	Faecal Sludge Management
GESI	Gender and Social Inclusion
HAI	Hospital Acquired Infections
HCF	Health Care Facility
HFOMC	Health Facility Operation and Maintenance Committee
ICU	Intensive Care Unit
IDP	Inpatient Department
IEC	Information, Education, Communication Materials
MHM	Menstrual Hygiene Management
NGO	Non-governmental Organisation
OPD	Outpatient Department
OT	Operating Theatre
SDG	Sustainable Development Goal
SoP	Standard Operating Procedure
WASH	Water, Sanitation, and Hygiene
WSP	Water Safety Plans

1 Background

In 2018, the Secretary-General of the United Nations made a global call for a collective action to institute Water, Sanitation, and Hygiene (WASH) in all Health Care Facilities (HCFs). This emphasised its irrefutable link to the achievement of the Sustainable Development Goals (SDGs), particularly SDG 6 – safe water and adequate sanitation for all.

Globally, the provision of WASH services in HCFs is low, both in coverage and quality. The significance of the situation of WASH in HCFs first came to light following the global review conducted by the WHO and UNICEF in 2015. It was reported that 38 per cent of HCFs in low- and middle-income countries lacked an improved water source, 19 per cent were without improved sanitation and 35 per cent did not have water and soap for handwashing.

With such evidence gaps and constraints at hand, the international community recognised the need to engage governments, institutions, development partners, civil society organisations, academia, communities, and other global and national partners in improving the quality and coverage of WASH services in HCFs. To achieve this, developing and implementing evidence-based, people-centric, and responsive programme strategies is required. Such approaches serve to ensure that HCFs have safe and accessible water supply, improved sanitation infrastructure, hand hygiene facilities at points of care and toilets, and proper waste disposal systems.

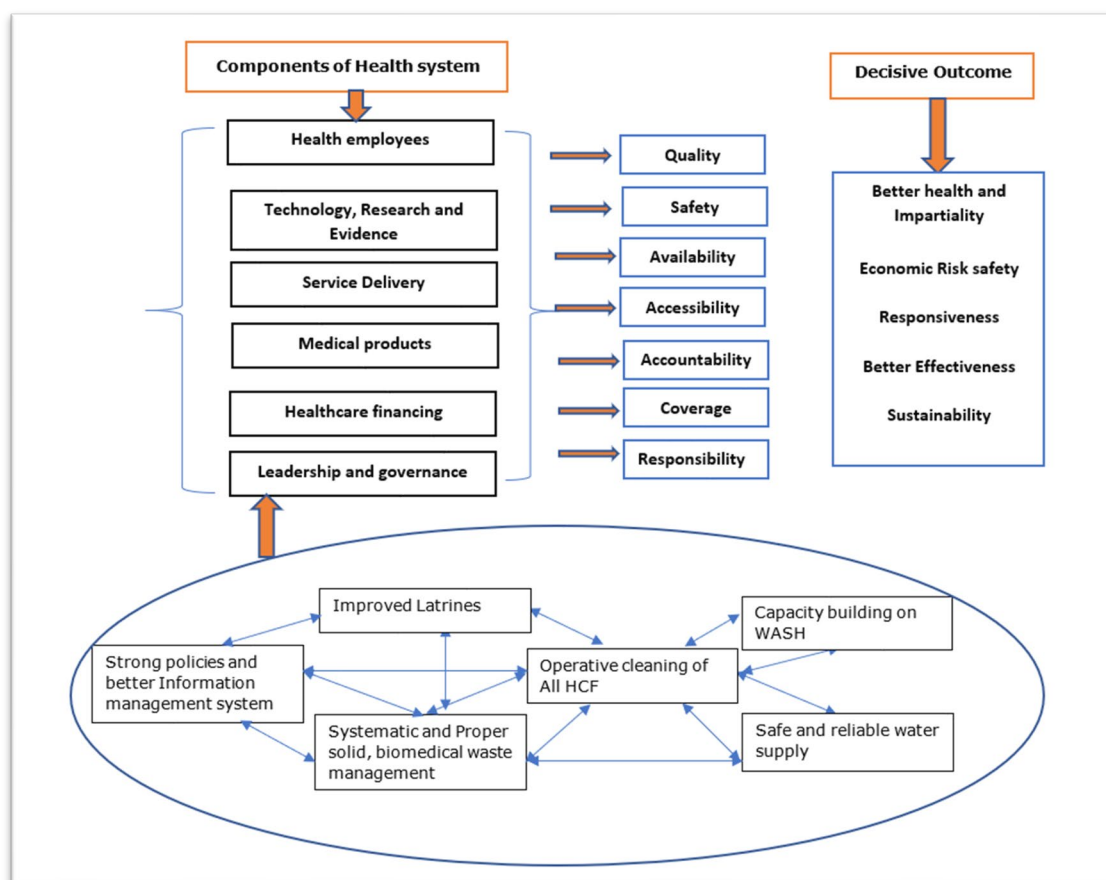
1.1 Systematic approach to integrating WASH in HCF

This systematic approach comprises core components considered to be the building blocks of a health system. The governing aspects of the approach involve strong leadership and monitoring, effective service delivery with sufficient medical products, adequate health employees, and systematic health care financing are core to the healthcare system.

The guiding principle for applying the standard operating procedures (SoP) is dependent on seven aspects: quality, safety, availability, accessibility, accountability, coverage, and responsibility. Together, these result in more effective and responsive HCFs with better health impartiality, economic risk safety, and more sustainable services.

Therefore, the SOPs entail a set of uniform standards to improve the quality of health care delivery in working cities. Furthermore, they can also be used as a reference point for public health care infrastructure planning and upgrading, which includes improved latrines, capacity-building initiatives on WASH, cleaning of HCFs, safe and reliable water supply, and systematic solid and biomedical waste management. These are further strengthened by strong policies and better information management systems. The building blocks of health systems are dependent on the functionality of the aforementioned points, which are themselves interdependent.

Figure 1: Integrating WASH in HCFs



1.2 Global Targets for WASH in HCFs

Basic services - By 2022, 60% of all HCFs globally and in each SDG region have at least basic WASH services; by 2025, 80% have basic WASH services, and by 2030, 100% have basic WASH services.

Higher service levels - By 2022, higher levels of service are defined and monitored in countries where universal basic WASH services have been achieved already. By 2030, higher levels of WASH services are achieved universally in 80% of those countries.

1.3 WASH in HCFs in Nepal

Although significant progress has been made in improving basic coverage of drinking water and sanitation in Nepal, the improvement rates amongst men and women and different social groups differ significantly. As such, ensuring public WASH facilities in institutions, including schools and HCFs, remains a challenge. In the last two decades, the number of HCFs (including, health posts, primary healthcare centres, hospitals, out-patient therapeutic centres and rehabilitation centres for the treatment of malnutrition) has increased drastically to ensure the availability as well as the accessibility of services closer to communities. In Nepal, there are around 4,418 HCFs including health posts, primary health care centres, hospitals, urban clinics, and community health units that are functional under the government system. In addition, there are about 1,257 registered private health care service sites that are providing

services of various levels mostly in peri-urban and urban areas of Nepal¹. However, almost one-fifth of the HCFS in Nepal do not have access to WASH services. This poses a threat to vulnerable populations seeking health services, including pregnant women and people with disabilities.

1.4 Background to the WASH SDG programme in Nepal

SNV implements the WASH SDG programme in four cities of Nepal: Khadak, Nepalgunj, Chandannath and Birendranagar. The overall goal of the WASH SDG programme is to improve health and quality of life for men and women across all social and ethnic groups through access to sustainable, inclusive, safe sanitation, and improved hygiene practices. SNV is promoting disability-inclusive development so that WASH facilities will be safe, accessible, and usable by everyone. Since its inception, SNV's WASH SDG project has framed solutions within a 'citywide service chain approach' and promoted viable options for business models for Faecal Sludge Management (FSM) services. SNV aims to work with local authorities to seek sustainable financing for viable FSM business models and business plans through encouraging private sector participation and exploring pathways for repayable funding.

SNV aims to sustainably improve access to, and use of, safe drinking water for at least 450,000 people, sanitation for at least 2 million people, and improve the hygiene behaviours of 1,6 million people before the end of 2022. The programme is built on three core strategic objectives: (1) increase demand for improved WASH facilities and practices; (2) improve the quality-of-service provision; and (3) improve governance of the sector. In addition, gender and social inclusion (GESI) and climate vulnerability and resilience (CVR) are integrated in each of the three strategic objectives.

1.4.1 WASH in HCFS in the WASH SDG Programme Areas

In the WASH SDG municipalities (Birendranagar, Khadak, Jumla and Nepalgunj), almost all HCFS have limited sanitation facilities. They lack segregated sanitation facilities for staff and patients, males and females, in-patients, and out-patients, and those that are suited for people with disabilities (see Annex 1). Handwashing stations also need to be promoted in HCFS in Birendranagar, Chandannath and Nepalgunj. The performance against Menstrual Hygiene Management (MHM) indicators is poor, considering that most HCFS do have toilets. The majority of HCFS in all the municipalities have faecal waste emptied and disposed of in the immediate environment.

1.5 Guiding Principles for Applying the Standard Operating Procedures (SOPs)²

Availability: ensure HCFS have enough functioning WASH infrastructure and are delivering quality services.

Accessibility: ensure the population, health care workers, and other users have easy (mainly physical and financial) access to WASH services, including information and health education, in a manner that is unbiased and non-discriminatory.

¹ Shreshtha. A.M. et al (2017). WASH in health care facilities: initiatives, challenges and lessons from Nepal post emergencies, 40th WEDC International Conference, Loughborough, UK, 2017

² Extracted from National Strategy for Water, Sanitation and Hygiene In Healthcare Facilities: A Framework For Action (2021 – 2030), Bhutan

Acceptability: ensure WASH infrastructure and services are people-centric, bearing the core features of inclusivity and responsiveness, geared towards catering to the specific needs of diverse groups of a population, and following the international human rights and ethical health practices.

Quality: ensure WASH facilities and services meet national standards and fulfil the expectations of the users in terms of assuring safety, effectiveness, timeliness, and in addressing their needs.

Responsibility: ensure the involvement of stakeholders, relevant agencies, and individuals at organisational, institutional and community levels in planning, implementing, and monitoring interventions for WASH in HCFs.

Accountability: ensure the practice of good governance while managing WASH in HCF resources, including human, financial, and institutional resources, so that efforts to scale up and sustain WASH services are not undermined.

1.6 Objectives of the SOPs for HCFs

- Increase equitable access to quality WASH services and improve medical waste management and environmental cleaning in HCFs.
- Develop capacities of health workforce and communities to promote and sustain WASH services and practices.
- Review and regularly monitor progress made in WASH indicators to incrementally improve WASH services and practices.
- Promote GESI tools and techniques such as accessibility audit to ensure equitable access to public WASH services.

2 WASH Facilities in HCFs

2.1 WASH requirements of HCFs

With poor drainage and sewage facilities, poorly designed toilets and facilities are often not conducive to cleanliness. Attempts should be made to correct the civil infrastructure over a period e.g., the gradient of drains, installation of an overhead tank in each block, de-silting, and repair of the septic tank etc.

A facility should have an adequate number of toilets and bath facilities, determined largely by the caseload.

Table 1: WASH and other requirements of amenities in hospitals

(Note: The number of toilets and bathing facilities per patient/staff member will depend on whether the HCF is a large, medium, small, an outreach service or mobile camp. This table refers to large and medium health care facilities, as they are the only ones with inpatient capability. These facility types must meet advanced II standard.)

1.	Water closet (This is sufficient for an inpatient ward. However, in the case of waiting areas/reception areas there must be one male block (one toilet, three urinals, double hand washing basin) and one female block (three toilets, double handwashing basin. Additionally, in outpatient settings there must be at least one male staff toilet and one female staff toilet per block/department. These must each have handwashing stations.)	1 for every 8 beds (male) 1 for every 6 beds (female)
2.	Ablution taps	1 for each water closet plus 1 water tap with drainage arrangement in the vicinity of a water closet. All the ablution taps must be accompanied by a basin. All must also have hot and cold water (Additional locations where handwashing stations necessary covered on p.12 of this document)
3.	Urinals	1 for every 12 beds (male only)
4.	Washbasin	1 for every 12 beds
5.	Baths	1 bath with shower for every 12 beds (There must be at least one shower per unit or one shower per 40 possible users, however this includes patients and healthcare workers. As such one bath with shower per twelve is likely to be sufficient, but only when there are 18 or less staff that access it. Additionally, there must be separate male and female shower facilities)
6.	Bedpan washing sink	1 for each ward
7.	Cleaner's sinks and sinks/slab for cleaning mackintosh	1 for each ward in dirty, utility, and sluice room
8.	Kitchen sinks	1 for each ward dishwashers/pantry

Adequate water supply must be ensured for cleaning activities. The requirements of an average hospital are provided in Table 2.

Table 2: Water Requirement of Health Facilities

Critical areas	Water quantity
Outpatient Department	5 litres/consultation
Inpatients Department	40-60 litres/patient/day
	15 litres/ cares/day
Operation Theatre/ Maternity Unit	100 litres/intervention
Wet supplementary feeding centre	15 litres/consultation
Inpatient Therapeutic feeding centre	30 litres/patient/day
	30 litres/patient/day
Cholera treatment centre	60 litres/patient/day
	15 litres/carers/day
Severe acute respiratory diseases	100 litres/patient/day
Pathology lab	10 litres/test
Emergency camp / hub hospital (Intensive management of water supply is required to protect staffs, carers and patients from disease such as cholera and viral haemorrhagic fever.)	Backup of water supply system for emergency camp/hub hospital of capacity equivalent to existing daily supply quantity.
Backup in case of supply failure	Minimum 2 days backup should be provisioned in case of supply system failure for all health facilities.

2.2 Water

2.2.1 Water source

- HCFs must have an improved source on the premises that always supplies water (i.e., water available throughout the year and not affected by seasonality, power outages, etc.). Improved water sources include piped water, borehole well, protected wells, protected springs, rainwater, and packaged or delivered water from a licensed supplier.
- A functional water collection point should be available at all points of care (e.g., consulting rooms, delivery rooms, etc.).
- A functional water collection point and water use facility should be available to allow convenient access to water for drinking, handwashing, toilets, personal hygiene, food preparation, laundry, cleaning, gardening, and medical purposes.
- Water piping must be functional (i.e.no major leaks, all endpoints are connected to an available water supply).

- Drinking water should be made available to staff, caregivers and patients, including children and people with limited mobility (every storey of a multi-storey building)
- An HCF should have a secondary improved water source that can be used in case of interruptions to the primary water source. With poor drainage and sewage facilities, poorly designed toilets and facilities are often not conducive to cleanliness. Attempts should be made to correct the civil infrastructure over a period e.g., gradient of drains, installation of an overhead tank in each block, de-silting and repair of a septic tank etc.

2.2.2 Water storage

HCFs should have safe, secure water storage on-premises. The storage tank should have the reserve capacity to supply the HCFs with two full days of backup water in case of interruptions to the main water supply. Water storage should be covered to prevent contamination and cleaned on a regular basis. The storage should be free from any cracks and leakages.

2.2.3 Water quality

Drinking water quality should meet the 2005 National Drinking Water Quality Standards. If the HCF is using jar water then it should meet the national standard for processed drinking water. Likewise, tanker water should follow the tanker directives/ Nirdeshika 2073. However, monitoring all the parameters of the supplied water regularly is impractical, hence the following selected parameters need to be monitored regularly and meet the target:

- Drinking water should be appropriately free of residual chlorine (FRC, 0.2 mg/L or 0.5 mg/L) at emergency or free of escherichia coli or thermo-tolerant coliform bacteria in any 100 mL sample. Other physical/chemical parameters should be determined as per the national/WHO guidelines.
- Drinking water should be accessible to all staff, patients, and caretakers, especially children and people with disabilities.
- The system from which water is being supplied needs to implement Water Safety Plans (WSP), and water quality surveillance needs to be integrated as a part of the verification.
- A regular monitoring mechanism should be in place within HCFs (WASH FIT could be the best option for this).
- Drinking water should not contain any tastes, odours, colours, or other elements which could discourage consumption.
- Drinking water points should be provided separately from water provided for handwashing and other purposes, even if originating from the same supply.
- Water that is not of drinking-water quality is used only for cleaning, laundry, and sanitation.

2.3 Improved latrines

HCFs should have adequate functional and accessible improved sanitation facilities for healthcare workers, support staff, patients, and caretakers. An HCF improved sanitation facilities should be:

- Child-friendly - Door handles and seats are within reach.
- Gender-sensitive - Segregated male and female toilets; sanitary disposal unit in female toilets; effective door locking system, sufficient space for changing sanitary wear.
- Disability-sensitive - Accessible without stairs or steps with an unobstructed pathway from the HCFs (if outside the building). Fitted with handrails attached either to the floor or sidewalls. Built with sufficient room within the cubicle/stall for a wheelchair to turn around. Built with a door that is at least 80 cm wide. The door handle, rails, and seat are within reach of people using wheelchairs or crutches/sticks. Other elements should be added where appropriate (e.g., guide rope for people with a visual impairment).

Additionally, disability-friendly and child friendly toilets should have the following characteristics: Ramp with rail; braille floor; handles up to toilet; Handles on either side of toilet, Low wash basin (child, wheelchair), Desirable: Baby napping changing area

- Latrines must have running water facilities and water points.
- Latrines must have openings for natural light and be ventilated with a net.
- Toilet bowls and urinals should be cleaned with disinfectant regularly.
- As far as possible toilet floors should be kept dry.
- Greywater- Separate pipe and soak pit. In health posts this can be combined with toilet septic tanks if water use is low
- The specifications for septic tanks are to be as follows: Double chamber 48 hours retention period; Emptied every 5 years; Sludge taken to treatment plant or buried; Personal protective equipment worn at time of emptying.
- The specifications for direct latrine pits are to be as follows: In the terai - Lateral distance to groundwater well minimum 10m; distance between bottom of pit and groundwater to be a minimum of 1.5m; and Emptied every 3 years. In the hills/mountains - new pit made when full sludge is taken to treatment plant or buried; Personal protective equipment worn at time of emptying.

2.4 Hygiene facilities in HCFs

- HCFs should have functional hand hygiene facilities which are available in all critical areas such as Outpatient Departments (OPDs), Inpatient Departments (IPDs), emergency areas, waiting areas, labs, maternity units, and all toilets. Hand hygiene facilities consist of handwashing basins/stations (sink, bucket with lid, tap, and with drainage facilities with soap).
- HCFs should have accessible handwashing facilities for children and people with limited mobility. These should be in nearby toilets, waiting areas, and maternity units.
- To address personal hygiene in Tertiary, Secondary, and Primary hospitals, bathing facilities should be available for all staff and patients. These must be located within the sanitation facilities or in a separate building. Inpatient wards need a bathing facility in toilets for persons with disabilities
- MHM facilities should be in latrines, including available water and a wastebin with a lid for disposal of products
- Availability of sanitary pads for emergency needs of service seekers.
- Liquid hand soap must be available at all handwashing stations.
- Training must be provided to all HCF staff on handwashing at critical points (before and after touching patients and before touching medical instruments) and hand sanitising protocols.
- Gloves should not be used as an alternative to handwashing. Hand hygiene is required before putting on gloves and immediately after they have been removed.
- Signs demonstrating appropriate handwashing and hand sanitising techniques should be placed at all hand washing stations and different strategic locations (Showing six step handwashing).
- Hand drying facility also necessary – either paper towel (napkin) or electric hand dryer machine
- Two Baby Pots per facility

2.4.1 Other hygiene measures (COVID-19 related)

- Provision of COVID-19 monitoring/screening desk at the HCF entrance.
- A universal mask-wearing policy should apply, particularly in the context of COVID-19.
- Staff should be regularly reminded to cover their mouth and nose whilst coughing and sneezing, using disposable tissues that should be immediately disposed of in a bin. In cases where this is not possible, staff should immediately wash their hands with soap and water.
- Health staff should not travel to and from work in their uniforms and should change out of their uniforms before they step outside the HCF.

2.5 Hospital cleaning products, machines, and procedures

In HCFs a wide range of chemicals and disinfectants are used for various clinical, nursing, laboratory, and radiological procedures. For cleanliness purposes the following groups of the chemical compound are in use:

- Iodophors
- Phenolics
- Chlorine releasing agents
- Quats
- Miscellaneous

Iodophors: The iodophors group of disinfectants have an iodine base. Though they kill a large range of microorganisms, they are expensive. Since these compounds have low pH, their detergent action is limited. In a hospital, they are often used for 'part-preparation' prior to surgery or any invasive procedure. When used on a floor, discolouration of the floor may occur.

Phenolics: These groups of disinfectant chemicals have a carbolic acid-base, derived from coal tar. Chlorinated fractions and petroleum residues are added to improve their cleansing and physical properties. Usually, they are black or white fluids. More potent than iodophors, they are an irritant to skin and mucosa, and corrosive to metal surfaces. White fluids are emulsified suspension and precipitate on surfaces, making subsequent cleaning difficult.

Chlorine: Chlorine releasing chemicals are cheap and effective at low concentrations. They act by releasing nascent chlorine. However, freshly prepared chlorine solution remains active for 6 to 8 hours after its constitution. It has the advantage of being effective against a wide variety of microorganisms such as virus, fungi, bacteria, and spores. Chlorine solution becomes deactivated by organic matters (e.g., pus, dirt, blood, etc.) and damages plastics, rubber, some metals, and fabrics. These chemicals are not compatible with some detergents and acidic fluids including urine. They can liberate free chlorine which is harmful in a confined space.

Quats: Quaternary Ammonium Compounds have antimicrobial properties. Certain quaternary ammonium compounds, especially those containing long alkyl chains, are used as antimicrobials and disinfectants, such as Benzalkonium Chloride, Benzethonium Chloride, Cetylpyridinium Chloride, Cetrimide, etc. They are found to be effective against fungi, amoeba, or certain types of viruses. Their activity is reduced in the presence of organic substances and hard water.

2.5.1 Miscellaneous

Alcohol: Ethyl and Isopropyl Alcohol in higher concentration (60 – 70%) are fast-acting and effective disinfectants. Alcohol has the added advantage of leaving the skin dry. However, alcohol does not have penetrative power. Although active against Mycobacterium, they are ineffective against spores and a few viruses such as poliovirus. Alcohol wipes may be used for rapid disinfection of smooth clear surfaces, e.g., trolley tops, thermometers, probes, steel tabletops, etc.

Hydrogen Peroxide: Hydrogen peroxide is commonly used to disinfect equipment and environmental surfaces in a few countries including the UK. It is effective against viruses.

Detergents: Loosely defined soaps, alkalis and synthetic agents are detergents. 'Soap' and 'detergent' are often used interchangeably, although they refer to different substances. A detergent is a chemical substance that is used to break up and remove grease and grime, whereas soap is simply one kind of clearing agent.

2.5.2 Choosing a disinfectant for an HCF

A disinfectant for an HCFs should have the following properties:

- Fast activation on reconstitution.
- Works well with relatively hard water or water with high salt content.
- Compatible with commonly used commercial detergents or washing powders.
- Users do not require special protective equipment other than a standard mask and pair of gloves.
- Does not corrode metal surfaces.
- Preferably bactericidal disinfectants rather than those with bacteriostatic properties.

2.5.3 Floor cleaning equipment

Mechanical cleaning equipment is costly compared to the traditional cleaning devices (bucket, mop, wiper, etc.) and requires regular specialised maintenance and repair. However, depending upon the resource availability, some mechanised cleaning equipment should be added to the inventory and used regularly.

Carts: Cleaning carts are available with different options – with or without various shelves, doors or waste receptacles. A cart with a lockable door is preferable in the Paediatrics Ward.

Floor machines: When purchasing floor machines many factors must be considered, including ease of operations, safety features, the strength of the motor, availability of spare parts and after-sale service. Floor machines are usually available in sizes from 12 inches to 23 inches. Smaller diameter machines are preferred for cleaning crowded OPDs and patient care areas and navigating narrower corridors.

Consumables including mops, soap, chemicals, and disinfectants should be standardised. This should also include personal protection equipment. The HCF administration needs to ensure that a regular supply of equipment and consumables is maintained with the provision of 20 per cent reserve stock.

2.6 Cleaning HCFs – WASH and other facilities, etc.

The best practice to improve the cleanliness at HCFs is to follow the approach below (Figure 2).

Figure 2: PDCA Cycle



A single person can manually clean up to 250 square metres per work shift. Staff should be available on a 24 x 7 basis as per requirement. Rotation of staff in critical areas like the Operating Theatre (OT), Laboratory, Intensive Care Unit (ICU), and wards may be kept to a minimum.

Responsibility and accountability: An in-house Housekeeping In-charge should be appointed to report directly to the Facility In-charge or the Nursing In-charge. In case the sanitary staff number is over 30, an additional Sanitary Supervisor should be appointed for every additional 15 Sanitary Workers. Housekeeping responsibilities should be delegated through the in-house Supervisor to the Contractor's Supervisor to maintain a single chain of control and thus ensuring better supervision and accountability. It must be emphasised, however, that the responsibility of keeping an area/department clean lies with the In-charge of that area/department. The in-charge/in-charge should coordinate with the housekeeping supervisor for deputing the staff to their respective departments. Common areas should be directly supervised by the Housekeeping Supervisor.

Skills and competency: The housekeeping staff deployed in HCFs must understand the importance of a clean hospital and its surroundings and the requirements specific to such facilities. Furthermore, they must be made aware that they are also vulnerable to Hospital Acquired Infections (HAI) and occupational hazards and should be adequately trained to prevent and report them.

Rational Deployment: Rational deployment of the sanitary staff in shifts must be planned and implemented properly so that cleanliness is maintained continuously. Areas with no or very minimal patient interaction and visitors such as the office and stores can be cleaned once a day and grouped with other such areas, whereas the critical areas are required to be cleaned more frequently.

Patients and visitors to the facility: To maintain high standards of cleanliness, the involvement and cooperation of patients and their visitors is of paramount importance. This is achievable through appropriate Behaviour Change Communication (BCC) and Information, Education, Communication (IEC) activities. Non-governmental Organisations (NGOs) and local body members should assist in spreading awareness amongst patients and visitors.

2.6.1 Frequency of cleaning

Following general cleaning activities are recommended in a hospital³:

Table 3: Detailed frequency of cleaning of operation theatres / ICU / labour rooms / NICU / isolation wards

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Cleaning of instruments	After every procedure	Soap and water followed by sterilisation
3.	Cleaning of clean areas and corridors of the complex	Two times a day/as and when required	Damp-mop with detergent and water/0.5% chlorine

³ Practical guidelines of Infection Control By WHO

4.	Mopping (care to be taken in case of special epoxy flooring)	Three times a day and after each procedure	Damp-mop with detergent and water/0.5% chlorine
5.	Cleaning of equipment including anaesthesia machines, monitors, ventilators, infant warmers/baby cribs, etc.	Two times a day/as and when required	Damp-mop, dry, disinfect with 70% isopropyl alcohol/2% glutaraldehyde
6.	Fumigation	Once a month/after infected case surgery	Formaldehyde
7.	Cleaning of OT table and OT stretcher	Two times a day/after each surgery	0.5% chlorine /70% Isopropyl alcohol
8.	Doctor/Nurse/Technician room	Two times a day	Detergent and water
9.	Washroom and washbasins cleaning	Three times a day/as and when required	Wash with soap and water, dry wipe with 0.5% chlorine
10.	Washing of slippers	Once a day/as and when required	Soap and water
11.	Collection of soiled linen and sluicing	As and when required	Soak in clean water with bleaching powder 0.5% for 30 minutes. Wash again with detergent and water to remove the bleach. Or, launder in hot water (70- 80 degrees Celsius) if possible.
12.	Cleaning of mops	After every use	Soak in clean water with bleaching powder 0.5% for 30 minutes. Wash again with detergent and water to remove the bleach.

Table 4: Detailed frequency of cleaning of moderate risk area wards

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	At least two times a day-more when bags are $\frac{3}{4}$ full	As per the Municipal guidelines
2.	Mopping of floor	Once a day	Damp-mop with detergent and water
3.	Washrooms and washbasin	Three times a day/as and when required	Wash with soap and water, dry, wipe with 0.5% chlorine
4.	Dusting/cleaning of Equipment	Once a day	Damp-mop, dry, disinfect with 70% isopropyl alcohol
5.	Collection of soiled linen and sluicing	As and when required	Soak in clean water with bleaching powder 0.5% for 30 minutes. Wash

again with detergent and water to remove the bleach. Or, launder in hot water (70/80 degrees Celsius) if possible

Table 5: Detailed frequency of cleaning of canteens and kitchens

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	At least three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Mopping of floor	Once a day	Damp-mop with detergent and water
3.	Washrooms and washbasin	Once a day	Wash with soap and water, dry, wipe with 0.5% chlorine
4.	Dusting	Once a day	Duster

Table 6: Detailed frequency of cleaning of public area washrooms

S. No.	Activity	Frequency	Agents used
1.	Cleaning	Every two hours	Damp-mop with detergent and water
2.	Washrooms and washbasin	Three times a day	Wash with soap and water, dry, wipe with 0.5% chlorine.

Table 7: Detailed frequency of cleaning of lobbies and OPD areas

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Mopping of floor	Once a day	Damp-mop with detergent and water
3.	Washrooms and washbasin	Once a day	Wash with soap and water, dry, wipe with 0.5% chlorine
4.	Dusting	Once a day	Duster

Table 8: Detailed frequency of cleaning of lobbies and OPD areas

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Dusting	Once a day	Duster
3.	Mopping of floor	Once a day	Damp-mop with detergent and water

Table 9: Detailed frequency of cleaning of a mortuary

S. No.	Activity	Frequency	Agents used
1.	Garbage Removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Dusting	Once a day and after every procedure	Duster
3.	Mopping of floor	Once a day and after every procedure	Damp-mop with detergent and water
4.	Cleaning of autopsy table	Once a day and after every procedure	0.5% chlorine / 70% isopropyl alcohol
5.	Drains	Once a day	Soap and water

Table 10: Detailed frequency of cleaning of administration records / offices

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Dusting	Once a day	Duster
3.	Mopping of floor	Once a day	Damp-mop with detergent and water
4.	Dry mopping	Once a day	Soft brush
5.	Washrooms and washbasin	Once a day	Wash with soap and water, dry, wipe with 0.5% chlorine

Table 11: Detailed frequency of cleaning of laundry

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Dusting	Two times a day	Duster
3.	Mopping and washing of the floor	Two times a day	Damp-mop with detergent and water
4.	Mopping sterile areas	Once a day	0.5% chlorine/ 70% Isopropyl alcohol
5.	Fumigation	Once a month or when required	Formaldehyde
6.	Washrooms and washbasin	Once a day	Wash with soap and water, dry, wipe with 0.5% chlorine

Table 12: Detailed frequency of cleaning of radiology and laboratories

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the municipal guidelines
2.	Dusting of infrastructure	Once a day	Damp duster, dry, wipe
3.	Cleaning of equipment	Once a week	Damp cleaning, dry, 70% isopropyl alcohol
4.	Mopping and washing of the floor	Two times a day	Damp-mop with detergent and water
5.	Washing of slippers	Once a week	Detergent and water
6.	Washrooms and washbasin	Once a day	Wash with soap and water, dry, wipe with 0.5% chlorine

Note: A neutral detergent and warm water solution should be used for all routine and general cleaning. When a disinfectant is required for surface cleaning, e.g., after spillage or contamination with blood or body fluids, the manufacturer's recommendations for use and occupational health and safety instructions should be followed.

2.6.2 Methods of cleaning

Cleaning using mechanical equipment has made great inroads in HCFs across the world. Although it is capital intensive and user training is required before handling the equipment, mechanical cleaning is more efficient, and a bigger area can be cleaned in a shorter time. Mechanical cleaning equipment is worth procuring, especially in larger facilities.

Preparation for cleaning: Different areas require varying levels of cleanliness, e.g., the OPD and waiting areas do not require as stringent a level of cleanliness as the OT or the ICU. As far

as possible, wet mopping is preferred over dry sweeping to avoid circulating dust and allergens.

Preparation – all personnel must:

- Wear gumboots or disposable shoe covers.
- Rubber gloves are recommended as minimum
- Wear a cap, mask, an impermeable apron which must be impermeable and/or gown.
- Prepare germicidal cleaner (phenyl) in clean water as per the dilution directions mentioned on the product label, both in the wringer bucket as well as plastic pail.
- Move cots and furniture as per the directions of the supervisor to one side.
- Use a blunt knife to remove any dried or sticky dirt on the floor.
- Use a treated dry mop or nylon push broom and dustpan to clear the loose soiling on the floor.

Performance

- Sweep dust to the doorway before collecting it in the dustpan and discarding into the bin.
- Wet the mop in germicidal solution (phenyl) and wring gently so that the mop holds enough solution necessary to disinfect the floor. Wet mop the floor in one direction and ideally from the centre outwards toward the door. Mopping water should be changed frequently, especially when noticeably dirty.

Direction of the cleaning

- Sweeping should be unidirectional.
- In healthcare facilities, the direction of cleaning should be from the clean to the dirty area. A ward or other closed area should be cleaned from inwards out.

Instructions for cleaners

- Clean furniture and cot castors with a duster using a germicidal solution prepared in a plastic pail, directly or with a spray bottle.
- Restore tables and cots to their original positions and remove cleaning equipment and tools from the room.
- Complete a final check to ensure cleaning has been finished thoroughly, paying particular attention to door stoppers, door handles and latches.
- Ensure the room is free from personal belongings and cleaning equipment.
- Rinse equipment in fresh germicidal solution and return to designated storage.

Finishing

- Remove gown carefully, wash, and let dry.
- Remove cap and mask, wash, and let dry.
- Remove gloves, wash, and let dry.
- Wash hands as per handwashing steps.

Practical suggestions

- All loose particles and litter should be removed before dealing with any stubborn stains or dirt.
- Try standard cleaning procedures before resorting to stronger substances or more complex methods
- Ensure any implement or cloth is clean and dry before use.

- If possible, use a double bucket system when mopping floors so that dirty water is not reused. The first bucket should contain clean water in which the mop is dipped. The second bucket should act as a receptacle into which dirty water is wrung after mopping.
- Ideally, a three-bucket system should be practised. The first bucket should contain detergent to be used initially. The mop is then rinsed into the second bucket and dipped in a third bucket which should also contain a disinfectant.
- Abrasives should be used as a last resort as they can damage surfaces. Use an agent which leaves the least offensive smell if possible.
- When cleaning a surface, be cautious of marring the surroundings area, e.g., fingerprints on walls, grazing other articles, etc.
- Use methods that cause the least inconvenience to patients. Noise or obstacles placed in public areas can cause a disturbance.
- Ensure that during the cleaning process areas do not become high risk for accidents e.g., due to wet, slippery floors. Place a cautionary sign if required.
- Cleaning should be carefully planned to make efficient use of time.

In an HCF, chlorine solution is frequently used to disinfect surfaces, plastic waste, etc. Common sources of chlorine are either bleaching powder or commercially available Hypochlorite solution. The following points must be considered whenever a chlorine solution is being used:

- The solution should be freshly prepared.
- Effectiveness of solution decreases with the passage of time and presence of organic matter

Table 13: Preparation of chlorine solution using hypochlorite solution

Concentration of commercially available hypochlorite solution	Required chlorine concentration	To prepare 1000ml	
		Solution in ml	Add water in ml
5%	2%	400	600
	1%	200	800
	0.50%	100	900
10%	0.50%	50	950
	1%	100	900
	2%	200	800

Table 14: Preparation of chlorine solution using bleaching powder solution

Strength of stable bleaching powder	Volume of water	Desired concentration	Bleaching powder in grams per litre
20%	1 litre	0.50%	25
		1%	50
		2%	100
		5%	250

25%	1 litre	10%	500
		0.50%	20
		1%	40

2.6.3 Safety precautions while cleaning

Accident prevention and safety measures should be implemented to avoid accidental falls among patients and visitors, as well as protecting the staff. A few such measures are mentioned below:

- Ideally, the facility should be cleaned when patients and visitors are not present. If this is not possible then they should be requested to step aside or wait outside for the duration of the cleaning.
- Avoid wet and slippery floors.
- Use appropriate cautionary signage.
- Arrange furniture in a manner that provides easy accessibility for patients.
- Pay attention while cleaning the electrical switchboards. Do not sprinkle water or liquids on the electrical connections.

2.6.4 Storage of cleaning/ housekeeping articles/material

- Storage for housekeeping materials should be clearly marked to enable easy access for the housekeeping staff. Daily usable supplies should remain in the closets provided in that area which should be clean, odour free, and dry. The equipment and storage closet should be cleaned every week
- The toilet cleaning materials should be stored in a separate place. Store disinfectants and cleaning chemicals separately.
- Storage should be managed by the housekeeping Supervisor. On a weekly or preferably daily basis, the housekeeping Supervisor should check the store to monitor stock and serviceability of equipment, and to replenish when required
- Once used, mops and cleaning cloths should be washed and dried, and never left soiled or wet.
- Brooms are best left standing upside down on the handle so that the water drains away from the bristles.

2.7 Cleaning of drinking water facilities

- Water coolers must be kept clean and always covered. They must be emptied completely at least once a month and the tank cleaned. The water should ideally be filtered through a purifier. There should be drainage for spill over.
- The area surrounding must be kept dry.
- Electric wires and plugs must be checked monthly to ensure that they are in good condition.

2.7.1 Cleaning of water tanks

- Water tanks should be cleaned once every quarter.
- The tanks must be emptied completely. The inside of the tank should be scrubbed with detergent / soap and water with a brush and then repeatedly rinsed / flushed with water to ensure that the detergent / soap has been washed away. Special care must be taken to clean the corners and joints, ensuring that no soap or dirty water remains. The tank should be allowed to dry before filling and reusing.
- If the tank is heavily soiled with algae and sediment, it should be disinfected with chlorine. After allowing an exposure time of 1 hour the tank should be emptied and flushed with water to remove any residual chlorine.

2.8 Cleaning of maintenance of latrines in HCFs

- Toilets should be clean and absent of waste, visible dirt, excreta, insects, and stagnant water.
- Cleaning materials (i.e., water, soap, disinfectant, mops, scrub brushes, etc.) should be made available for performing regular cleaning.
- A regular cleaning and maintenance schedule should be in place for sanitation facilities to maintain cleanliness and functionality.
- Cleaners should understand the importance of their role and trained in cleaning practices, including making disinfectant solution. They should be provided with adequate cleaning supplies and personal protective equipment.
- At a minimum, personal protective equipment for cleaners should include rubber gloves, rubber boots and an impermeable apron. When there is a risk of splash to the face, cleaners must wear eye protection and surgical masks.
- There should be no major holes, cracks, or leaks in the toilet structure.
- Toilets should be maintained to ensure there is no blockage.

2.9 Food hygiene in HCFs

2.9.1 Receiving food

- All items are received by the hospital store or kitchen.
- The department store verifies the quality and quantity of goods received as per the purchase requisition request.
- Fresh vegetables and fruits are washed at the receiving area.

2.9.2 Food storage

- The objective is to maintain good quality food at temperatures and conditions which ensure retention of quality and safety.
- Dairy products, fruits, and dry items (pulses, wheat etc.) are stored separately.
- The food products in-store should be ventilated, and temperature controlled where appropriate
- Storing dry goods:
 - Food must be stored on shelves one foot above floor level.
 - Sacks must be stored on pallets and never directly on the floor.
 - Pallets should be removed weekly and cleaned.
 - Any spillages must be cleaned immediately.
- Bread must be stored in a well ventilated, cool area.
- Flours and cereals must be stored in sacks in a damp-free environment and inspected regularly for infestation.
- Storing fresh items:
 - Fruits and vegetables must be stored in a dry room.
 - Fruit and salad items should be stored in a manner that allows air to circulate.
 - Potatoes must be stored in crates in a dry room.
 - Milk, dairy products and cream must be kept separate from all raw products in a refrigerator.
- Raw and cooked foods must be stored separately.
- Refrigerators should be sited away from heat sources and running temperature should be checked and documented two times a day.

2.9.3 Food preparation

- Fresh vegetables must be washed prior to pre-processing.
- All preparation surfaces must be kept clean.
- Raw food is to be kept separate from cooked food.
- Salad items must be washed thoroughly in a salad wash.
- Food that is at high risk of infection should be prepared as near to consumption as possible.
- Separate utensils must be used for raw and cooked foods.
- Prepared food must be covered and kept under the correct temperature before use.

- Kitchen waste must be collected and disposed of properly.

2.9.4 General cleaning

- Suitable cleaning equipment including mops, mop buckets, disinfectants, detergents, brushes, scouring cloths, deck brushes and cleaning cloths must be available.
- Cleaning supplies must be stored separately from food items.
- Mop heads must be changed at least once in two weeks or as necessary.
- Chopping Boards must be washed after each use and dried in an area where air circulates freely.

2.9.5 Weekly cleaning of refrigerators

The following procedures can be applied to work-in and reach-in refrigerators:

- Switch off the unit and remove all food items, ensuring that these are covered appropriately and are kept safe during the cleaning process.
- Remove all shelves and clean in lukewarm water mixed with detergent solution.
- In an upright refrigerator, remove the mobile food trolley.
- Clean the fridge base and wipe the interior walls with the detergent solution mixed with water. Scrub all shelves rinse and dry (if required) otherwise wipe with a damp cloth.
- Remove all condensation from drip trays (if applicable) and wipe down all walls with a clean cloth.
- Replace all shelves.
- Switch on the unit.

2.9.6 Pest control

- The objective is to maintain a sanitary environment, preventing contamination/spread/transmission of disease by insects or rodents or any other pests.
- Insecticide must be sprayed routinely over baseboards, backs of large equipment, cabinets and lower-level storage areas. Traps should be put out for rodents.
- Any evidence of pests found by the staff must be reported immediately.

2.9.7 Medical check-up and health of food handlers

All personnel working in the kitchen and handling food must undergo periodic health checks, which must be recorded.

2.9.8 Disposal of kitchen waste

Disposal of kitchen waste is of utmost importance to minimise the risk of rat, cockroach, and fly infestations, and their associated health hazards. Kitchen waste is to be segregated into wet items to be taken for composting (Biodegradable waste should be sent to biogas plant/to compost (in a pit)) and dry items – essentially glass and tin objects.

2.10 Cleaning infectious disease wards

- The room is to be washed with soap and water followed by cleaning with 0.5% chlorine solution. If tiled, the walls must be washed with soap and water followed by disinfectant with 0.5% chlorine then left to dry with the doors and window open
- The room can be fumigated with formaldehyde and kept sealed for at least 12 hours before opening the windows and doors to let the vapours evaporate. During fumigation, beds, mattresses, and pillows can be left inside the room.
- The bed linen must be washed with 0.5% bleaching solution followed by cleaning with plain water and detergent. Alternatively, the linen can be laundered in hot water (70-80 degrees Celsius) to remove bleach and sent separately for washing or dry cleaning.
- Blankets, mattresses and pillows can be washed with detergent and water and then left to dry in the sun.
- Housekeeping staff working in the isolation ward must wear personal protective gear and take all the necessary precautions to prevent contracting disease.

Table 15: Diseases requiring isolation

Diseases requiring isolation	
1. Severe influenza cases	6. Pertussis
2. SARS/Coronavirus	7. Chickenpox
3. Open cases of tuberculosis	8. Pneumonic plague
4. Anthrax	9. Patients suffering from multi-drug resistant pathogens
5. C. diphtheria ³	10. Patients with low immunity

2.11 Disposal of waste

The responsibility of the disposal of hospital waste lies with the Head of the facility to ensure the disposal is completed properly and does not harm human health or the environment. The chief of HCF, concerned health workers, authorized person, HCWM committee members and concerned municipality should take the responsibilities of health care waste management. Simple environmentally friendly in-house steps, such as composting non-infected biodegradable waste should be adopted. Segregation of waste must occur at the point of generation as per government guidelines - Waste needs to be safely segregated into at least three different colours coded (green, blue, red) containers. Red for infectious waste, Blue for recyclable waste and Green for biodegradable wastes

Waste may also be disposed of through the local municipality waste management system. Alternatively, waste may be taken for composting or vermicompost.

Wastewater must also be disposed of effectively since it can serve as a breeding ground for mosquitoes. Muddy puddles present slip hazards and hold the risk of transmitting waterborne illness to children who play in them.

HCFs in small towns may dispose of the general waste by deep burial or composting. Such burial areas should preferably be situated away from populated areas and water points (wells, hand-pumps) etc. They should be enclosed to prevent access by animals.

The area should be kept clean, with the planting of trees and plants encouraged.

The burning of plastic waste is hazardous to human health and must not be practised. Plastic bags must be segregated and recycled. If plastic is coming out of the patient care area, it must be disinfected by chlorine solution and destroyed to prevent its re-circulation.

Biomedical waste disposal should be completed by an agency authorised by the government. If such a facility does not exist, the hospital authorities must install a plant in accordance with an environmentally sound waste disposal plan, compliant with the government guidelines. Waste management needs may for mobile/temporary HCF may vary, depending upon the services provided. Hence, HCWM is applicable as per the service provided in the specified category of the HCF, for example if the temporary HF provides secondary hospital level service then HCWM standard should comply to the same level.

2.11.1 Composting

Constructing a compost pit:

- A two-tank system for garden and general waste is recommended
- A small tank of 1m x 1m x 1m is made above ground
- The tank may be divided into two halves vertically by a vented wall.
- The floor is covered with twigs and small branches.
- The waste is deposited over this layer and spread in the tanks.
- After a layer of 15 to 20 cm dry green leaves is formed, and then covered by a thin layer of soil before being sprinkled with water.
- This process of alternate layers of waste and mud is followed till the tank is about $\frac{3}{4}$ full, following which the other tank is used.
- The contents of the first tank are to be left alone for about two months before being used as manure.

2.11.2 Vermicomposting

Vermicomposting has gained popularity during last few years. In this method, a few species of earthworms (*Eudrilus eugeniae* or *Eisenia foetida* and *Perionyx excavates*) are added to the compost. These worms help to break down the waste and their added excreta enriches the compost with nutrients.

- To make a compost pit, a covered or designated site is selected.
- Preferably the pit should be lined with granite or brick to prevent nitrate pollution of the subsoil water.
- Organic matter should be covered with a layer of dried leaves or a thin layer of soil each time it is added to the pit, allowing air to circulate.
- Usually, after 6 to 8 weeks the rich pure organic matter is ready to be used.

2.12 Disposal of bio-medical waste

- Chemical treatment using at least 1% bleaching powder solution/hypochlorite solution or any other equivalent chemical reagent. It must be ensured that chemical treatment ensures disinfection.
- To prevent unauthorised reuse, items must be shredded or otherwise destroyed.
- There will be no chemical pre-treatment before incineration. Chlorinated plastics shall not be incinerated.

Table 16: Categories of Biomedical Waste

Option	Waste Category	Treatment and Disposal
Category No. 1	Human Anatomical Waste (Human tissues, organs, body parts)	Incineration/deep burial
Category No. 2	Animal Waste (Animal tissues, organs, body parts, carcasses, bleeding parts, fluid, blood, and experimental animals used in research, waste generated by veterinary hospitals or colleges, discharge from hospitals, animal houses)	Incineration/deep burial
Category No. 3	Microbiology and Biotechnology Waste	Local autoclaving/ microwaving /incineration

	(Wastes from laboratory cultures, stocks or specimens of micro-organisms, live or attenuated vaccines, human and animal cell culture used in research and infectious agents from research and industrial laboratories, wastes from production of biological, toxins, dishes and devices used for transfer of cultures)	
Category No. 4	Waste sharps (Needles, syringes, scalpels, blades, glass, etc. that may cause puncture and cuts. This includes both used and unused sharps)	Disinfection (chemical treatment/ autoclaving/microwaving and mutilation/shredding)
Category No. 5	Discarded medicines and Cytotoxic drugs (Wastes comprising of outdated, contaminated, and discarded medicines)	Incineration/destruction and drugs disposal in secured landfills
Category No. 6	Solid waste (Items contaminated with blood and body fluids including cotton, dressings, soiled plaster casts, lines, beddings)	Incineration/autoclaving/ microwaving
Category No. 7	Solid waste (Wastes generated from disposable items other than the waste sharps such as tubing, catheters, intravenous sets, etc.).	Disinfection by chemical treatment/autoclaving/ microwaving and mutilation/shredding
Category No. 8	Liquid waste (Waste generated from laboratory and washing, cleaning, housekeeping, and disinfecting activities)	Disinfection by chemical treatment and discharge into drains
Category No. 9	Incineration ash (Ash from the incineration of any bio-medical waste)	Disposal in municipal landfill
Category No. 10	Chemical Waste (Chemicals used in biological production, chemicals used in disinfection, as insecticides, etc.)	Chemical treatment and discharge into drains for liquids and secured landfill for solids

Notes

- Colour coding of waste categories with multiple treatment options shall be selected depending on the treatment option chosen.
- Waste collection bags for waste types needing incineration must not be made of chlorinated plastics.
- Disposal by the burning of any type of solid waste is prohibited.

2.12.1 Transportation within the health facility

The biomedical waste should be transported within the HCF in covered buckets preferably on wheels so that the bags do not come into contact with the floor.

2.12.2 Standards for deep burial

- A pit or trench should be dug about 2 metres deep. It should be half-filled with waste, then covered with lime within 50cm of the surface, before being filled to the top with soil.
- Covers of galvanised iron/wire mesh may be used to ensure animals have no access to burial sites.
- Each time waste is added to the pit it must be covered by a 10cm layer of soil.
- Burial must be performed under close supervision.
- The deep burial site should be relatively impermeable, and no shallow well should be close to the site.
- The pits should be distant from habitation and sited to ensure that no contamination occurs of any surface water or groundwater. The area should not be prone to flooding or erosion.
- The location of the deep burial site must be authorised by the prescribed authority.
- The institution shall maintain a record of all pits for deep burial.

2.13 Personal protection equipment/gear to be worn by the housekeeping staff for cleaning and waste disposal

Healthcare workers, particularly housekeeping staff, must take precautions and use personal protection in the hospital to counter the risk of contracting disease. Ideally, personal protection will include a plastic apron. Failing that, a cloth apron can be used. The following personal protective equipment should be used by the housekeeping staff:

- Clothing – aprons must be worn over personal clothing to protect direct skin contact with waste. Rubber aprons should be worn wherever liquid waste is being handled.
- Masks must be worn when exposed to dust and allergens. Cloth masks should be used since they can be washed and reused and are more economical long term.
- Waterproof or heavy-duty gloves must be worn especially when handling biomedical and potentially infectious waste.
- Gumboots or rubber shoes should be worn when handling biomedical or wet waste.
- Protective eye goggles should be worn to avoid splashing eyes with infectious or bodily fluids.

Table 17: Specifications of personal protective equipment

Article	Remarks	When used
Gloves - rubber	Household utility gloves can also be used	Handling disinfectant cleaning
Gum boots/rubber shoes		Cleaning patient areas
		Cleaning heavily contaminated areas
		Handling or disposing of waste
Apron – must be impermeable	Alternatively, rubber aprons for labour rooms can be used.	When spills or splashes are expected

Face mask

Respiratory full-face masks For continuous exposure at waste disposal sites/plants

2.14 Monitoring

Sustained monitoring of cleaning must be carried out systemically. The use of checklists will ensure that work is completed appropriately and on time. Checklists can also be used for documenting deficiencies and form the basis of the penalties imposed on outsourced organisations.

The province and district can assess the facilities to score cleanliness levels.

The work of the housekeeping staff will be monitored continuously. Penalties should be imposed for incomplete work. Penalties should also be imposed on the housekeeping staff for improper dress or misbehaviour towards staff, patients, or visitors.

Table 18: Schedule of cleaning activities of operation theatres / ICU / labour rooms / NICU / isolation wards

S. No.	Activity	Frequency	Agents used
1.	Garbage removal	Three times a day and more when bags are $\frac{3}{4}$ full	As per the BMW guidelines
2.	Cleaning of instruments	After every procedure	Soap and water followed by sterilisation
3.	Cleaning of clean areas and corridors of the complex	Two times a day/as and when required	Damp-mop with detergent and water/ 0.5% chlorine
4.	Mopping (care to be taken in case of special epoxy flooring)	Three times a day and after each procedure	Damp-mop with detergent and water / 0.5% chlorine
5.	Cleaning of equipment including anaesthesia machines, monitors, ventilators, infant warmers/ baby cribs, etc.	Two times a day/as and when required	Damp-mop, dry, disinfect with 70% isopropyl alcohol/2% glutaraldehyde (For endoscopes and reusable items)
6.	Fumigation	Once a month/after infected case surgery	Formaldehyde
7.	Cleaning of OT table and OT stretcher	Two times a day/after each surgery	0.5% chlorine/70% Isopropyl alcohol
8.	Doctors/Nurses/Technician room	Two times a day	Detergent and water
9.	Washroom and washbasins cleaning	Three times a day/as and when required	Wash with soap and water, dry, wipe with 0.5% chlorine

10.	Washing slippers	Once a day/as and when required	Soap and water
11.	Collection of soiled linen and sluicing	Linen must be changed daily on OPW or otherwise between each patient use	Soak in clean water with bleaching powder 0.5% for 30 minutes. Wash again with detergent and water to remove the Bleach. Or launder in hot water (70-80 degrees Celsius) if possible.
12.	Cleaning of mops		Soak in clean water with bleaching powder 0.5% for 30 minutes. Wash again with detergent and water to remove the bleach.

Table 19: Sample checklist

Cleaning time	Cleaner's name	Checking time	Supervisor's signature	Remarks
07:00 AM				
08:00 AM				
09:00 AM				
10:00 AM				
11:00 AM				
12:00 PM				
01:00 PM				
02:00 PM				
03:00 PM				
04:00 PM				
05:00 PM				
06:00 PM				
07:00 PM				
08:00 PM				
09:00 PM				

Table 20: Sample checklist for pest control activities

[illegible]

Table 21: Performance and fine

[illegible]

2.15 Roles and responsibilities for WASH in HCFs

2.15.1 Municipality

- Involve in planning processes and identification of needs.
- Allocate the required resources and timely support with WASH needs including budget for upgrading, maintenance, etc.
- Coordinate with different organisations in leverage resources.
- Conduct periodic monitoring and provide feedback as well as follow up.
- Mobilize support from health workers, local communities and other local stakeholders to achieve and sustain a healthy health-care environment.
- Promote a working climate that encourages patient and staff safety.
- Create and assign responsibility to a local body to oversee the implementation of national standards at HCS level.
- Assess existing conditions, consult local stakeholders (including staff and local community) and plan improvements and new developments
- Define a set of targets, policies and procedures for implementing national standards and/or guidelines in a way that reflects local conditions. Define how targets, policies and procedures will be applied.
- Seek funding for planned improvements and new developments.
- Oversee implementation of planned improvements and new developments
- Provide advice and training to health-care workers and patients.

2.15.2 Health Facility Operation and Maintenance Committee (HFOMC)

- Plan and implement WASH activities for achieving and maintaining the WASH targets
- Activate and regularly assess plans and achievements and towards achieving the WASH target.

2.15.3 Health care workers

- Comply with guidelines/standards. Conduct disease prevention work such as hand hygiene and HCWM consistently and to a high standard.
- Care for and maintain WASH facilities.
- Encourage patients and caregivers to adopt appropriate hygiene behaviours.
- Actively participate in achieving and maintaining targets set on the WASH promotion plan.

2.15.4 HCF in-charge

- Monitor compliance to standards/compliance.
- Plan and implement WASH activities for achieving and maintaining the WASH targets.

2.15.5 Support Staff

- Carry out disease prevention work such as the cleanliness of HCFs and waste management consistently.
- Actively work towards achieving and maintaining targets set in the WASH promotion plan.

2.15.6 2.15.6 Additional requirements

Additionally, patients, families and carers, national and international funding bodies, and other communities all have roles and responsibilities in implementing WASH standards in HCF. They are as follows:

Patients - Comply with the standards and guidelines for use and care of WASH facilities and observe hygiene practice by staff of HCF

Patient families and carers - Comply with the standards for use and care of WASH facilities and observe hygiene practice by staff of HCF

National and international funding bodies - Provide funding for new HCFs, upgrading or renovation of existing ones and ongoing maintenance of targets

Other communities - Participate in disease control sessions through community health organisations that might exist. Report on health-care waste found outside HCFs.

Annexures

Annexure 1. WASH status in Birendranagar, Chandannath, Khadak and Nepalgunj municipalities

Figure 3: Access to sanitation by municipality

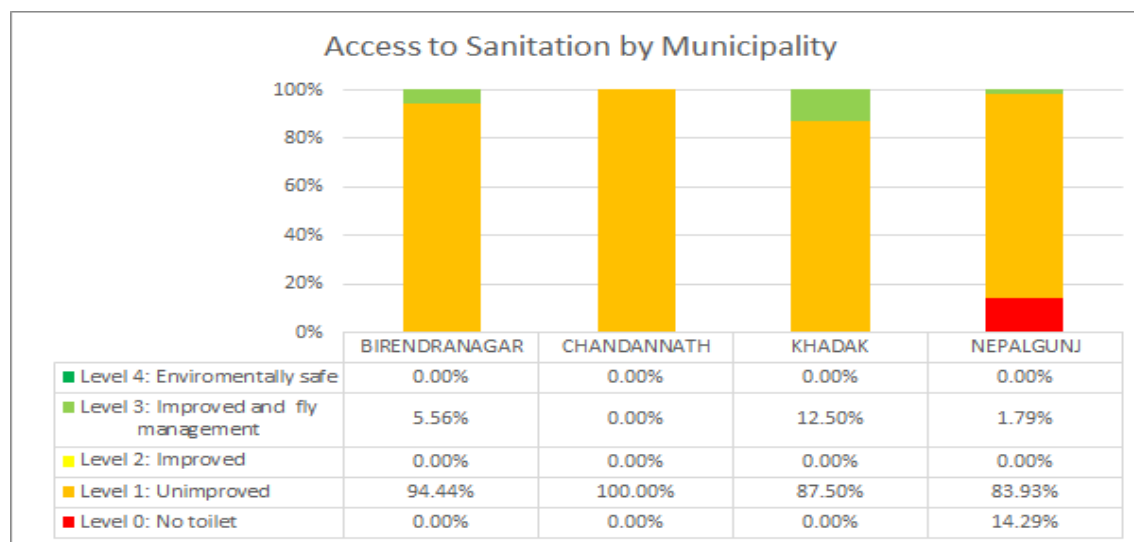


Figure 4: Hand washing with soap after defecation by municipality

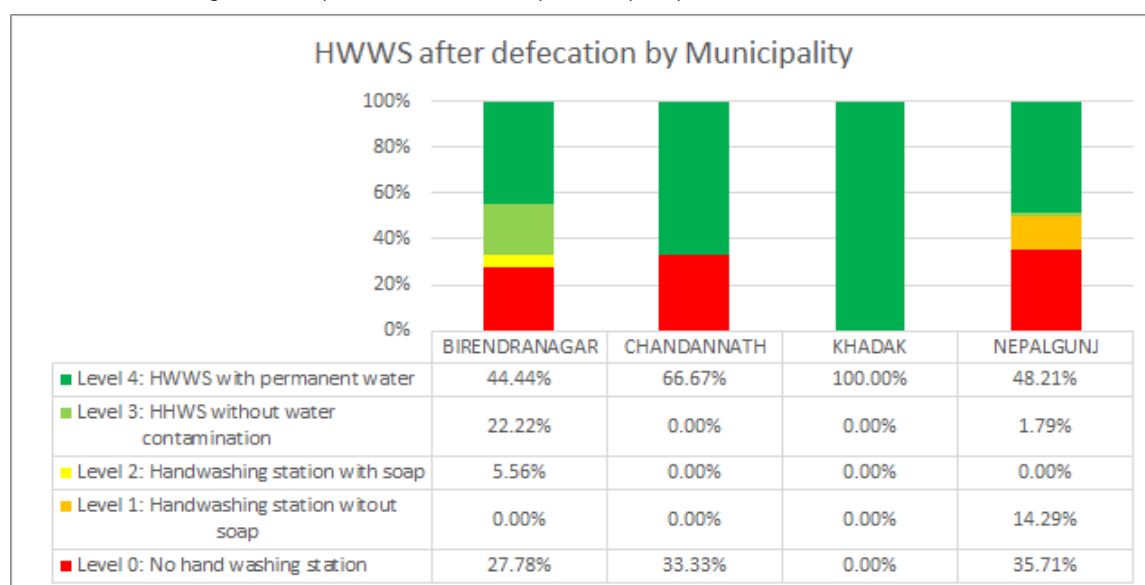


Figure 5: Hand-hygiene at point of care by municipality

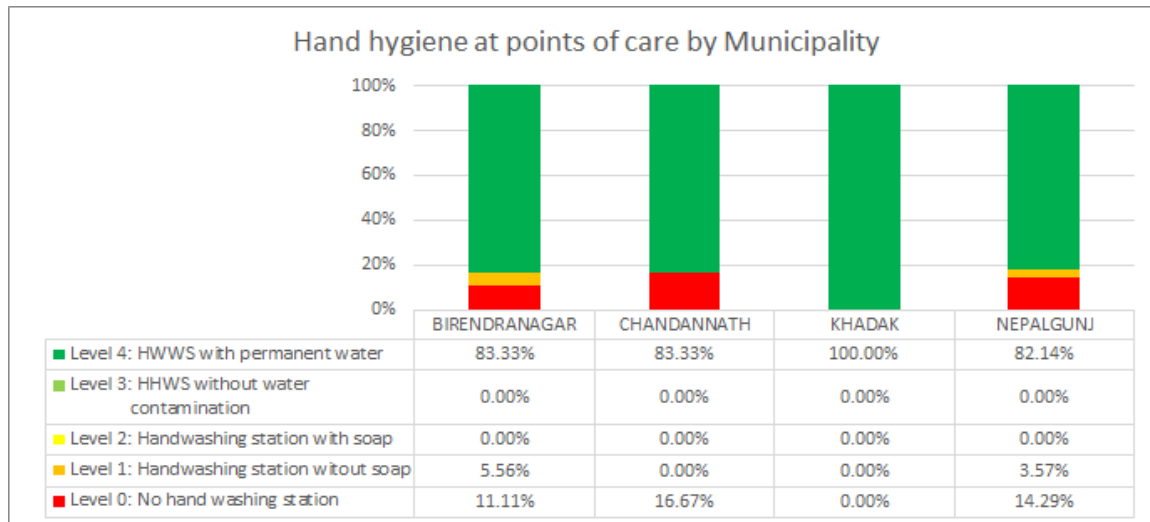


Figure 6: Menstrual hygiene management by municipality

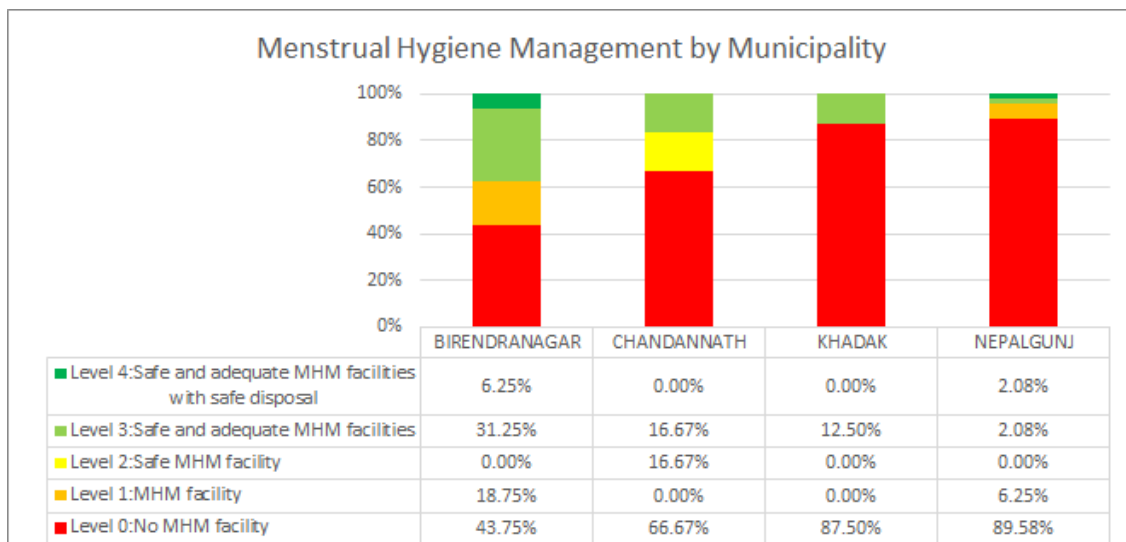


Figure 7: Safe and effective removal of faecal sludge by municipality

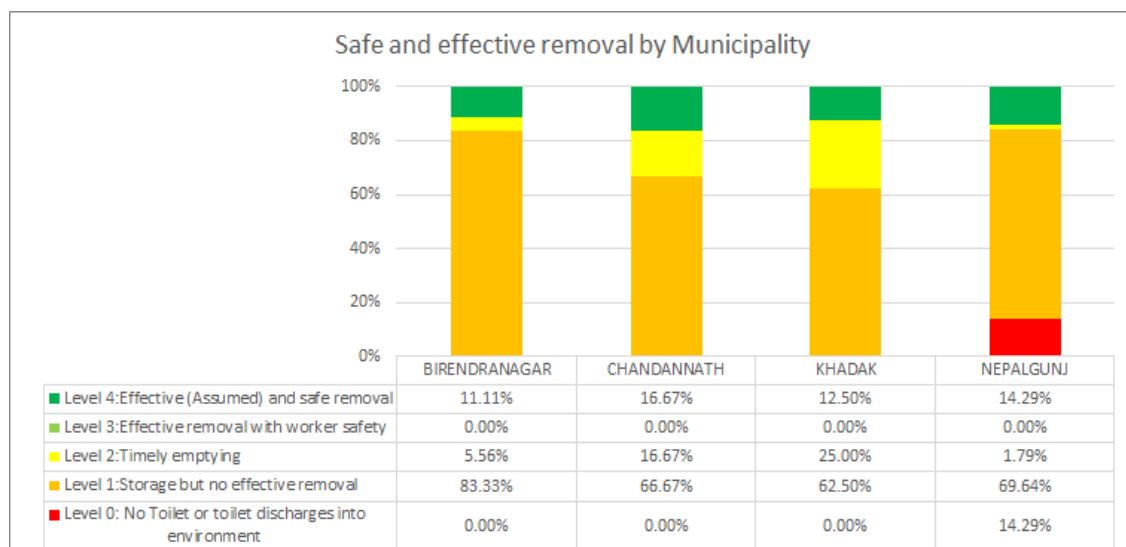


Figure 8: Safe conveyance by municipality

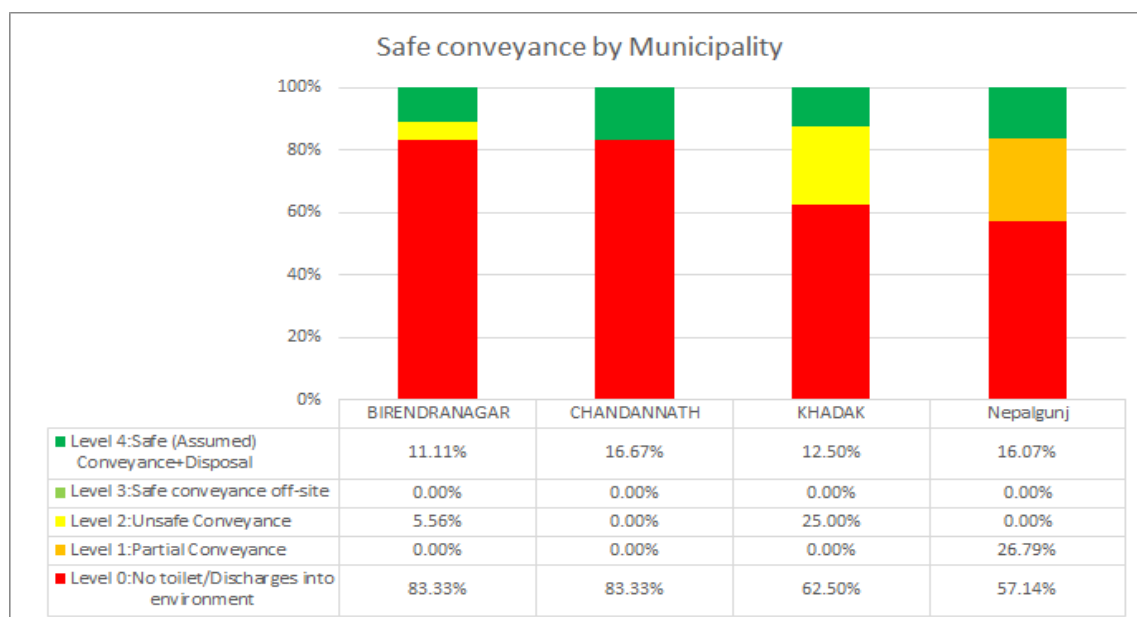
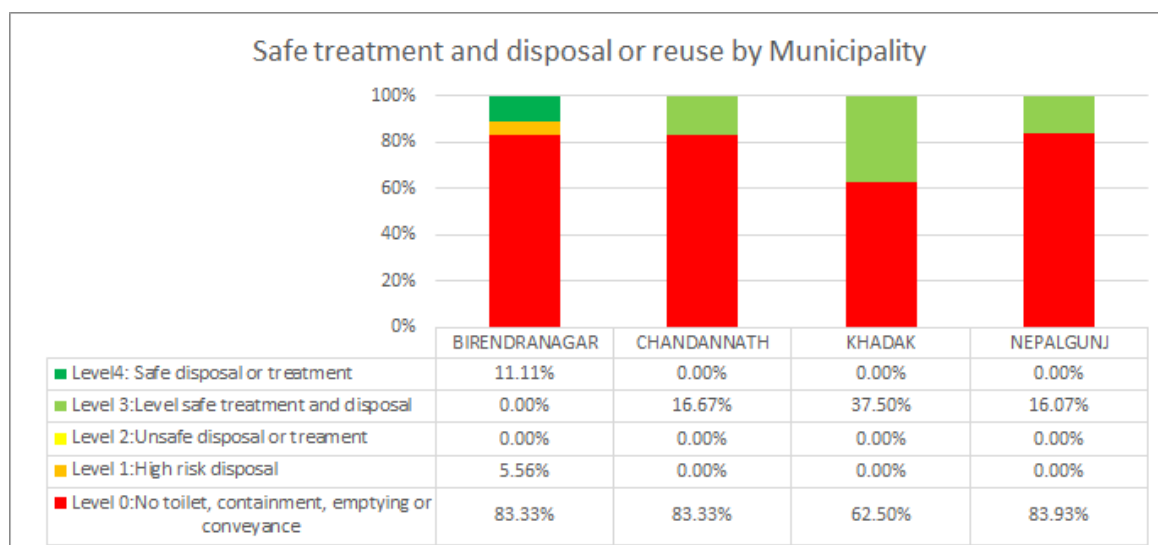


Figure 9: Safe treatment and disposal or reuse of faecal sludge by municipality



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