2024 -2028

WASH IN HEALTHCARE FACILITIES ROADMAP

NATIONAL PUBLIC HEALTH INSTITUTE OF LIBERIA (NPHIL)

Republic of Liberia

Rebpulic of Liberia

National Public Health Institute of Liberia and Ministry of Health

Funded by

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FOREWORD

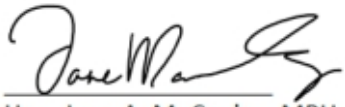
Water Sanitation and Hygiene (WASH) is essential for the delivery of quality care that improves health, dignity, welfare of clients/patients, and healthcare workers. It improves health outcomes during routine and public health emergencies. Access to better Infection Prevention Control (IPC) and WASH facilities is a top priority for dignified and safe maternal and newborn health service delivery which requires appropriate WASH services. WASH in healthcare facilities is fundamental for achieving national health goals and sustainable development goals (SDGs) to ensure healthy lives and promote well-being—SDG-3 and to ensure the availability and sustainable management of water and sanitation requires—SDG-6.

It is impossible to provide quality healthcare without improved WASH systems (safe and accessible water supply, appropriate waste disposal, gender-sensitive sanitation facilities, and hand hygiene facilities at points of care). Different levels of healthcare facilities have different WASH needs. For example, a facility that provides acute care, such as performing surgeries or treating highly infectious patients, requires more advanced WASH practices. Health care facilities that offer only primary care services still require good WASH systems but may not need to meet these stricter requirements.

Building a resilient healthcare system in Liberia requires ensuring that sustainable WASH infrastructures and standard practices that help to prevent the spread of diseases within the healthcare facility including the surrounding communities are instituted, monitored, tracked and regularly reported.

Giving the importance of WASH in the delivery of quality healthcare, the National Public Health Institute of Liberia (NPHIL) and the Ministry of Health (MOH) have developed this roadmap, which calls for collective efforts from all stakeholders in prioritizing WASH interventions in all healthcare facilities at different levels in Liberia.

NPHIL and MOH are hopeful that effective implementation of this roadmap will improve the Quality of Care (QoC) in healthcare facilities and contribute to health outcomes. This roadmap presents a strategy for achievement of improved WASH HCFs which is based on the Sustainable Development Goals 6.1 and 6.2 (universal access to safe water and to adequate sanitation and hygiene) in the context of Liberia.



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ABBREVIATIONS/ACRONYMS

AMR	Antimicrobial Resistance
CHT	County Health Team
COVID-19	Coronavirus disease
DEOH	Division of Environmental and Occupational Health
DHIS	District Health Information System
DHIS2	District Health Information Software
DHT	District Health Team
EPHS	Essential Package of Health Services
EPR	Epidemic Preparedness & Response
EVD	Ebola Virus Disease
HAIs	Healthcare-Associated Infections
HCFs	Healthcare Facilities
HCWM	Healthcare Waste Management
HCWs	Healthcare Workers
HHFA	Harmonized Healthcare Facility Assessment
HMIS	Health Management Information System
HR	Human Resources
ICT	Information Communication Technology
IHR	International Health Regulations
IPC	Infection Prevention Control
JEE	Joint External Evaluation
JMP	Joint Monitoring Program
KOICA	Korea International Cooperation Agency
LDHS	Liberia Demographic Health Survey
LMICs	Low-Middle-Income Countries
MEAL	Monitoring, Evaluation and Learning
MNH	Maternal and Newborn Health
MOH	Ministry of Health
NHO	National Health Observatory
NPHIL	National Public Health Institute of Liberia
QoC	Quality of Care
REDISSE	Regional Disease Surveillance Systems Enhancement
SDG	Sustainable Development Goal
SOPs	Standard Operating Procedures
UNICEF	United Nations Children Funds
USAID	United States Agency for International Development
US-CDC	United States Centers for Disease Prevention and Control
WASH	Water, Sanitation and Hygiene
WASH-FIT	Water, Sanitation, Hygiene Facility Improvement Tool
WHO	World Health Organization
WinHCFs	Water, Sanitation, and Hygiene in Healthcare Facilities

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1.0 SECTION 1: INTRODUCTION

1.1 BACKGROUND

Water Sanitation and Hygiene (WASH) in Healthcare Facilities (HCFs) is vital for providing high-quality healthcare, patient-centered care and ensuring patient and healthcare providers' safety. Proper WASH services are crucial to reduce the risk of healthcare-associated infections (HAIs), combat Antimicrobial Resistance (AMR), and prevent other diseases. WASH services build trust, boost service demand, enhance Quality of Care (QoC) uplift staff morale and performance, and reduce infant, neonatal, and maternal mortality rates. Functioning WASH services also play a vital role in maintaining an environment that upholds the dignity and human rights of all healthcare seekers, especially vulnerable groups like mothers, newborns, children, and care providers, both in routine healthcare delivery and during disease outbreaks. Given the importance of water availability and good hygiene during childbirth in particular, WASH is considered both a precondition and an entry point for good QoC.

Inadequate WASH services can compromise safety, dignity, and infection control, affecting both patients and healthcare providers. Data on the extent of the problem of unsafe care reveals that between 5.7 and 8.4 million people die each year in low- and middle-income countries (LMICs) from poor quality care[1]. The World Health Organization (WHO), UNICEF and other partners launched the Global Action Plan on WASH in HCFs in 2015 to address WASH challenges in healthcare settings. The 2018 World Health Assembly passed a resolution on the issue of WASH in HCFs. Subsequently, practical steps were outlined in the Joint Monitoring Program (JMP) and 2019 Sustainable Development Goals (SDGs) baseline report, with targets to achieve universal access to quality care.[2]

The Ebola Virus Disease outbreaks (2014-2016) and COVID-19 exposed critical gaps in basic IPC and WASH services, making them important aspects of health systems' resilience building in Liberia. The desk review which informed the development of this WinHCF Roadmap also revealed gaps in healthcare delivery, including inadequate waste management infrastructures, equipment, poor waste management, poor planning, and weak accountability and monitoring.

The NPHIL, MoH, stakeholders and partners have therefore developed the National Roadmap for WinHCFs to provide strategic direction for the implementation of prioritized WASH interventions in healthcare settings to improve healthcare quality and patient outcome. This Roadmap is aligned with the SDG Agenda 2030, National Health Policy (2022-2031), Health Sector Strategic Plan (2022-2026) and key national documents.

[1] WHO & UNICEF. 2020. Global progress report on WASH in HCFs: Fundamentals first, Geneva, WHO. WHO-UNICEF-2020-wash-in-hcf.pdf (theprif.org)
[2] WHO & UNICEF. 2019. WASH in HCFs: Global Baseline Report 2019, online at WASH in health care facilities: Global baseline report 2019 (who.int)

1.1.1 Brief Demographic Profile

Liberia is situated in West Africa, bordering Sierra Leone on the west, Guinea to the north and Ivory Coast to the east and the Atlantic Ocean to the South. It covers an area of 111,369 square kilometers and 43,000 square miles with an estimated total population of 4.94 4.5 million people (2019), with over half of the population living in urban areas[3]. It is a low-income country with an estimated Gross Domestics Product (GDP) per capita of USD 622 in 2019, with 8.8% declined from 2018.

According to the 2019 United Nations Development Program (UNDP) Human Development Index, Liberia ranked 176 out of 189 countries which is among the lowest in the world. Liberia's life expectancy at birth increased by 12.4 years from 51.7 years in 2000 to 64.1 years in 2019 (66.5-females and 63.5-males) and the adult literacy rate is 52% for women and 75% for men.[4] The Country is geographically divided into 15 counties and five health regions, with populations ranging from 74,317 in Grand Kru County to 1,434,974 in Montserrado County[5].

1.1.2 Overview of the Health Sector and System in Liberia

The 15 counties health structures which are further divided into 98 health districts. Liberia has a total of 926 health facilities of which 464 (50%) are public (National Health Observatory or NHO, 2021). The health facilities consist of 830 (89.6%) clinics, 60 (6.5%) health centers and 36 (3.9%) hospitals. Public clinics constitute 405 (48.8%) clinics while private clinics constitutes 425 (51.2%).

The Liberia Health delivery System has three-tiers (EPHS 2022) managed through a decentralized approach.

Primary Level: community health services and health clinics;
Secondary Level: health centers, district and county hospitals;
Tertiary Level: Regional and referral hospitals.

A total of 866 health facilities reported to the Liberia District Health Information Software (DHIS2) across the 15 counties during 2021. Public health facilities account for majority (55%), followed by private health facilities (45%). Fewer number of these facilities account for Hospitals (4.2%) and Health Centers (7%) and majority (88%) are clinics[6]. There is nearly equal distribution of HCFs between rural (49.6%) and Urban (50.4%). Though access to healthcare increased from 59% in 2008 to 71% in 2013 with the construction of new health facilities. The DHS also reported that 80 % of deliveries took place in a health facility, 84% of deliveries were assisted by a skilled

[3] National Health Observatory Report, 2021
4 UNESCO Institute for Statistics (http://uis.unesco.org/)
[5]Liberia National Population and Housing Census projected figure in 2020
[6] MOH.2022. Liberia Harmonized Health Facility Assessment (HHFA) Report

birth attendant. However, each county has a public hospital that serves as the county referral hospital and a single teaching and tertiary hospital, the John F. Kennedy Medical Cente r located in the nation's capital Monrovia. The proportion of counties with a hospital swelled from 80% (12 counties) in 2006 to 100% (15 counties) in 2017. All counties have a public referral hospital. These networks of public and private health facilities provide physical access to 71% (DHS 2013) of Liberia's 5.2 million people within 1hour walk or 5km to the nearest health facility. The population growth rate is 3.0%, and the majority is young, with 44% below 15 years old. These are people in remote communities that are hard-to-reach and are usually cut-off from urban communities during the raining season. Access to healthcare increased from 59%[7] in 2008 to 71% in 2013 with the construction of new health facilities.

The National Health Policy for 2022-2031 and the Health Sector Strategic Plan for 2022-2026 have nine investment areas (fit for purpose health workforce, sustainable community health and engagement, leadership and governance, health information research, and communication, quality and equitable health services, essential medicines, medical supplies and diagnostics, emergency preparedness and response, sustainable health financing, and health infrastructure and technology), and the Investment Plan for Building a Resilient Health System is a complement to those areas[8]. These investment areas allow the health sector to become responsive and proactive in dealing with future outbreaks.

Systems for WASH and IPC in health facilities are paramount in ensuring the safety and well-being of both healthcare workers and patients in Liberia. Moreover, the availability of WASH and IPC guideline and use in health facility is essential for healthcare workers as it offers a precise framework of protocols and best practices to reduce the risk of infection and the spread of diseases or illnesses by identifying, containing, and addressing potential health hazards.

1.1.3 The County Health System

The county health system is the administrative and management structure of the county that covers the health facilities, communities and districts within its geographical borders. It oversees the district health systems that are responsible for the implementation of programs and services at the community, district and health facility levels including the county hospitals. It will closely coordinate and collaborate with Tertiary hospital in its local but does not supervise it. A county health officer heads the county health system.

[7]WHO & UNICEF. 2020. Global progress report on WASH in HCFs: Fundamentals first, Geneva, WHO. WHO-UNICEF-2020-wash-in-hcf.pdf (theprif.org)

[8]MOH, Republic of Liberia. 2022. National Health Policy 2022-2031

1.1.4 Global and Regional Overview of WASH in Healthcare Facilities (WinHCFs)

Data on the problem of unsafe care reveals that between 5.7 and 8.4 million people die each year in LMICs from poor quality care[9]. Universal Health Coverage (UHC) and access to high quality, integrated "people centered" health services are essential to health for all and to human security[10]. However, efforts to accelerate UHC and quality of care will be undermined because fundamental WASH infrastructure and hygiene in health facilities are not in place.

Limited WASH services compromised the ability to provide safe and quality care, places both healthcare providers and those seeking care at high risk of infection-related morbidity and mortality and pose significant economic and social burden. Pregnant women who are giving birth in HCFs, and their newborns, are especially vulnerable to the consequences of poor WASH services. Among hospital-born babies in developing countries, HAIs are responsible for between 4% and 56% of all causes of death in the new-born period, 75% of which occur in South-East Asia and sub-Saharan Africa[11]. In order to address this major gap in services, in 2015, WHO, UNICEF and WASH partners across the world committed to the vision, that by 2030, every healthcare facility in every setting, should have safely managed, reliable WASH facilities and practices that meet staff and patients' needs. One output from this commitment has been the development of Water, Sanitation, Hygiene Facility Improvement Tool (WASH -FIT).

A WHO and UNICEF 2015 global review reported that nearly 40% of facilities lack water supplies, 19% are without sanitation and 35% do not have any hand hygiene materials[12]. UHC may be an empty promise without adequate attention to QoC including WASH services. Two important reports published by WHO and UNICEF have helped shaped the focus of WinHCFs: ''WASH in HCFs status in LMICs and way forward'' (2015) and ''the status of WASH in HCFs (2019)''. The latter led to the formulation of the World Health Assembly resolution (WHA72) on WASH in HCFs through which WHO and UNICEF are supporting countries to ensure that 100 % HCFs have basic WASH facilities by 2030, by applying eight practical steps[13]. The call recognizes the important role WASH plays in preventing infections and saving lives.

WHO and UNICEF have identified eight (8) practical steps countries can take to improve WASH in HCFs which may take place at the national sub-national level or both. The steps are: conduct a

[9] WHO & UNICEF. 2020. Global progress report on WASH in HCFs: Fundamentals first, Geneva, WHO. WHO-UNICEF-2020-wash in-hcf.pdf (theprif.org)

[10] World Bank, WHO, UNICEF, JICA and UHC 2030 International Health Partnership (2017). Tokyo Declaration on Universal Health Coverage. December 2017. http:// ww.who.int/universal_health_coverage/tokyodeclerаration-uhc.pdf?ua=1

[11] WHO. 2016. Health care without avoidable infections the critical role of infection prevention and control

12 WHO/UNICEF. 2015. Water, sanitation and hygiene in health care facilities: Urgent needs and action. Mee ting report. http://www.who.int/entity/water_ sanitation_health/facilities/wash-in-hcfgeneva. pdf?ua=

13 WHO & UNICEF. 2019. WASH in HCFs: Global Baseline Report 2019, online at WASH in health care facilities: Global baseline report 2019 (who.int)

situation analysis and assessment; set targets and define a national roadmap; establish national standards and accountability mechanisms; improve and maintain infrastructure; monitor progress and review data; develop the health workforce; engage communities; and conduct operational research and share learning. Key aspirational and milestones include: 60% of HCFs have basic WASH facilities by 2022; 80% by 2025; and 100% by 2030.

WASH-FIT is a risk-based approach for improving and sustaining WASH and HCWM infrastructure and services in healthcare facilities in Low- and Middle-Income Countries (LMICs). WASHFIT is an improvement tool to be used on a continuous and regular basis, to first and foremost help HCF staff and administrators prioritize and improve services, and second, to inform broader district, regional and national efforts to improve quality healthcare. It contains practical step-by- step directions and tools for assessing and improving services. It is adapted from the Water Safety Plan (WSP) approach recommended in the WHO Guidelines for drinking-water quality (WHO, 2011) and goes beyond water safety to include sanitation and hygiene, healthcare waste, management and staff empowerment.

During the 72nd World Health Assembly held in May 2019, the Resolution on WASH in health facilities was approved. It was highlighted that WinHCFs play a fundamental role in achieving universal health coverage, improving quality of care and prevent spread of antimicrobial resistance. WHO member states committed to developing national roadmaps, setting and monitoring targets, increasing investments in infrastructure and human resources and strengthening systems to improve and sustain WASH services in healthcare facilities. Like other member states, and in keeping with the WHA72 Resolutions solutions on WASH in HCFs, Liberia committed to increase investment in WASH services.

1.1.5 Overview of WinHCFs in Liberia

The Division of Environmental and Occupational Health (DEOH) actively collaborates with the counties, community and at healthcare facility levels to sensitize communities on solution of WASH or sanitation problems. The division also collaborates with other stakeholders and partners in addressing WASH issues; however, resources are limited and hence coverage is poor.

Water quality Control laboratory has been established by NPHIL and MoH operated by qualified personnel. Mobile/mini laboratories have been set up in all the 15 counties to support the National Water Quality Laboratory. However, testing of water wells is only done on demand due to inadequate support staff and logistics. Consequently, the impact of the intervention is limited; Hence, diarrheal diseases remain a health issue in the country.
Specific to WinHCF, only 10% of the 568 HCFs out of 866 HCFs assessed including 464 clinics, 68 health centers and 36 hospitals from April 2021-October 2022 by the HHFA in 2022, had all tracer items measured in the domain of standard precautions which cover: safe disposal of sharps, safe

final disposal of infectious wastes, appropriate storage of sharps wastes, appropriate storage of infectious wastes, disinfectant, disposable or auto-disposable syringes, environmental disinfectant, latex gloves, and guidelines on standard precautions, 52% of health facilities had essential basic amenities to provide health services such as availability of safe water, power, communication, etc., in 2022 as compared to 79% in 2018[14]. IPC is an essential aspect of basic healthcare, as well as specialized services. The safety of patients and health workers is a fundamental part of the health service delivery system. Therefore, all health facilities are expected to have in place the necessary standard precautions items which are listed in Figure 1.

The healthcare facilities listing of 866 functional facilities from the Liberia Master Facility Listing 2021 and reporting through the Liberia DHIS2 was used as the sampling frame for the HHFA[15]. The general service readiness index scores in the 15 Counties ranged from 45% in Sinoe County to 60% in Grand Gedeh County. The average general service readiness scores across counties provide an indication that the quality of health services is fairly good, with room for improvement. The capacity for health facilities in Liberia to provide quality health essential services is 51% currently compared to 56% in 2018, which implies that about one out of every two-health facilities is ready to provide quality healthcare services.

1.1.6 Highlights from the HHFA domain on standard precautions for infection prevention

- On average, 61% of the 568 health facilities assessed had standard precautions for infection prevention and control (IPC) while 55% have available guidelines for standard precautions compared to 68% and 61% in 2018, availability of IPC guidelines facility type varies with hospital accounting for 78%, Health center (65%) and Clinics (56%). HCFs in rural areas had greater proportion (75%) reporting the availability of guideline for IPC compared to health facilities in urban area (38%). The least number of facilities reported having IPC guidelines available were in the counties of Montserrado, Margibi, Nimba, and Lofa, with percentages of 30%, 58%, 63%, and 65%, respectively. Figure 1 presents percentages of health facilities with standard precautions for infection prevention based on the HHFA.
- 98% of health facilities have disposable or auto-disposable syringes available, while 96% have disinfectants compared to 97% and 91% in 2018.
- 72% of facilities have appropriate storage for sharp wastes compared to 86% in 2018
- 69% of the health facilities have latex gloves compared to 79% in 2018.
- 84% of the health facilities have proper disposal of non-sharp infectious waste, while 82% of had safe final disposal of sharps, and 14% with appropriate storage of non-sharp infectious waste.
- 65% of health facilities reported staff being trained in a certified IPC.

[14] MOH.2022. Liberia Harmonized Health Facility Assessment (HHFA) Report
[15] MOH.2022. Liberia Harmonized Health Facility Assessment (HHFA) Report

The service readiness index for standard precautions facilities (including IPC and WASH) is 61%, while 52% of health facilities have essential basic amenities (such as availability of clean and safe water) to provide health services, compared to 79% in 2018. The report further shows that clinics are less ready to provide basic WASH services. This indicates that QoC services in Liberia needs attention at the primary level, while maintaining high standards at the secondary level.

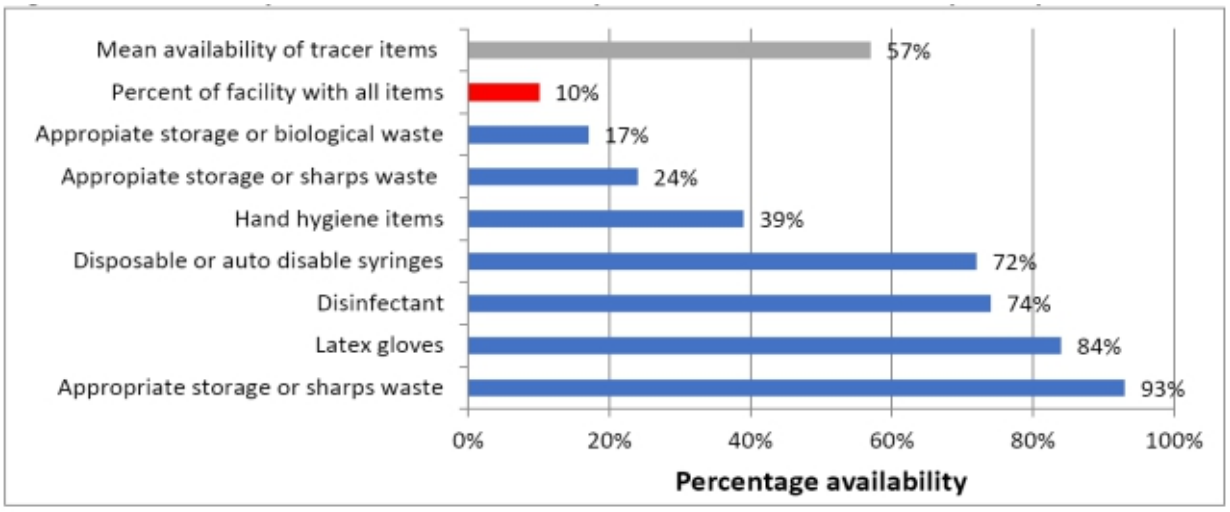

Figure 1: Standard precautions for infection prevention items available (n=568)

1.1.7 Key findings of rapid assessment of healthcare waste management infrastructures

The WinHCF situational analysis was complemented by a joint rapid assessment of healthcare waste management infrastructures in 103 out of approximately 926 HCFs across the 15 counties from between August to September 2023 using the Kobo Toolbox. The assessment was funded by the World Bank, and it was led by NPHIL and MOH Teams using combined methods including desk reviews of available technical reports documentations, on-site visits in HCFs, incinerators maintenance and operation, and medical waste management at the facility levels.

Data was analyzed using excel spreadsheet, and key findings show that: 39 out of the 60 incinerators present at the HCFs are De-Mont-Fort, while 31 are pyrolytics; two (2) of the pyrolytic incinerators are functional; 30 of the Demont-Fort incinerators are functional and nine (9) are non-functional. Twenty (20) HCFs have both incinerators (Pyrolytic and De- Mont-Fort). A total of Six (6) HCFs do not have any of the two incinerators. Detailed findings from the assessment are shown in ***Annex 2***.

SECTION 2.0: TECHNICAL WORK

2.1 Overview of Infection Prevention Control (IPC) Program in Liberia

The Ebola outbreak in West Africa severely affected the health system of Liberia, especially the health workforce which led the MoH to institute critical public health measures to mitigate the disease transmission. One of these measures was the establishment of the National IPC Program within Healthcare Quality Management Unit (HQMU). The HQMU was established in 2015 as a health system-strengthening strategy for preparedness and response mechanism and to address future outbreaks. National IPC Coordinator oversees the implementation of the IPC Program and works with the WASH and AMR Teams. The County Health Team (CHT) through the County Quality Management Team (CQMT) ensures that the National IPC guidelines are implemented within their respective HCFs, and that sufficient resources are made available (through the county's annual operational plan).

In July 2018, MoH with support from WHO, conducted baseline assessments for the national program in 32 out of 38 (84%) hospitals using Infection Prevention and Control Assessment Tool 2 (IPCAT-2) in Liberia. The overall IPCAT-2 score was 47.0 %, with gaps identified in all six core components assessed - HAI surveillance was at 0%, followed by IPC education and training at 20% and IPC guidelines at 47%. The National infection prevention and control assessment framework (IPCAF) score was intermediate at 451/800 (56%). Gaps were identified in all eight core components with variability across hospitals in Liberia; HAI surveillance, IPC programs, and guidelines had the most identified gaps.

2.1.1 Summary of IPC Assessment

National IPC Assessment was conducted on 21st September 2022 using the Infection Prevention and Control Assessment Tool (IPCAT-2) to inform development of the national IPC strategy for Liberia, and the result is summarized in the Table 1.

Table 1: National IPC program scores

Core Component	% Maximum Score
IPC Program	40%
IPC Guidelines	100%
Education and Training	50%
HAI Surveillance	0%
Multi-Modal Strategies	67%
Monitoring/ audits in IPC practices and feedback	20%
Average score	46%%

The finding of the IPC Program indicates the critical gaps in the IPC National Program, HAI surveillance, and monitoring/ audits in IPC practices and feedback. Identifying essential gaps and achievements at the country level helps in setting priorities. This also demonstrates the impact and cost-effectiveness of IPC interventions while offering guidance on the implementation of IPC interventions. The importance of integration and alignment of WASH interventions with IPC strategies are part of broader efforts to address AMR, health emergencies, and the quality and safety of health care delivery system. One of the strategic interventions in the National Healthcare Quality Strategy 2023-2027 is to institutionalize health promotion, disease prevention and preparedness in other sectors. The WASH Program connects and supports the IPC strategic interventions.

This National IPC Program has developed a strategy to mitigate the gaps identified through the different audits conducted, capitalizing on the experience and momentum generated in response to Ebola Virus Diseases outbreak and COVID-19 and the strengths identified. In addition, patient and healthcare workers (HCWs) safety have gained increased attention during this pandemic and will be addressed by strengthening occupational health services and improving IPC program implementation. The MoH, through the HQMU aim is to strengthen the IPC Program by involving all key stakeholders and addressing the Country's IPC needs.

The 2013–2016 Ebola virus disease outbreak in the country emphasized the importance of sanitation and regular hand washing. Poor compliance with IPC measures and poor water and sanitation infrastructures and hygiene practices within HCFs further contributed to the spread of the virus. Between August and December 2014, outpatient visits were 61% lower and antenatal care visits 40% lower than the same timeframe in 2013. The shortage of Personal Protective Equipment (PPE), soap and lack of compliance with basic IPC measures such as limited screening of patients, poor isolation facilities and limited training for healthcare workers (HCW) contributed to spread of the disease for which 372 health workers acquired Ebola virus disease, of whom 184 died. Improvement of quality health services in Liberia, focusing on the development and implementation of a roadmap to improve water and sanitation infrastructures and hygiene practices during and after the epidemic is essential.

2.1.2 SWOT Analysis on WinHCFs

Despite some level of progress being made in the health sector, the desk reviews further revealed a number of critical details including strengths and gaps that the healthcare delivery system faces ranging from inadequate prioritization, poor planning, inadequate financing, which impact WASH and IPC measures, which compromise the ability to provide quality routine healthcare and place healthcare providers and those seeking care at substantial risk of infection and loss of dignity in Liberia.

A SWOT analysis on WASH to determine what needs to be done and what can be done was conducted in 2023. The pragmatic SWOT analysis includes the following:

- Mapping capacities that are in place in HCFs;
- Undertaking a baseline WASH services;
- Identifying main challenges or barriers related to WASH services provision and; Identifying available human and financial resources.

This situational analysis will guide health care facilities in developing a stepwise WASH action plan that identifies what is already in place, what needs to be put in place over time (short, medium and long-term priorities); the human resources needed (including champions); the composition of a WASH Team and or Quality Management Team, and other core elements (including guidelines), based on the WASH-FIT and other related tool.

Access to WASH services in Liberia remains alarmingly poor, despite the recognition that water, sanitation, hygiene, waste disposal and environmental cleaning services play critical roles in the continuum of healthcare. It is important to note that with a potential increase in patient influx, the demand for water and sanitation services might be higher than the available resources; it is therefore essential to close the gap to avoid disruption of health services.

Below is a list of some critical gaps identified during the desk reviews and consultations:

- Weak enforcing mechanisms to ensure implementation of the WASH program.
- Weak coordination among stakeholders involved in WASH, including training among partners.
- No dedicated budget allocation for the WASH program at all levels.
- Poor implementation and adherence of HCWs to recommended WASH and IPC practices.
- WASH and IPC Guidelines are not disseminated to all HCFs.
- Inadequate SOPs and pocket guide/job aids (workplace reminders) at the facility level.
- Inadequate WASH and IPC monitoring and evaluation system.
- Absence of national WASH Roadmap, strategy and updated policy.
- Inadequate required supplies and infrastructures to ensure WASH and IPC guidelines implementation.
- Absence of comprehensive WASH and IPC programs monitoring indicators and tracking/monitoring.
- Unavailability of quality and appropriate technology supplies and infrastructures to ensure the standard implementations of WASH and IPC.
- Lack of commitment and integration of other sectors.
- Absence of healthcare associated infection (HAIs) and AMR's surveillance system for efficient tracking, monitoring and reporting.
- Lack of comprehensive WASH indicators and clear IPC, M&E framework.

- Poor monitoring and reporting of WASH services, auditing of WASH/IPC practices, coupled weak monitoring of water quality/testing.
- Lack of accountability for both reporting and performance improvement.
- The progress and impact of the national program are not monitored.
- Inadequate waste management and occupational health and safety equipment.
- Infrastructure/equipment WASH components, buildings, electricity, and road of healthcare in many health facilities are not convenient for fulfilling sanitation and IPC standards.
- Unavailability and high cost of some products of hygiene and sanitary materials on the local market.
- Poor WASH infrastructures due to many factors,
- Inadequate implementation of the National WASH Program at health care facilities.

The SWOT analysis would be greater achievements both for stakeholders and the community if effective feedback is done and proposed areas with significant impacts on water, sanitation and hygiene are implemented.

Table 2: SWOT Analysis on WASH Services in Healthcare Facilities

Area	Strength	Weaknesses	Opportunities	Threats
Water	Available water sources Regulation frameworks & global guidelines available Collaboration with key stakeholders in the WASH sector Some management of WASH infrastructure and services in place	Weak coordination for WASH activities Limited access to safe drinking water, water for washing hands, clothes, cooking, cleaning medical equipment, especially during the dry season Limited water treatment & water safety planning Infrastructure aging Poor implementation of WASH regulations and guidelines (including HCWM, IPC Guidelines) Weak adherence to SOPs among HCWs Weak data management, reporting and feedback	Partners and donors support to the WASH sector Existence of a legislative caucus for WASH in the Liberia legislature CSOs involved with WASH advocacy Establishment of the WASH Commission Multi-sectorial coordination platform Application of new waste management technology at 3 facilities (Authoclave)	Donors' dependency Lack of defined budgetary support to WASH in healthcare facilities Staff attrition Climate change and natural disaster Absence of a roadmap for WASH in HCFs Free healthcare services at public health facilities
Sanitation	Availability of IPC and WASH guidelines Availability of National guideline for sanitation Availability and implementation of the Public Health law Availability of sanitation facilities	Limited implementation of IPC /WASH/OHS Guidelines Limited monitoring and supervision Weak implementation of the Public Health Law Limited personnel trained in IPC and WASH Poor maintenance and operation of sanitation facilities Stock out of essential supplies for WASH and IPC (liquid soap, alcohol hand rub, paper towers, waste bags, etc). WASH facilities not-gender sensitive or friendly for physically challenged persons		
Hygiene	Available guidelines Availability of hand washing stations	Poor compliance of the guidelines Gap in communication Limited or inadequate financial and material resources for WASH		

		interventions Limited capacity building for manpower Inadequate sector financing for WASH services in HCFs Weak monitoring and enforcement of WinHCF guidelines and policies		
Waste Management	Availability of healthcare waste management guidelines Establishment of a centralized Healthcare Waste Management Treatment Plant in Disco Hill, Lower Margibi County	Poor implementation of the guidelines Lack of waste management plan in HCFs Limited number of trained personnel for waste management Limited infrastructures for waste management Poor compliance of waste management Inadequate supplies of waste management equipment Limited implementation of of WASH FIT Tool Lack of budgetary allotment for WASH operation and facilities maintenance Poor segregation of waste Lack of functional incinerators in most HCFs		Lack of centralized Healthcare waste management treatment plant in 14 counties

2.1.3 Process of developing the WinHCF Roadmap

The WASH in HCF Roadmap was developed under the leadership and coordination of the Division of Environmental and Occupational Health (DEOH) of NPHIL, in close consultation with national focal points and partners responsible for WASH and IPC; involving all levels of the health systems (that is, national, county, district and healthcare facilities which cover the communities). The process was informed by the Healthcare Waste Management Guidelines (2020-2025) and other relevant guidelines produced by NPHIL/MOH, WHO for WASH in HCFs, WHO WASH FIT Tool (2.0); global progress report on WASH in HCFs (2020), HHFA Report (2021 -2022), Safe Management of Waste from Healthcare Facilities (WHO, 2017), National IPC Strategic Plan (2022-26), National IPC guidelines (2018), Antimicrobial Stewardship (AMS) Guidelines and Toolkits (2021-2027) and other partners. The process was also informed by data from rapid assessment of the current

WASH activities in 103 HCFs, which highlighted strengths and gaps for planning and prioritization of areas across the value and supply chain of the WASH services, taking into consideration existing capacities and resources as well as potential risks and challenges.

The process brought together stakeholders from various sectors and disciplines involved in the implementation of WASH in HCFs with a vision and course of action to align investments and activities. The approach included the following specific activities:

- Establishment of a Core WASH Technical Team with an eight - days mandate to produce the first draft of the WASH Roadmap.
- Desk review, which included a review of available literatures, national guidelines and protocols on WASH in HCFs, including safe Healthcare Waste Management (i.e., NPHIL, MoH, WHO WASH Guidelines), WASH roadmaps from similar settings and contexts, and other relevant documents.
- Conducted rapid assessment which included mapping of 103 HCFs to provide the current status of these facilities.
- Convening the WASH Roadmap Technical Working Group (TWG) to solicit and collate inputs from national and sub national levels technical officers including Environmental Health Technicians (EHTs) and clinicians in various HCFs to produce a draf t roadmap. The TWG consisted of relevant experts, WASH specialists, academia and other stakeholders. All collated specific inputs from stakeholders meetings and the validation workshop were refined and incorporated to produce final version of the WASH in HCF Roadmap. Other members of the TWG, including those responsible for IPC, AMR, health emergencies, health work force such as County Health Officers (CHOs), Quality of Care and Occupational Health and Safety were consulted. The National WASH Commission and civil society together with other national experts, were also consulted.

2.1.4 Vision of the WASH in HCF Roadmap

The vision of this roadmap is to guide all HCFs in Liberia to have an improved, sustainable and functional WASH infrastructures and services.

2.1.5 Purpose

To provide a clear direction or vision on standardization in planning and budgeting, technical designing and construction, operation and maintenance with respect to QoC in different healthcare settings: emergencies, intensive care unit (ICU), burns unit, isolation centers etc. Availability and focused implementation of the National Roadmap would ensure effective monitoring and integration of WASH services in HCFs into national strategies thereby contributing to the achievement of the Sustainable Development Goals (SDGs) 3 and 6 targets in Liberia by 2030.

The Roadmap will support the SDGs 2030 Agenda, and in particular targets 3.1, 3.2 and 3.8 by raising the profile of this issue and development of national database for WASH in HCF to track progress in coverage over time. Very few data are currently available to estimate national coverage of WASH in HCF in a timely manner. This Roadmap provides a strategic direction in institutionalizing WASH in all HCFs as part of measures to improve quality routine healthcare services, during and after public health emergencies through robust monitoring and feedback system in Liberia. The WASH Roadmap will provide a framework to support harmonized monitoring of WASH interventions in HCFs in support of the 2030 Agenda in Liberia.

The WASH in HCF Roadmap will foster the implementation of the WASH FIT which:

- guides planning and implementation of WASH improvements as part of the wider quality improvement (qi) efforts, and to meet local, national and global standards;
- supports the implementation of IPC standard and transmission-based precautions according to national guidelines and standard operating procedures (SOPs)
- facilitates multi-sectoral actions by bringing together all those who share responsibilities for providing WASH services, including legislators and policymakers, district health officers, hospital administrators, water and sanitation engineers, climate and environmental specialists, and users.

2.1.6 Goal of the WASH in HCF Roadmap

To increase universal access to sustainable and adequate WASH service in healthcare facilities and to improve quality of healthcare delivery. Reduce healthcare associated infection, and safeguard the well-being of patients, healthcare workers and community at large.

2.1.7 Objectives

To increase universal access to sustainable and adequate WASH service in healthcare facilities and to improve quality of healthcare delivery. Reduce healthcare associated infection, and safeguard the well-being of patients, healthcare workers and community at large.

The objectives of the WASH in HCFs Roadmap include:

1. To ensure the effectiveness and efficiency of WASH services in all HCFs in Liberia by 2030
2. To identify and strengthen existing coordination mechanisms with all WASH actors
3. Define the process, roles, responsibilities, and timelines through leadership engagement and stakeholders by 2025
4. Assess the current WASH in healthcare facilities to identify strengths and gaps to inform planning and decision making at least annually.
5. Define key actions based on existing activities to strengthen WinHCF healthcare settings
6. Determine the cost and mobilize funding for all activities in the Roadmap.
7. Develop monitoring and evaluation (M & E) framework and database with core WASH

indicators for tracking and monitoring progress in WASH services in all HCFs by 2024.

8. To document best practices to increase awareness on WinHCFs programs for further learning, and knowledge-sharing through evidence generation for enhanced programing and targeted advocacy by 2025-2026.

2.1.8 Scope of the Roadmap

This roadmap is developed for use by all stakeholders in the health sector including those involved in architectural design, construction and rehabilitation works of HCFs, both private and public WASH infrastructures. It focuses on the promotion and maintenance of WASH services at all levels of HCFs, in line with the national standard and domains of WHO /UNICEF WASH Facility Improvement Tool (WASH-FIT) which comprises Water (quantity, quality , availability and access), Sanitation (Fecal waste, storm water and healthcare waste), Hygiene (Hand Hygiene and Environmental disinfection) and Management (Planning, budgeting, monitoring and reporting).

In alignment with the WHO and UNICEF published set of eight practical steps, this Roadmap improves and sustains WASH services and practices in healthcare facilities[16]. Step 4 of the eight practical steps emphasized the need to "Improve and maintain infrastructure" which includes use of the Water and Sanitation for Health Facility Improvement Tool (WASH FIT) and other risk-based improvement tools. It also complements Global Strategy for infection prevention and control[17]. The WASH Roadmap supports the attainment of the Liberia Vision 2030 and National Health Policy (2022-2031) which recognize WASH in healthcare facilities as key to the operationalization of the National Health Sector Strategic Plan (NHSSP) 2022-2026, Essential Package of Health Services (EPHS-II, 2022) and SDGs 6.1 and 6.2. The Roadmap is intended for use in healthcare settings where simple, robust and affordable solutions to infection control are required. They apply to a range of healthcare settings, from home-based care, district and central hospitals.

2.1.9 Target audience and areas of actions

The below table identifies the targeted audiences for the WASH Roadmap, cutting across international partners, national, sub-national and healthcare facility levels, including both the public and private sectors.

[16] WHO & UNICEF. 2020. Global progress report on WASH in HCFs: Fundamentals first, Geneva, WHO. WHO-UNICEF-2020-wash-in-hcf.pdf (theprif.org)

[17] WHO. 2023. Global strategy on infection prevention and control. Geneva: WHO. Licence: CC BY-NC-SA 3.0 IGO., Accessed 18/09/2023

Table 3:Targets audience and areas of actions

SN	Audience	Some core areas of responsibility
1	Leaders, including national health policy-makers (e.g., National Public Health Institute of Liberia (NPHIL), Ministry of Health and health regulators)	Resource mobilization, financing, monitoring progress nationally and at a subnational level, developing relevant policies, standards and enforcement.
2	Subnational or local level officials (e.g., district government officials and health offices, HCF managers)	Planning, monitoring and supervision, and undertaking budget allocations
3	HCF managers and other senior managers	Overseeing essential HCF functions, e.g., health service delivery
4	Quality Management Teams, WASH and IPC Focal Points, community WASH and health committees and technical staff including engineers, inspectors, plumbers, WASH FIT team leaders, HCWs	Undertaking assessments, identifying areas for improvement, and ensuring that improvements are acted upon & WASH FIT is sustained
5	WASH and health nongovernmental organizations, civil society, other partners supporting or leading WASH implementation, evaluation and program planning, educational institutions, professional and scientific organizations and media	Supporting facility staff to assess and identify areas for improvement, advocating for more funding for facilities and supporting government priorities
6	Environment and climate specialists, planners and advocates	Developing national and local sustainability plans, and meeting global and national climate and sustainability targets

Adapted from the WHO & UNICEF. 2022. WASH FIT: A practical guide for improving quality of care WASH in HCFs. Second edition. Accessed 16/09/2023.

2.1.10 Relevance/benefits of the Roadmap

This roadmap is a practical guide for improving water, sanitation and hygiene (WASH) services in healthcare facilities in order to ensure clean and safe facilities for patients and staff. Adequate WASH services are essential to minimize the risk of healthcare acquired infections but also for improving staff morale, patient dignity, uptake of services and can reduce the cost of healthcare infections.

Adapted from: WHO/UNICEF, 2015. Water, sanitation and hygiene in health care facilities: status in low- and middle-income countries and way forward.

Table 4: WASH in HCFS Roadmap linkages to existing policy, strategies and plans

International supporting documents	Linkage to in-country policies, strategies and plans
WHO Thirteenth General Program of Work 2019-2023 Safe management of waste from healthcare activities (2014) Guidelines for drinking-water quality (2019) Water safety planning manual (2023) Water safety planning for small community water supplies: step-by-step risk management guidance for drinking-water supplies in communities (WHO, 2012) WHO & UNICEF. 2022. Water and Sanitation for Health Facility Improvement Tool WHO WASH Strategy (2018-2025) WHO Global Strategy on Health, Environment and Climate Change (2019) Strategic Framework for WASH climate resilient Development (2022) WHO guidance for climate resilient and environmentally sustainable HCF (2020) Global Antimicrobial Resistance Surveillance System (2015) United Nations Development Assistant Framework (UNDAF 2017) AMS Programs in HCFs in low- and middle-income countries: A WHO practical toolkits (2019) International Health Regulation Joint External Evaluation for Liberia (2016) WHO. 2023. Global strategy on IPC	One Health Coordination Platform (2017) National Healthcare Quality Strategy (2023-2026) National IPC Guidelines (2018) National IPC Strategic Plan (2023-2027) National Action Plan for Health Security (2018) National HCWM Guidelines (2020) Guidelines on Antimicrobial Stewardship Programing Liberia (2022-2027) Investment Plan to Build a Resilient Health System (2015 – 2021) National Technical Guidelines for IDSR (2021) Public Health Law of Liberia revised (2019) National Health Policy (2022-31) and Health Strategic Plan (2022-26) National Community Health Policy (2022-31) and Guidelines (2022-26) MOH.2022. Liberia HHFA Report National Environmental and Occupational Health Policy (2010) and National Occupational Health and Safety Guidelines (2023)

2.1.11 Guiding principles and core values of this Roadmap

The principles and core values of this Roadmap is aligned with the National Action Plan on Health Security and guided by International Health Regulations Joint External Evaluation Tool (Third Edition)[18] and the country ownership and active partnership through:

Accountability and Transparency: Openness and willingness to promote and share information to facilitate rapid response. Support transparency, monitoring and people's participation as anchors of good governance for WinHCFs.

Community participation: Involvement of communities, healthcare facilities, civil society and the private sector.

[18] WHO. 2022. Joint external evaluation tool: International Health Regulations (2005), 3rd Edition. Geneva: WHO, License: CC BY-NC-SA 3.0 IGO. Accessed 19/09/2023 from Joint external evaluation tool: International Health Regulations (2005) - 3rd Edition (who.int)

- **Cooperative planning:** Ensure alignment with national and international plans and obligations. Leverage resources for WASH (public and private) financing for scaled-up, sustainable programs.
- **Equity in access to services**: Focusing on the more vulnerable population groups, and underserved areas, and ensuring that marginalized communities are not neglected.
- **Evidence-led and prioritization**: Considering emerging trends, risks and health innovations; and inter-country, regional, sub-regional and cross-border cooperation and resource availability to reinforce timely information sharing and coordinated interventions.
- **Flexibility and Sustainability:** This Roadmap will be receptive to new problem that emerge, situations, and changes in law, policy, and institutions. Therefore, the roadmap will be reviewed and updated periodically to accommodate changes to make the Plan viable.
- **Foster partnerships:** Ensure across all partners, the private sector, faith-based institutions, research and academic institutions
- **Gender and human rights principles:** Incorporation of gender equity or mainstreaming and human rights perspectives into WASH interventions and programs
- **Resilience:** Recognizing the varied staff, programs, disciplines, sectors and backgrounds with the aim of reaching a common goal
- **Shared responsibility:** WASH, a key component of Global Health Security Agenda (GHA) is a shared responsibility that cannot be achieved by a single actor or sector of government. Its success depends upon collaboration among the health, security, environment and agriculture sectors
- **Inter-sectoral collaboration: At** local; district, zonal and regional level between human health, animal health, and the environment using the One health approach. WASH as a contribution to education, health, nutrition and other outcomes, including WASH in institutions, gender and disability**.**
- **Enabling environment:** Strengthen capacity and systems to enable all actors to contribute effectively.

SECTION 3.0: INTERVENTIONS

3.1 Strategic Interventions for Improving WASH in Healthcare Facilities

The ultimate goal of the interventions is to ensure safely managed healthcare waste to reduce HAIs, prevent environmental pollution and address conditions and practices in HCFs to maintain health and prevent diseases through cleanliness. The roadmap shall be implemented by all relevant stakeholders and partners utilizing the strategies and core activities and adapted in Table 5, as WASH services are critical for quality patient care.

Table 5: Key approach/strategies for use in implementing the WinHCF Roadmap

No	Strategies	Activities
1	Building capacities of HCWs, including personnel managing WASH services in HCFs to achieve a culture of adherence to WASH/ IPC standards in all HCFs as well as continuous WASH education platforms.	Training, mentorship and coaching Awareness creation, sensitization Provision of WASH/ IPC supplies Updating of existing training modules Include WinHCF training modules in Continuous Professional Development (CPD) programs
2	Improve general and equitable access to safe and affordable drinking water for all HCFs.	Rehabilitate and construct hand pumps, and water systems on the premises of HCFs Conduct water quality monitoring (sampling and testing), sources and point of care for treatments to ensure universal access to adequate safe drinking water in HCFs. Label drinking water points to separate them from handwashing basins.
3	Improving waste management systems in all HCFs	Support implementation of measures for the safe collection, transportation, storage, treatment. And disposal of wastes Manage waste according to guidelines and SOPs to prevent environmental contaminations. Construct gender sensitive latrines/toilets for patients and staff at HCFs.
4	Strengthening partnership and collaboration for WASH services at all levels, leveraging existing resources.	Conduct coordination meetings at all levels Contracting private sectors for waste collection Training private partners on provision of WASH services
6	Advancing advocacy and engagement with stakeholders including political or policy makers at all levels for support, buy-in and ownership of WASH activities.	Advocacy for increase WASH budget Advocacy for WASH policy enforcement Engagement with Law Makers and other politicians
7	Building and maintaining a data base for WASH services in HCF at all levels	Revision of the current WASH indicators in the HMIS Update and improve WASH indicators Development and installation of WASH dashboard
8	Implementing Healthcare Waste Management and IPC guidelines in line with existing program at every HCF as required by NPHIL/MoH and WHO's	Production of HWMG Disseminate Healthcare Waste Management Guidelines in HCFs Conducting periodic spot-check

	minimum requirements	Provide handwashing facilities with soap and safe water and other disinfectants at entries, exits and patient care areas
9	Integrating implementation of WASH services into regular health sector planning, budgeting and programing.	Hold technical coordination meetings Program planning and budgeting for disease prevention, outbreaks and recovery.
10	Developing facility-based coasted action plans for addressing sustainable WASH services	Orientation of county and facilities staff on the WASH Roadmap Hold planning and budgeting meetings
11	Introducing new technologies and current innovations to improve WASH services, reduce cost and enhance service delivery	Training relevant staff Provision of required technologies Routine maintenance Adopt/adapt global framework for action to reach universal access to safely managed sanitation and other emerging tools Scaling up community WASH interventions
12	Food hygiene	Print and disseminate the keys to safer food preparation (if food is prepared in the facility) - keep clean, separate raw and cooked food, cook food thoroughly, keep food at safe temperature, use safe water and raw materials. Water for cooking shall comply with drinking water quality standard. Monitor to ensure that food preparation areas are located away from sanitary facilities.

3.1.2 Monitoring, Evaluation and Learning (MEAL)

Monitoring, Evaluation and Learning (MEAL) section is critical for ensuring that prioritized interventions in the WASH Roadmap are implemented according to plan and that targeted results are attained. The MEAL will use an integrated and health systems approach, leveraging existing structures and platforms. The WASH in HCFs Roadmap contains key int erventions, selected core indicators with baselines, and yearly targets to track performance over time. The aim of monitoring WASH services in HCFs is to measure the extent to which recommended standards by the Guidelines are complied with and identify gaps for necessary interventions. Effective monitoring, documentation and reporting will provide needed information to measure the Country's progress towards achieving the targets of SDGs 6.1 and 6.2 by 2030.

3.1.3 Monitoring indicators for water services in HCFs

Monitoring water services for HCFs should be based on the indicators provided by WHO/UNICEF as contained in Table 6.

Table 6: Monitoring Indicators for Water Services in HCFs[19]

Element	Monitoring definition
Improved	Improved water sources are those which, by nature of their design and construction, have the potential to deliver safe water. Improved sources include piped water, boreholes or tube wells, protected dug wells, protected springs, harvested rainwater, and packaged or delivered water.
Unimproved	Unimproved sources include unprotected dug wells or springs and surface water (e.g., lake, river, stream, pond, canals, irrigation ditches).
On premises	Water is accessed within buildings, or within the facility grounds.
Available	Water from the main water source is available always and on the day of the survey or assessment
Accessibility	The source of the water must be located within the premises and water should be available at all times; and at all points of care. The water dispensing points must be at heights preferrable 700mm and 800mmm and placed in locations accessible by people with disabilities[20].
Ownership	Facility owned or outsourced
Distribution system for piped water	Materials used in transmission and distribution of water such as pipes, fittings, storage and other devices must not leak hazardous agents into the water. PVC, uPVC, CPVC pipes in water systems are recommended. All corrosive materials used to manufacture pumps, spare parts, parts, joints, elbow connectors, etc shall be avoided in the procurement process from request to delivery.[21]

[19] Federal Ministry of Health, Nigeria. 2022. National Guidelines for Water, Sanitation and Hygiene (WASH) in Healthcare Facilities in Nigeria.

[20] Ministry of Health. Republic of Zambia. 2023. National standards for WASH in Healthcare Facilities.

[21]. Ministry of Health. Republic of Zambia. 2023. National standards for WASH in Healthcare Facilities.

Table 7: Monitoring Indication for Sanitation Services in HCFs

Monitoring sanitation services for HCFs shall be based on indicators provided by WHO/UNICEF as contained in the table below.

Element	Monitoring definition
Improved sanitation	Improved sanitation facilities are those designed to hygienically separate excreta from human contact. Improved facilities include: pour flush, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs
Unimproved	Unimproved facilities include pit latrines without a slab or platform hanging latrines, and bucket latrines. For the purpose of this document "toilets" is taken to mean any of these improved facilities
Usable	Toilets are available, functional, and private: **Available** to patients and staff (toilets are on premises; doors are unlocked, or a key is available at all times **Functional:** The toilet is not broken, the toilet hole is not blocked, there should be no cracks or leaks in the toilet structure and water is available for flush/pour-flush toilets), and **Private:** There are closable doors that can be locked from the inside and no large gaps or holes in the structure) on the day of the survey or assessment
Dedicated for staff	There are separate toilet facilities dedicated for patients and staff use.
Gender separated with menstrual hygiene facilities	At least one toilet is separated for use by women / girls and has a bin with a lid on it and/or water and soap available in a private space for washing. The recommended ratio of one toilet is 1/20 people and should be used as a planning guideline. Users include patient, staff and family care givers. Actual numbers required for inpatient settings will depend on a number of factors, including the average proportion of patients using bedpans instead of toilets.
Accessible for users with limited mobility	Toilets are considered accessible if they meet relevant national standards. In the absence of such standards, toilets should be accessible without stairs or steps, have ramps, handrails for support attached either to the floor or sidewalls, a door which is at least 80cm wide, and the door handle and seat within reach of people using wheelchairs or crutches/sticks.

Table 8: Monitoring Indication for Hand Hygiene Services in HCFs

Element	Monitoring definition
Hand hygiene facilities	A hand hygiene facility is any device that enables staff and patients to clean their hands effectively, such as a sink with tap, water tank with tap, bucket with tap or other similar device. Alcohol based hand rub dispensers are also hand hygiene facilities, whether they are fixed or portable
Functional	To be considered functional, hand hygiene facilities at points of care must have either alcohol-based hand rub, or soap and water. If alcohol-based hand rub is used, healthcare staff may carry a dispenser around between points of care. To be considered functional, hand hygiene facilities at toilets must have soap and water available within 5m of toilets. Alcohol-based rub is not considered adequate for hand hygiene at toilet as it does not remove fecal matters or materials from hands.
Points of care	Points of care are any location in the healthcare facility where care or treatment is delivered (e.g., consultation/examination rooms).
Within 5 meters of toilets	Hand hygiene facilities at toilets must be located not more than 5 meters from the toilets.

3.1.4 Monitoring systems for IPC and Hand Hygiene

On average, 41% of the facilities reported performing IPC monitoring using a specified framework in the past 6 months. Similarly, a little over 50% reported performing hand hygiene monitoring among health workers using a specified framework in the past 6 months. The IPC monitoring and hand hygiene increases with facility type from hospital to clinic, with hospitals (64%) and clinics (78%) respectively. Rural facilities are more committed to practicing IPC and hand hygiene compared to their urban counterpart, 50% and 61% of public facilities are practicing these measures.

The healthcare system is characterized by a marked discrepancy in the availability and quality of WASH services between private and public facilities and between urban and rural areas. Also, the tertiary and general hospitals tend to be overcrowded because the primary healthcare centers are functioning below expectation.

This National Roadmap for WASH in HCFs is aligned with the eight (8) strategic action areas and opportunities for investments to improve WASH in Liberia, and to increase supply to match demand, by aligning multi-sectoral stakeholders and investments. This roadmap clearly lays out a path for maximizing opportunities (i.e., review or development of new policies for WASH in HCF, National Development Plans for WASH, Plan for WASH during emergency preparedness and response period, etc.). It provides opportunities for Civil Society Organizations (CSOs), all WASH partners, donors and Government to collectively advance the WASH in HCF agenda in Liberia where WASH services provision in HCFs has remained inadequate for many years.

Table 9: Monitoring, Evaluation and Learning (MEAL) Matrix

Goals	Desired outcomes	Indicator	Baseline	Target							Freq	Responsible	Data Source
				2024	2025	2026	2027	2028	2029	2030			
Ensure access to clean and reliable water sources within HCFs	Improved Water Supply	% of HCFs with improved water source	77%	80%	84%	89%	94%	96%	98%	100%	Monthly	WASH Team, HF Management	HHFA
		% of HCFs with water quality test meeting national standards	77%	80%	84%	89%	94%	96%	98%	100%	Monthly		CHT report
Integrate WASH & energy services into health programing, financing and monitoring	Improve service delivery	% of HCFs with reliable power source	61%	63%	66%	71%	81%	91%	96%	100%	Monthly	Infrastructure Unit MOH	HHFA, EHTs, Annual Report, LDHS
		Percentage of HFs with sanitation	80%	82%	86%	90%	94%	96%	98%	100%	Monthly	HF Management	HHFA, EHTs Annual Report, LDHS
Upgrade and maintain sanitary facilities within healthcare facilities.	Enhanced Sanitation Facilities	% of HCFs with functional latrines	74%	76%	78%	80%	90%	96%	98%	100%	Monthly	HF Management	HHFA, EHT Annual Report, LDHS
		% of HCFs with handwashing stations with soap and water.	68.93%	74%	79%	84%	92%	96%	98%	100%	Monthly	HF Management	HHFA, EHTs Annual Report, LDHS
		% of HCFs with dedicated latrine for staff	52.42%	55%	59%	70%	80%	93%	96%	100%	Monthly	HF Management	WASH FIT Assessment
		% of HCFs with latrines accessible for the physically challenged	8.74%	21%	36%	51%	66%	86%	94%	100%	Monthly	HF Management	WASH FIT Assessment

Establish proper hand washing stations.	Promotion of hygiene and sanitation	% of HCFs with functional hand washing stations	75%	77%	82%	87%	92%	97%	98%	100%	Monthly	HF Management	WASH FIT Assessment
		% of HCWs trained in hand hygiene									Monthly	HF Mgt, QMT	WASH FIT Assessment
		% of patients educated on proper hygiene practices									Monthly	WASH Team (NPHIL, MOH & partners)	HCF Annual Report
		% of community WASH awareness campaigns planned and conducted									Monthly	WASH Team, Health Promotion Unit	Surveys, campaign report
Waste management systems established in HCFs	Minimize the risk of HAIs and improve staff morale	% of HCFs segregating waste properly (point of generation)	81.55%	84%	87%	91%	95%	97%	98%	100%	Monthly	HF Mgt, QMT, DEOH	WASH FIT Assessment, waste disposal records
		% of staff trained in HCWM Guidelines	41%	45%	55%	65%	80%	95%	97%	100%	Monthly	DEOH/NPHIL, MOH and partners	WASH FIT Assessment, training record
		% of HCFs with IPC guidelines	58%	63%	70%	80%	85%	95%	97%	100%	Monthly	HQMU/MOH	WASH FIT Assessment
		% HCFs with waste Mgt guidelines	31%	41%	60%	75%	90%	95%	97%	100%	Monthly	WASH Team (NPHIL, MOH & partners)	WASH FIT, IPC Annual Report, HQMU
		% of HCFs with incinerator	59%	62%	67%	77%	87%	95%	97%	100%	Monthly	CHTs, HF Management	WASH FIT Assessment, EHTs
		% of HCFs with sharps or ash pit	58.25%	61%	68%	78%	88%	96%	98%	100%	Monthly	HF Management	WASH FIT Assessment
Establish a research agenda on WinHCF related concepts	Impact of WASH interventions to inform scale up	# of research articles conducted on WinHCFs	0	1	1	1	1	1	1	1	Annually	DEOH/NPHIL, MOH and partners	NPHIL/MOH Websites
		# of platforms symposia held on WinHCFs	0	1	1	1	1	1	1	1			

3.1.5 Coordination and Monitoring Procedure

To achieve the intended purpose of this roadmap, standard monitoring processes are hereby provided for and shall be put in place at various levels of the health system (National and Subnational Levels).

a) NPHIL/MOH shall coordinate, and in collaboration with other relevant stakeholders, partners, NGOs, develop standard monitoring tools in line with the NPHIL/MOH standards for monitoring WASH services in HCFs and deploy at the National and County WASH Departments/units as well as WASH Units in the HCFs.
b) Environmental Health Technicians (EHTs) and WASH Officers at the subnational level shall use the monitoring tools for periodic monitoring and assessment of the HCFs under the CHT, DHT and HCFs directive.
c) WASH/Quality Management Team shall be the Focal Point at the facility level and will conduct monitoring of WASH services at the facilities on routine basis.
d) NPHIL/ MoH in collaboration with other relevant stakeholders, shall use the Standard tool to conduct periodic monitoring of WASH services in the HCFs across the country.

3.1.6 Reporting Procedure

Reporting shall be a bottom-up format with verification mechanism in place as followed:

a) The WASH Team or EHT in the HCFs shall report to the head of the facility, through the Quality Management Team in line with the WASH and National IPC Policies.
b) Follow existing reporting platform for healthcare services at district, county and national levels, and the head of the facility shall provide periodic report as required.
c) The County M&E Department/Unit shall verify the report and forward such report to NPHIL/MOH.
d) NPHIL/MOH shall verify the report sent to National Health Management Information System (HMIS) and any other relevant information platform and stakeholders.
e) There shall be quarterly and annual reports of WASH services in HCFs from generated data.

3.1.7 Water Sanitation and Hygiene Facility Improvement Tool (WASH FIT)

Several tools are used for addressing different components of healthcare service delivery, to bridge the gap between environmental health, IPC and healthcare waste management at facility level. In 2018, WHO and UNICEF jointly published the Water and Sanitation for Health Facility Improvement Tool (WASH FIT) as a practical guide for improving quality of care through

WinHCF[22]. It is designed as an improvement tool for use on a continuous and regular basis to help HCF staff and administrators prioritize and improve services, and to inform the district, regional and national efforts to improve quality health care.

WASH FIT guides multi-sectoral teams through a continuous cycle of assessing and prioritizing risks, defining and implementing improvements, and continually monitoring progress. WASH FIT provides a systematic approach to improving WASH through a health lens. According to WHO, since it was first developed in 2015, WASH-FIT as a tool, has been piloted in over 20 countries across the world. In Eastern and Southern Africa, Comoros, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Uganda and the United Republic of Tanzania have all piloted WASH FIT to some extent in healthcare facilities, making gains at facility level while learning implementation lessons along the way for further scale-up.

WASH FIT implementation involves a five-step process beginning with the enabling environment and culminating in the desired health-based objectives, thus emphasizing the role of the enabling environment as a starting point for sustainable WinHCFs. (See Figure 2). A strong enabling environment at national, sub-national and facility levels is critical to improving QoC and internal IPC measures in HCFs and to promoting the overall well-being of patients and care givers within a given context. The WASH FIT shall be used to support implementation, monitoring and evaluation of the Roadmap.

[22] WHO&UNICEF (2018), WASH FIT www.who.int/water_sanitation_health/publications/water-and-sanitation-for-health-facility-improvement-tool/en/

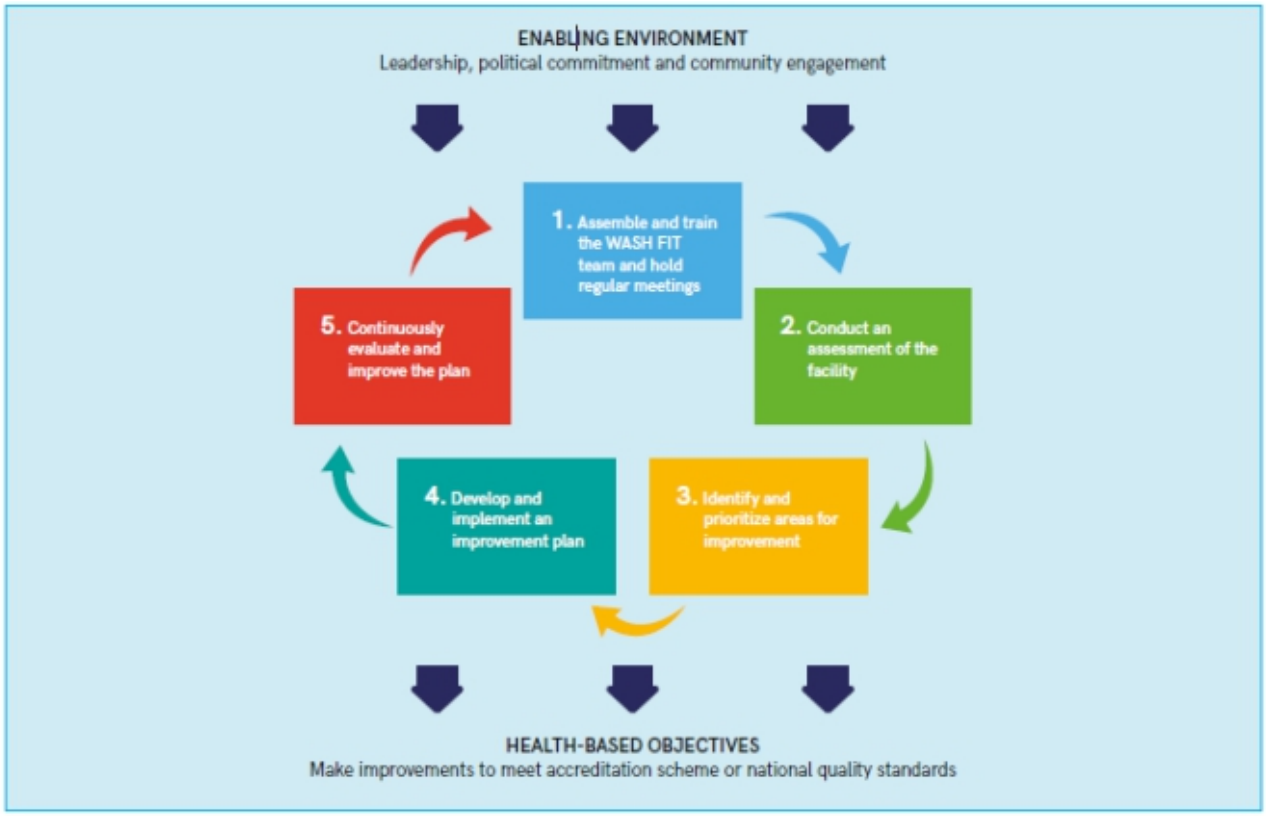

Figure 2: WASH FIT five step process for improving facility-level WASH Services

3.1.8 Steps to achieve universal access to quality care- WinHCFs

Given the level of progress achieved so far in the sector, each country faced different challenges requiring contextualized action to scale up in-country programing for WinHCF. In April 2019, with the release of the Global Baseline Report on WinHCFs, the WHO/UNICEF JMP on Water and Sanitation also published a companion guidance document entitled: Practical Steps to Achieve Universal Access to QoC WHO/UNICEF Practical Steps shall be adopted as the guiding framework for scaling up WinHCFs programing in Liberia, particularly the WASH Roadmap implementation. The country shall conduct periodic comprehensive assessments of where it stands in relation to the steps, and to identify areas for short, medium and long-term action. There is a need for robust monitoring and report of coverage data for WinHCFs.

The objectives of the Practical Steps are:

a) To present eight practical steps that member states can take at the national and sub-national level to improve WASH in healthcare facilities

b) To summarize the global response to the United Nations Secretary-General's Call to Action.

Practical Steps represent a 'back-to-basics' approach to addressing WinHCFs include:

1) Situation analysis and assessment
2) Set targets and define roadmap
3) Establish national standards and accountability mechanisms
4) Improve infrastructure and maintenance
5) Monitor and review data
6) Develop health workforce
7) Engage communities
8) Conduct operational research and share learning (Figure 3).

Figure 3: WHO/UNICEF practical steps to achieve universal access to quality care

SECTION 4.0: OPERATIONAL PLAN

4.1 Operational Plan for Improving WinHCFs

The WinHCF budget summary according to the WHO/UNICFE Eight Practical Steps for scaling up WinHCFs programing is **US$14,086,447** for the 5 years (2024 - 2028), as clearly detailed in Table 10. The percentage distribution of the budget per year for the strategic intervention areas is as follow: Year 1 (15%), Year 2 (30%), Year 3 (23%), Year 4 (22%) and Year 5 (10%), respectively.

The operational plan with the specific activities to be implemented including timelines and budget lines can be found in **Table 11**.

Table 10: Budget Summary for the WinHCF Roadmap (2024 - 2028)

No	Strategic interventions	2024	2025	2026	2027	2028	Total amount
1	Conduct Situation Analysis and Assessment	15,874	32,030.50	24,454	22,879.50	10,582	105,820
2	Set National Targets and Define Roadmap	73,012.50	146,025	111,952.50	107,085	48,675	486,750
3	Establish national Standard and Accountability Mechanisms	54,168.75	108,337.50	83,058.75	79,447.50	36,112.50	361,125
4	Improve Infrastructure and Maintenance	1,727,206.5	3,454,413	2,648,383	2,533,236	1,151,471	11,514,709.50
5	Monitor And Review Data to Measure Progress	3,825	7,650	5,865	5,610	2,550	25,500
6	Develop health workforce	221,940	443,880	340,308	325,512	147,960	1,479,600
7	Strengthening Community Engagement in Planning and Implementing WinHCF Services	13,590	27,180	20,838	19,932	9,060	90,600
8	Conduct Operational Research and Share Learning	3,351.30	6,702.60	5,138.66	4,915.24	2,234.20	22,342
	Grand Total (USD)	$2,112,968	$4,226,219	$3,239,998	$3,098,617	1,408,645	$14,086,447

Table 11: Strategic Priorities, Key Activities and Budget for the WinHCF Roadmap

Strategic interventions	Specific activities	Timeline (2024-2028)	Qty	Unit	/cost (US$)	Freq	Amount (US$)	Comments	Responsible
1.0 Conduct situational analysis or assessment of enabling environments for WinHCF. This informs priority actions and mobilizing resources for WASH policies, governance structures, institutional arrangements and stakeholders	1.1.Establish a robust national (technical working group or TWG) for WinHCF	Mar 2024 - Mar 2028	12	Meeting	$60	5	$3,600	Functioning WinCHF TWG	NPHIL, MOH, WHO, UNICEF, USAID, WaterAid, MFDP, US-CDC, Jhpiego, Break Through Action (BTA), Public Works, CSO
	1.2 Develop/adapt/review tool for WinHCF assessment and reporting harmonized data on WinHCF	Mar 2024 - Mar 2028	12	Person	$20	4	$960	4 Technical working sessions	NPHIL, MOH & partners
	1.3 Revitalize governance structures and institutional arrangements for WinHCF (national and local levels)	Mar 2024 - Dec 2028	20	Person	$200	2	$8,000	Fuel, vehicles, DSA, snacks	NPHIL, MOH, WHO, UNICEF, USAID, WaterAid, MFDP, US-CDC, Jhpiego, BTA, Public Work, CSO
	1.4 Conduct annual progress assessment of WASH coverage and compliance measures in HCFs	Oct 2024 - Oct 2028	15	Person	$280	5	$21,000	DSA, fuel, vehicles	NPHIL, MOH and partners
	1.5 Conduct data analysis, report writing and dissemination	Nov 2024 - Nov 2028	12	Person	$25	5	$1,500	Snacks for data analysts, data entry; review	
	1.6 Organize quarterly coordination meetings of WinHCF stakeholders leveraging existing structures (national and subnational) to strengthen public- private partnership and collaboration in WASH services	Mar 2024 - Nov 2028	24	Meeting	$180	5	$21,600	(4quarterly meetings/ countyX5yrs, including national). Snacks	NPHIL, MOH WHO, UNICEF, USAID, WaterAid, MFDP, US-CDC, Jhpiego, BTA,

	1.7 Hold annual stakeholders' review meetings to assess WinHCF activities progress and resource mobilization	Nov 2025 - Nov 2028	1	Workshop	$12,290	4	$49,160	DSA, transportation, catering;1/yrx4yrs	Public Works, CSOs
	Sub-total						$105,820.00		
2.0 Set national targets and define Roadmap using an inter-sectoral team to define priority interventions, responsibilities & budgets for improving WinHCF	2.1 Institutionalize/integrate WinHCF activities in health sector planning (strategic plans, NHQS, IPC guidelines etc) to ensure that national level strategies translate into district and facility levels; processes and activities with clearly defined priorities, targets and budget	Jan 2024 - Nov 2028	15	Planning meeting	$250	5	$18,750	Annually at county level & quarterly at national level (DSA, fuel, vehicle)	UNICEF, USAID, WHO, WaterAid, MOH, NPHIL, MFDP, US -CDC, Jhpiego, BTA, Public Works, MOA, EPA, relevant sectors
	2.2 Develop and implement facility-based action plans for sustainable WinHCF services using tools such as the WASH FIT and other innovative tools	Jan 2024 - Oct 2028	468	HCFs	$200	5	$468,000	50% (468) of 936 HCFs are public	HCFs, NPHIL, MOH and partners
	Sub-total						$486,750		
3.0 Establish National Standard and Accountability Mechanism to ensure that all HCFs meet national standards; and that responsible	3.1 Print and disseminate WinCHF Roadmap and healthcare management guidelines	Jan 2024 - Oct 2024	1000	Copies	$25	1	$25,000	Ensure easy access to relevant guidelines, tools and reference materials	MOH, NPHIL and partners
	3.2 Contracting private sectors for waste collection	Jan 2024 - Oct 2028	120	Contract	$50	50	$300,000		
	3.3 Conduct stakeholder mapping, analysis	Jan 2024 - Oct 2028	15				$0.00	No cost	
	3.4 Revise/ review current HCF monitoring WASH checklists and tools	Jan 2024 - Oct 2028	12	Meeting	$25	6	$1,800	12 persons x 5 meetings	MOH, NPHIL, MFPD, UNICEF,

agencies, ministries are accountable for their actions. This will provide the basis for design, costing and implementing WASH services	3.5 Orient target community structures (e.g., HFDC, County Health Board) on accountability mechanisms (scorecard process; client satisfaction surveys and or exit interviews)	Jun 2024 - Oct 2028	75	Orientation/ training	$75	5	$28,125	At least 80% of HCF catchment communities in 5 yrs.	USAID, Jhpiego, BTA, WHO, WaterAid
	3.6 Adapt and implement standards on infrastructure requirements and resources for sustainable WASH services (regulation, licensing, accreditation, community scorecards, and feedback mechanisms).	Jun 2024 - Oct 2028	12	Meeting	$25	4	$1,200	Collaborate with health regulatory bodies and professional boards	MOH, NPHIL, MFDP, US-CDC, Jhpiego, BTA, Ministry of Public Works, EPA, relevant sectors and other partners
	3.7. Conduct advocacies and stakeholders' engagement including political or policy makers at all levels for ownership and support for WASH in HCFs and enforcement of WASH policy with politicians	Mar 2024 - Nov 2028	10	Advocacy/ engagement	$250	2	$5,000	Five advocacy and five engagement sessions	UNICEF, USAID, WHO, WaterAid, MOH, NPHIL, MFDP, US-CDC, Jhpiego, BTA, Public Works, EPA, relevant sectors
	Sub-total						$361,125.00		
4.0 Improve and maintain WASH infrastructure to meet national standards and	4.1 Procure and distribute supplies including waste segregation materials) to promote proper waste management systems at HCFs	Jan 2024 & Oct 2028	750	Supplies	$200	5	$750,000	Safety boxes, Wheelbarrows, biohazard bags, rainboots, rainboots, color coded waste bins (Red, Yellow, Black, Yellow)	MOH, NPHIL, MFPD, UNICEF, USAID, WHO, Jhpiego, BTA, WaterAid, MOH, NPHIL, MFDP, US-CDC, Public

be accompanied by policies, resources and strategies to keep infrastructures and services operational over time.	4.2 Rehabilitate and construct ash pits, placenta pit and incinerator	July 2024 & Oct 2028	608	Con/ Rehab.	$15,000	1	$9,120,000	Targeted HCF is 65%	Works, MOA, EPA, relevant sectors and other partners
	4.3 Assign dedicated staff for waste management	Jan 2024 & Oct 2028	750	Staffing	$75	1	$56,250		
	4.4 Provision of a solarize (climate resilient) water systems to improve WASH services, reduce cost and enhance service delivery	Jan 2024 & Oct 2028	25	Solarize water systems	$35,000	1	$875,000	Reduce cost improve quality healthcare delivery	
	4.5 Provision of required technologies (incinerator, auto clave)	Jan 2024 & Oct 2028	100	Incinerator & autoclave	$1,500	1	$150,000	Improve waste management	
	4.6 Conduct routine maintenance of solar and other WASH infrastructures to ensure sufficient, functioning WASH services are available.	Jan 2024 & Oct 2028	750	Maintenance	$150	5	$562,500	Improve and sustain functionality of assets	
	4.7. Develop operations and maintenance plan for assets and infrastructure from a life-cycle cost analysis perspective for WinHCF	Mar 2025 & Oct 2025	12	Meeting	$20	4	$960	12 persons x 4 meetings	
	4.8 Mobilize resource to improve WASH services and infrastructure maintenance	Mar 2025 & Oct 2026	12	Plan	$0.00	4	$0.00	No cost	
	Sub-total						$11,514,710.00		
5.0 Building and maintaining a data base for WASH services in HCFs at all Levels	5.1 Review and update WASH indicators and targets in the HMIS	Oct 2024 - Mar 2025	3	working sessions	$1,500	3	$13,500	Track and monitor progress for WinHCF services	MOH, NPHIL, MFPD, private sector and partners
	5.2 Develop and maintain national database and dashboard in coordination with relevant departments/Units (DHIS2 Team) to store and access WinHCF related data for decision making.	Mar 2024 - Jun 2024	1	dashboard	$200	60	$12,000	National and subnational levels data use for decision making	

	5.3 Print and disseminate 936 copies of ledgers with WinHCF service indicators	Sept -Nov 2024	750	Copies	$25	1	$18,750		
	5.4 Hold a day orientation meeting with HCFs' staff on WinHCF indicator monitoring and reporting	Sept -Nov 2024	750	Meeting	$25	2	$37,500		
	5.5 Conduct routine data quality verification on WASH data within the counties	Mar 2024 - Nov 2028	750	Supervision				Monthly at county level & quarterly at national level; DSA, fuel, vehicle	
	Sub-total						$25,500.00		
6.0 Develop health workforce capacity including personnel managing WASH services to achieve a culture of adherence in WASH, IPC standards	6.1 Provide orientation trainings to county and HCFs' staff on the WASH Roadmap, Healthcare Waste Management Guidelines, climate change resilient water safety planning (WSP)	Jan 2024 - Mar 2027	1,296	Persons	$95	5	$615,600	**926 HCFs** Clinics: 830x3p=2,490 HC 60x8p=480 Hospitals 36x25=900)	MOH,NPHIL and partners
	6.2 Conduct monitoring, supervision and mentorship of HCWs to reinforce WASH/IPC practices	Feb 2024 - Feb 2028	750	Monitoring & Supervision	$168	5	$630,000	15 Counties (3MSS/yrx5yrs	
	6.3 Create awareness and education on AMR, WASH and IPC during pre-and in-service as part of professional development for workers (doctors, nurses, midwives, PAs, cleaners, etc)	Jan 2024 - June 2028	20	Awareness	$300	15	$90,000	World Toilet Day, Global Hygiene/ Washing Day, Patient Safety Day, AMR/IPC Awareness Week, etc	MOH,NPHIL, Professional or regulatory bodies, academia partners
	6.4 Collaborate with professional and regulatory bodies for inclusion of WASH, IPC and AMR in HCWs trainings and enforcement of standards at facility accreditation or certification	Jun 2024 - Mar 2025	20	Persons	$30	10	$6,000	Participate and support review and or implementation of training curricula	MOH,WHO, NPHIL,UNICEF, US-CDC, Jhpiego, BTA, WaterAid, GIZ, USAID, LBNM, LMDC, health regulatory and professional boards, Academia

	6.5 Train private partners on provision of WASH services	July 2024 - July 2026	120	Training	$100	4	$48,000	Promote quality WASH services in all HCFs	MOH,NPHIL, private sector and partners
	6.6 Training relevant staff on new technologies and innovations to improve WASH services, reduce cost and enhance service delivery	July 2024 - Jun 2027	750	Training	$120	1	$90,000.00		
	Sub-total						$1,479,600		
7.0 Strengthen community engagement in planning and implementing WASH services and management to ensure that HCFs provide level of care that citizens deserve and expect	7.1 Raise awareness on the benefits of WASH and IPC for HCWs and patient safety	Jan 2024 - June 2028	20	Awareness	$180	15	$54,000		MOH,NPHIL, WHO, UNICEF, US-CDC, Jhpiego, Break Through Action, WaterAid, GIZ, USAID
	7.2 Conduct exit interviews to gauge client feedback on WinHCF service satisfaction levels.	Mar 2024 - July 2028	15	Interviews	$20	5	$1,500	One interview/ county/year	MOH, NPHIL & partners
	7.3 Review local governance structures for WASH at HCFs, DHTs and CHTs for orientation on improving WinHCF services	Mar 2024 - July 2028	75	Review/assessment	$168	1	$12,600	Target: At least 80% of districts and HCFs	MOH, NPHIL, IRB,WHO, Jhpiego, Break Through Action, UNICEF, USAID, Water Aid, WB, GF, MFDP, Private Sector
	7.4 Collaborate with communities including influential groups (Youth Groups, Women Groups, etc) to identify and address gaps related to WinHCF to create demand for services	Mar 2024 - July 2028	75	FGD/ engagement meeting	$100	2	$15,000	Target: At least 80% of health districts	
	7.5 Create and encourage suggestion boxes to collect/analysis clients' perception on WinCHF services	Mar 2024 - July 2028	750	Suggestion boxes	$10	1	$7,500	Target: At least 80% of HCFs	
	Sub-total						$90,600.00		

8.0 Conduct Operational Research and Share Learning	8.1 Assess impact of WASH activities or interventions on patient care and health outcomes to scale up and inform policies to sustainable improvement of WASH services	Nov 2025 - Nov 2028	5	Research	$1,000	1	$5,000	Document and share best practices, promote buy-in and investment	MOH, NPHIL, Academia [UL/IRB) & partners
	8.2 Test/pilot healthcare quality improvement models (e.g., Plan, Do, Study and Act (PDSA), Lean, Six Sigma in WinHCF activities and scaling-up, WASH FIT Tool	Jun 2024 - Sept 2028	15	QI projects	$250	1	$3,750	One QI project/county	MOH,NPHIL, HCF Leadership, partners
	8.3 Create a repository for operational research conducted within the Country related to WASH	Mar 2024 - Dec 2028	15	Research report	$0.00	5	$0.00	Work with HMIS and partners to establish repository for WASH research	MOH, NHPHIL, LISGIS, partners
	8.4 Develop a WinHCF research agenda	Mar 2024 - Dec 2026	5	Research agenda	$0.00	5	$0.00	Ascertain factors influencing WASH services	MOH, NPHIL, Academia [UL/IRB) & partners
	8.5 Provide support to research institutions to develop protocol	Mar 2024 - Dec 2028	1	Research protocol	$500	4	$2,000	Institutional Ethics Review (IRB)	
	8.6 Train 8 national staff, 15 EHTs for 3 days either in Bong or Grand Bassa County to conduct research	Mar 2025 and Mar 2028	23	Persons	$168	3	$11,592	Training will be held in Monrovia	
	Sub-total						$22,342		
	GRAND TOTAL						$14,086,447		

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ANNEXES

Annex 1: Glossary

Antimicrobial resistance (AMR): AMR occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines, making infections harder to treat and increasing the risk of disease spread, severe illness and death. As a result, the medicines become ineffective and infections persist in the body, increasing the risk of spread to others. Antimicrobials - including antibiotics, antivirals, antifungals and antiparasitics are medicines used to prevent and treat infections in humans, animals and plants. Microorganisms that develop antimicrobial resistance are sometimes referred to as "superbugs"[23].
Care workers: Care workers provide direct personal care services in the home, in health care and residential settings, assisting with routine tasks of daily life, and performing a variety of other tasks of a simple and routine nature
Exposure: The process of being exposed to something that is around; exposure can affect people in a number of different ways.
Hand hygiene: A general term referring to any action of hand cleansing, that is, the action of performing hand hygiene for the purpose of physically or mechanically removing dirt, organic material, and/or microorganisms.
Health care-associated infection (HAIs) (also referred to as "nosocomial" or "hospital-acquired infection"): An infection acquired by a patient during the process of care (including preventive, diagnostic and treatment services) in a hospital or other health care facility, which was not present or incubating at the time of admission; HAIs can also appear after discharge. HAIs are also acquired by health workers during health care delivery and by visitors.
Health facility*:* A place where health services (i.e., not limited to medical or clinical services) are provided with the aim of contributing to improved health or to the diagnosis, treatment and rehabilitation of sick people. It refers to all formally recognized facilities that provide health care, including primary (health posts and clinics), secondary, and tertiary (district or national hospitals), public and private (including faith-run), and temporary structures designed for emergency contexts (e.g., cholera treatment centers)24.
Health system*:* All organizations, institutions and resources that produce actions whose primary purpose is to improve health.
Health workers*:* All people engaged in work actions whose primary intent is to improve health. This includes health service providers, such as doctors, nurses, midwives, public health professionals, laboratory technicians, health technicians, medical and non-medical technicians, personal care workers, community health workers, healers and practitioners of traditional medicine. The term also includes health management and support workers such as cleaners, drivers, hospital administrators, district health managers and social workers, and other occupational groups in health-related activities as defined by the International Standard Classification of Occupations (ISCO-08). Health workers: Health workers are all people primarily engaged in actions with the primary intent of enhancing health
H**ygiene**: the practice of principles that maintain health, e.g., cleanliness. *IDLH (immediately dangerous to life or health)*: description of an environment that is very hazardous due to a high concentration of toxic chemicals or insufficient oxygen, or both.

[23] WHO. 2022. Global report on infection prevention and control. Geneva: (https://apps.who.int/iris/handle/10665/354489, accessed 18/09/2023

24 United Nations Children's Fund. 2019. WASH in Health Care Facilities UNICEF Scoping Study in Eastern and Southern Africa. Accessed 19/09/2023 from UNICEF-WASH-in-Health-Care-Facilities-2019.pdf

Incident: an unsafe occurrence arising out of or in the course of work where no personal injury is caused, or where personal injury requires only first-aid treatment.

Infection prevention and control (IPC) minimum requirements: IPC standards that should be in place at both national and health facility level to provide minimum protection and safety to patients, health care workers and visitors, based on the WHO core components for IPC programs. The existence of these requirements constitutes the initial starting point for building additional critical elements of the IPC core components according to a stepwise approach based on assessments of the local situation.

Infection prevention and control*:* A practical, evidence-based approach that prevents patients and health workers from being harmed by avoidable infection and as a result of antimicrobial resistance.

IPC committee: A multidisciplinary group with interested stakeholders across the facility, which interacts with and advises the IPC team. For example, the IPC committee could include senior facility leadership, senior clinical staff, leads of other relevant complementary areas (such as biosafety, pharmacy, microbiology or clinical laboratory), waste management, WASH services and quality and safety, where in place

IPC focal point: IPC professional (according to the above definition) appointed to be in charge of IPC at the national, sub-national or facility/organization level

IPC professional: Healthcare professional (medical doctor, nurse, or other health-related professional) who has completed a certified postgraduate IPC training course, or a nationally or internationally recognized postgraduate course on IPC, or another core discipline including IPC as a core part of the curriculum as well as IPC practical and clinical training

People- centered care: An approach to care that consciously adopts the perspectives of individuals, care givers, families and communities as participants in, and beneficiaries of trusted health systems organized around the comprehensive needs of people rather than individual diseases, and respects social preferences. People-centered care also requires that patients have the education and support they need to make decisions and participate in their own care and that care givers are able to attain maximal function within a supportive working environment.

Point of care: The place where three elements come together: the patient, the HCWs and care or treatment involving contact with the patient or his/her surroundings (within the patient zone).

Primary health care facilities: Facilities that provide outpatient services, family planning, antenatal care, maternal, newborn and child health services (including delivery), for example, health center, health posts/small district hospitals

Universal health coverage: Universal health coverage means that all individuals and communities receive the health services they need without suffering financial hardship. It includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care across the life course.

WASH in healthcare facilities: The provision of water, sanitation, healthcare waste, hygiene and environmental cleaning infrastructure, and services across all parts of a facility. The role WASH plays in ensuring quality of care, strengthening IPC, enhancing maternal, child and adolescent health and minimizing AMR cannot be overemphasized. Research shows that the benefits extend far beyond the point of care to boosting staff morale and the performance of health care workers, minimizing the national healthcare burden and providing a platform to promote improved hygiene practices within the community.

Annex 2: Summary of findings from desk review on WASH infrastructure and equipment

Items/services	% of facilities that have	% of facilities that don not have
Established WASH FIT Team	56 (54.4%)	47 (45.6%)
Received WASH FIT Training	42 (40.8%)	61 (59.2%)
Trained newly hired or employed staff in WASH	70 (68.0%)	33 (32.0%)
Available functional toilets	76 (73.8%)	27 (26.2%)
Available incinerators	60 (58.3%)	33 (32.18%)
Autoclave for waste treatment	0 (0.0%)	103 (100%)
Ash Pit	60 (58.3%)	43 (41.7%)
Functional placenta	78 (75.7%)	25 (24.3)
Biohazard bags	52 (50.48%)	51 (49.5%)
Functional hand washing stations	77 (74.8%)	26 (25.2%)
Alcohol base hand rub available	65 (63.1%)	38 (36.9%)
Water and soap available for hand washing	71 (68.9%)	32 (31.1%)
Pipe born water	19 (18.4%)	84 (81.6%)
Separate toilet for male and female staff	53 (52.4%)	49 (47.6%)
Separate toilet for male and female patients	15 (14.6%)	88 (85.4%)
Toilet that are disabled friendly	9 (87.3)	94 (91.26%)
Available records for cleaning toilet regularly	70 (68.0%)	33 (32.0%)
IPC supplies	43 (41.7%)	58 56.31%)
Practice three bin systems for waste segregation	84 (81.6%)	19 18.4%)
Waste treatment or disposal site 100 feet away from water sources	67 (65.0%)	37 (35.9%
Safety boxes available	80 (77.7%)	22 (21.4)
Spray cans	14 (13.6%)	89 (86.4%)
Specialized person for water treatment	30 (29.1%)	73 (70.9%)
Waste management plan;	0 (0.0%)	103 (100%)
Staff are trained on the usage of PPE	58 (56.3%)	45 (43.7%)
Necessary PPEs available	47 (45.6%)	56 (44.4%)
Energy available either at the MCH, the entire facility or only in the EPI	64 (62.1%)	39 (62.1%)
Treat water quarterly	71.84% (74)	28.15% (29)

Annex 3: Water Supply (Required Minimum Standards)

- **Water Supply:** Water for drinking, personal hygiene and medical activities is safely treated, reliable and sufficient. Ensure on-site water collection points that are functional with water safety plans.

- **Water quantity:** There should be 5-400 liters/person/day[25] depending on the level of healthcare facility and nature of healthcare service delivery. Underground, surface and elevated water storage tanks including piping should be constructed and installed based on the guidelines issued by NPHIL/MoH to allow sufficient water supply in healthcare facilities.

25 WHO & UNICEF (2015). Water, sanitation and hygiene in healthcare facilities: Status in low-and middle income countries and way forward.

Annex 4: Water Sources

Types of Water Sources

Healthcare facilities may access water through any of the following three main sources found in Liberia:

a) **Ground water**: These are sources whereby water is obtained from beneath the surface in rock and soil, and accumulates underground in aquifers e.g., Boreholes, Wells etc.
b) Surface water: These are sources whereby water is collected on the surface of the earth. They include lakes, rivers, dams, ponds or wetlands
c) **Rainwater**: This is an alternative source that can ensure availability of water in HCFs through Rainwater
d) **Harvesting System** (RHS), especially in areas with water scarcity or intermittently water supply.

Basic consideration in selecting appropriate water sources for HCFs

a) Water Quantity
b) Water Quality
c) Protection of Water Sources
d) Accessibility
e) Affordability Feasibility
f) Operation and Maintenance

Recommended Water Supply Methods/Sources for Healthcare Facilities:

Piped supply inside the building
Piped supply outside the building
Tube well / Borehole
Protected dug well
Protected spring
Rainwater harvesting

Accessibility and Availability

The source of the water must be located within the premises, from an improved source and water should always be made available.

Protection of water sources

All water sources shall be adequately protected from pollution and contamination especially water from, tube well and borehole, protected dug well and rainwater.[26]

Consideration Construction of Water sources

Healthcare Facilities should take into consideration the following during construction on water sources to ensure they are protected.[27]

[26] https://www.who.int/water_sanitation_health/dwq/sheet4.pdf
[27] https://www.water.wa.gov.au/__data/assets/pdf_file/0009/4014/104027.pdf

Tube well/Borehole

Tube wells should be located/sited in a suitable environment free from any form of waste disposal.

a) Toilets should be sited downhill of tube wells and boreholes to avoid possible contamination.
b) The top of the tube well/borehole should be completely covered by making a concrete plinth to prevent any surface or spilt water from entering the well.
c) A hand-pump should be securely fixed on a concrete plinth for tube wells.
d) The plinth should be surrounded by a sloppy apron and a drainage channel built to allow spilt water to flow away from the wellhead to a soak-away for tube wells.
e) There should be regular inspection and monitoring for water quality sampling and testing to ensure safe and adequate water supply.

Dug wells

a) Dug wells should be sited in a suitable environment free from any form of waste disposal.
b) Toilets should be sited downhill of ground water such as hand dug well, borehole, etc. to avoid possible contamination.
c) New septic tanks or other sewage treatment methods to be installed at least 50 feet from a well.
d) Wells should be covered with a hard surface
e) Wells should be lined with concrete rings to avoid washed sediment into the body of the water.

Rainwater

Water from this source can be collected using the Rainwater Harvesting System (RHS).The RHS collects water from house's roof into a storage tank (surface or underground).

The following are recommendation for protection of rainwater from RHS;

a. **Roofing:** Roofs suitable for the collection of water in HCFs is the one which does not interfere with the quality and safety of the collected water. E.g., coated aluminum, stainless steel, aluminum sheet and concrete or terra cotta tiles.
b. **Drainage:** it is important to bring together all downpipes into one pipe for entry into the tank.

c) Storage Tank Installation:

i. In most cases a flat, shallow tank is preferable.
ii. The tank should have an inflow and an overflow. The overflow needs to go to a soak-away or surface water drain.
iii. Back filling around tank should be done with concrete or compactable gravel, depending on the tank.

d) Installing the pump: A pump needs to be installed in the tank to send the water to the property.

e) Internal plumbing: The internal pipe-work must be a dedicated feed to the toilets and washing areas.

f) Filtration: Leaf filters are mostly built into the tanks and filters are also installed on the pump to stop particles coming through.

g) Main backup system: To ensure there is an uninterrupted water supply to the building.

Figure 4: Diagram for different method to collect rainwater, adapted from Federal Ministry of Health, Nigeria. 2022. National Guidelines for Water, Sanitation and Hygiene in HCFs in Nigeria

Operation, Maintenance and Protection of Water Supply System

An effective and efficient Operation and Maintenance management system should be put in place to ensure constant availability of water in the Healthcare Facility.

Water Storage

a) Water should be stored in containers made of material that will not compromise the quality of the stored water.
b) Storage container must be of adequate capacity to meet the water demand for the HCF
c) Regular maintenance of the water storage facilities such as cleaning, disinfection etc. should be maintained.
d) Routine cleaning, disinfection and policies should be implemented and periodically reviewed.

Major Consideration in the Distribution of Water in Healthcare Facilities

a) The following aspects should be taken into consideration while installing water points in Healthcare Facilities:
   i. Suitable drinking-water points should be available for staff, patient and care givers at all times.
   ii. Where piped water is available, it should be regulated to critical points within the Healthcare Facility, e.g. wards, isolation areas, emergency units, consultation rooms, laboratory, laundry, toilets, sterilization units and operating theatres etc. Alternatively,

running water should be available at all critical points using other methods e.g., buckets with taps (Veronica buckets).

iii. Water should be made available at all times at hand washing points.

Annex 5: Sanitation in Healthcare Facilities

Sanitary management of excreta in HCF is important to ensure fecal pathogens do not contaminate the environment. The following minimum criteria should be considered when planning for sanitation management in HCFs:

i. Safety

Sanitation facilities including toilets should be safe to avoid the spread of harmful agents like microbes, physical and chemical contaminants, or disease harboring vectors / vermin to prevent the transmission of infectious diseases. Measures should be put in place to control flies and breeding ground for mosquitoes, furthermore, floors should be dry to avoid falling.

ii. Reliability

- Toilets should be functional, clean and in good state of use at all times with provision of consumable (water, toilet-paper, soap, etc.)

iii. Accessibility

- Toilets must be accessible to intended users, located not more than 30 meters from users and should always be opened with the lock inside. Also accessible to Nurses station in case of falls or other emergencies.

iv. User convenience

- There should be separate toilets for women, men, young children, and people who are with disability or physically challenged
- Toilet for women/girls should have a mirror on the internal part of the door to enable effective changing of used menstrual material and self-cleaning bin with a lid for the disposal of used material and water and soap for menstrual hygiene and washing.
- Mobility aids should be provided such as ramps, support grips and rails for people with visual impairments.
- Signage indicating the location /direction of toilets as well as different male and female toilets should always be in place.
- Provision of a bin with a lid on it with water and soap available in a private space for washing.
- Lockable doors for privacy and clear pathways with lighting for proper accessibility.
- Dedicated separate toilet facilities for staff use.

Design and construction of sanitation facilities

General consideration for healthcare settings should fall in any of the following categories:

- Pour flush
- Water closet
- Ventilated improved pit (VIP) toilets

Maintenance and hygiene of pour flush / water closet toilets

For maintenance and hygiene purposes the following practices are recommended:

a) Users of flush toilets should be reminded through a visibly displayed poster that they must flush and leave the toilet clean after use.
b) Flush toilets should be cleaned using standard cleaning materials such as toilet brushes, detergents and approved disinfectants.
c) There should be a cleaning schedule that shows the frequency and duration along with a supervisor's verification column for monitoring and supervisory purposes.
d) Periodic checks on effective functioning of the flush toilets in the HCF should be carried out to identify any mechanical faults especially the blockage of pipes and faulty cistern mechanism.
e) Since in many cases, flush toilets are located within the buildings, rectification of faults should be done immediately to avoid flies within the premises and eliminate odor from blocked toilets.

Maintenance and hygiene of Ventilated Improved Pit (VIP) Toilets

a) Users of VIP toilets should be reminded to always cover the pits to avoid flies' infestation
b) Anal cleansing using water is recommended, however, where not available, anal cleansing materials such as toilet paper should be provided along with a bin for sanitary disposal.
c) Users of VIP toilets should be reminded to sweep out spills after anal cleansing with water.
d) VIP toilets should be cleaned using standard cleaning materials such as detergents and approved disinfectants.
e) There should be a cleaning schedule that shows the frequency and duration along with a supervisor's verification column for monitoring and supervisory purposes.
f) Periodic checks on effective functioning of the vent and lid should be carried out to identify and rectify faults.
g) As many VIP toilets are located outside the building, adequate lighting and clearing of pathways to prevent exposure of users to hazards.

Toilet facility for people with special needs

An accessible toilet should be designed to accommodate people who are physically challenged. Designs of sanitation facilities should essentially take into account the following categories of physical challenges:

a) People with visual impairments should be provided with mobility aids such as ramps, support grips and rails including proper lighting of the pathways.
b) The design of a toilet should include wider doors, and special grips or foldable seats for people who are non-ambulatory and on wheelchairs, crutches etc.
c) Bed pans should be provided to people that are bedridden.

Operations and Maintenance of Sanitation Facilities

Sanitation infrastructure and facilities requires careful organization and actions to ensure smooth operations and provision of maintenance services in case of structural or functional changes. Routine and periodic maintenance services are prerequisite for sustaining sanitation in healthcare facilities. The followings are recommended for proper sanitation:

a) There should be a clear description of staff roles on management of sanitation infrastructure and services. Depending on the facility level, there should be a committee with assigned responsibilities in relation to maintaining sanitation on infrastructure.
b) Toilets should be cleaned whenever they are dirty, and at least twice a day with a disinfectant used on all exposed surfaces and a brush to remove visible soiling. Strong disinfectants are unnecessary and should not be used in large quantities.
c) There should be weekly and daily cleaning schedule that specify when sanitation facilities should be cleaned and supplied with cleaning and hygiene agents. Cleaning schedule should identify persons or groups responsible for undertaking the cleaning tasks and their supervisors. The schedules should be displayed for easy access and be shared among responsible officers.
d) Orientation, training, and education of users is an important aspect of operations that must be implemented. Orientation materials, personnel and time should be dedicated to help newcomers, regular visitors, and staff members.
e) Operation and maintenance plan must be put in place to cover for the running and repairs of sanitation on infrastructure and services. This should include regular or incidental repairs and scheduled maintenance activities.
f) Fecal sludge should be emptied when the septic tank is ¾ full.
g) Cleaning and maintenance inspection activities should be documented and reported in weekly meetings.

Annex 6: Hygiene in Health Care Facilities

Practicing hand hygiene is a simple yet effective way to prevent infection. Cleaning hands can prevent the spread of germs, including those that are resistant to antibiotics and are becoming difficult, if not impossible, to treat. Hand hygiene is the single most effective means of reducing the risk of HAIs. Failure to observe hand hygiene at the critical times increases the risk of spreading HAIs.

Effective hand hygiene in healthcare facilities has been the cornerstone of IPC. Healthcare workers, patients and visitors to HCFs can spread pathogens through their hands. It is important that HCFs provide adequate information and enlightenment on hand hygiene practices in addition to provision of hand-washing facilities including soap and water at all designated locations within the HCF used by health care workers, patients as well as visitors.

Awareness on transmission of pathogens by hands

Disease can spread when:

a) Eyes, nose and mouth are touched with unclean hands.
b) Foods are prepared or eaten with unclean hands.
c) Hands are contaminated with respiratory droplets through coughing or sneezing and spread through handshakes, touching of surfaces and objects

General consideration for hand hygiene for non-healthcare workers in HCFs

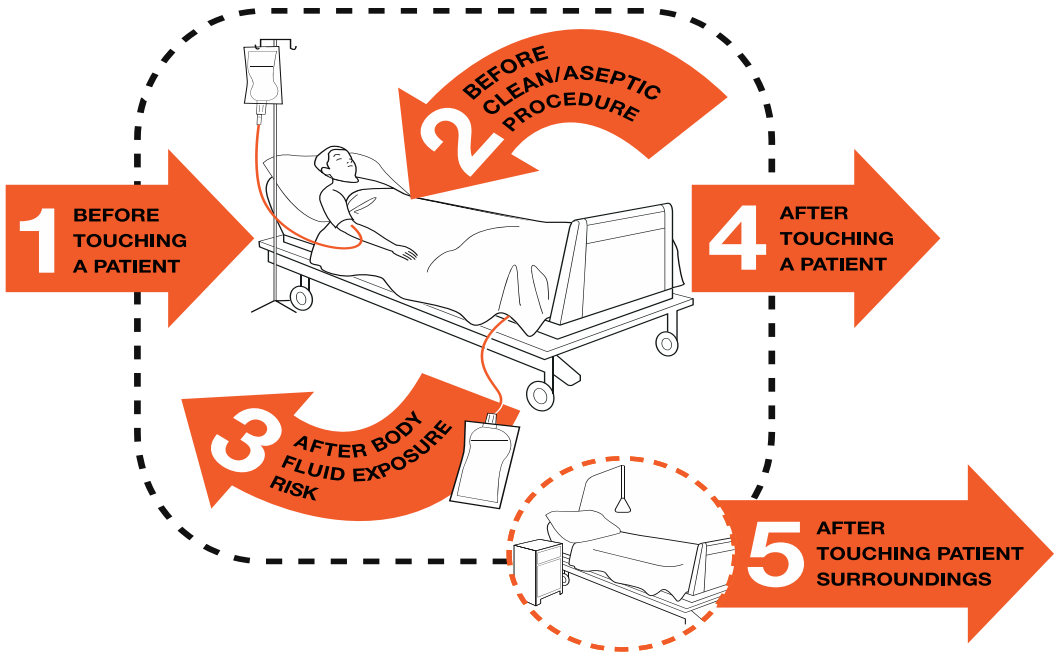
a) Before and after caring for the sick in any form.
b) Before, during and after preparing, eating food and feeding a baby.
c) After changing diapers or cleaning up a child who has used the toilet
d) After using the toilet.
e) Before and after using a face mask.
f) After blowing nose, coughing or sneezing.
g) After touching and disposing waste.
h) After being in the public places and touched items or surfaces that may be frequently touched by other people, like doors, tables, gas pumps, shopping carts, electronic cashier register, etc.

Hand hygiene for healthcare workers

WHO recommends five moments of hand hygiene to track hand hygiene performance of HCWs. The five moments of hand hygiene that should be performed to ensure the health and safety of patient and staff include:

i. Before touching patients
ii. Before performing clean or aseptic procedure
iii. After a procedure with the risk of exposure to body fluids
iv. After touching patients' directly and
v. After touching patients' surroundings.

Your 5 Moments for Hand Hygiene



1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching him/her.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3	AFTER BODY FLUID EXPOSURE RISK	WHEN?	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
4	AFTER TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.

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WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

Figure 5: WHO Moments of Hand Hygiene

General Hand-washing Technique

i. Duration for the entire procedure should be 40-60 seconds
ii. Remove all hand jewelry including rings and watches
iii. Wet hands with water
iv. Apply enough soap to cover all hand surfaces
v. Rub hands palm to palm
vi. Right palm over left dorsum with interlaced fingers and vice versa
vii. Palm to palm with fingers interlaced.
viii. Backs of fingers to opposing palms with fingers interlocked and rotational rubbing backwards and forwards
ix. Rotational rubbing of the led thumb clasped in right palm and vice versa
x. Rotational rubbing of the fingertips of the right hand on the palm of the left hand and vice versa
xi. Rotational rubbing of the left wrist with the right hand and vice versa.
xii. Rinse hands with water and dry hands thoroughly with a single use towel or air dry your hands if towel is not available
xiii. Use towel to turn off faucet or your elbow if single use towel is not available
xiv. Throw the paper towel in the waste bin.[28]

[28] Federal Ministry of Health, Nigeria. 2022. National Guidelines for Water, Sanitation and Hygiene (WASH) in Healthcare Facilities in Nigeria

Basic Hygiene Facilities

A hand hygiene facility is any device that enables staff and patients to clean their hands effectively under running water such as, a sink with tap, water tank with tap, bucket with tap (Veronica bucket) or other similar device. Alcohol based hand rub dispensers are also hand hygiene facilities, whether they are fixed or portable.

To provide basic hygiene services in HCFs the following conditions must be satisfied or met:

i. All the hygiene facilities must be functional.
ii. **Points of Care**: There must be functional hand hygiene facilities at points of care (e.g., consultation or examination rooms) with soap and water or either alcohol-based hand rub however, when alcohol-based hand rub is used, health care staff may carry a dispenser around between points of care.
iii. **Accessibility**: There must be functional hand hygiene facilities in toilets or (5meters of toilets and must have soap and water available always. Alcohol-based rub is not considered adequate for hand hygiene at toilet as it does not remove fecal matters from hands.
iv. Hand hygiene facilities should be located at every strategic point in the facility e.g., entrance gate, reception, walkways, etc.
v. The five (5) steps implementation strategy of WHO multimodal hand hygiene implementation strategy should be practiced in HCFs.[29]

The steps include:

i. Facility preparedness (readiness for action)
ii. Baseline evaluation-establishing the current situation
iii. Implementation (introducing the improvement activities)
iv. Follow-up evaluation (evaluating the implementation of impact)
v. Action planning (review cycle-developing a plan for the next 5 years).[30]

Quality assurance for hand hygiene compliance and sustainability in HCFs

i. The QMTs, which include IPC/WASH Team/Focal Person shall ensure adherence and compliance to hand hygiene practices by all staff, patients, and visitors in all areas of the HCFs where healthcare and related services are provided.
ii. HCFs shall ensure regular capacity building of the QMT, including IPC /WASH team/Focal Persons. Relevant tools for monitoring of hand hygiene compliance (e.g., WHO hand hygiene self-assessment framework[31]) should be provided.

[29] https://www.ncbi.nlm.nih.gov/books/NBK144032/
[30] Federal Ministry of Health, Nigeria. 2022. National Guidelines for Water, Sanitation and Hygiene (WASH) in Healthcare Facilities in Nigeria
[31] WHO Hand hygiene assessment framework-h ps://cdn.who.int/media/docs/default-source/integratedhealth- services-(ihs)/hand-hygiene/monitoring/hhsa-framework-october-2010.pdf?sfvrsn=41ba0450_6

iii. Each HCF should adopt a behavior change and communication model that will contribute towards improving hand hygiene practices by all.

iv. The QMT/WASH Team/Focal Person shall also see the development of operational plans and ensure that all relevant materials, supplies and tools for implementing hand hygiene guidelines are put in place.

Table 12 below indicates the WHO recommended minimum water quantities required for different stations in healthcare settings.

Table 12: Minimum Water Quantities Required in the Healthcare Facilities

Different Stations in Healthcare Facility	Minimum Water requirements
Outpatients	5 liter/consultation
In patients	40–60 liter/patient/day
Operating theater or maternity unit	100 liter /intervention
Dry or supplementary feeding center	0.5–5 liter/consultation (depending on waiting time)
Wet supplementary feeding center	15 liter/consultation
Inpatient therapeutic feeding center	30 liter/patient/day
Cholera treatment	60 liter/patient/day ; 15 liter/care giver/day
Severe acute respiratory diseases isolation center	100 litres/patient/day
Viral haemorrhagic fever isolation centre	300–400 liters/patient/day

Source: WHO. (2008). Essential environmental health standards in healthcare pg 29.

The above minimum required volumes include water used for drinking, cleaning, bathing, cooking, and laundry and hand hygiene. Although the estimates can be used for planning purposes, other factors such as local water use practices, type of WASH facilities and level of care should be considered. NPHIL/MoH in Liberia used these figures to quantify the average water demand for different levels of healthcare facilities for planning purposes as indicated in Table 13.

Table 13: Water Demand Estimates for Different Levels of Healthcare Facilities

Levels of Health Facility	Average Water Demand per day
Level 1 (Clinics)	2,688 liters ~ (710 gallons)
Level 2 (Health Centers)	6,057 liters ~ (1,600 gallons)
Level 3 (Hospitals)	23,470 liters ~ (6,200 gallons)

Source: *NPHIL/MOH. 2013. Infrastructure standards in Liberia pg 228.*

Table 14: WHO standards for water, sanitation and hygiene in healthcare facilities Source: WHO 2008)

Items	Recommendations	Explanation
Water quantity	5–400 liters/person/day	Outpatient services require less water, while operating theatres and delivery rooms require more water. The upper limit is for viral haemorrhagic fever (e.g., Ebola) isolation centers
Water access	On-site supplies	Water should be available within all treatment wards and in waiting areas.
Water quality	Less than 1 Escherichia coli/ thermotolerant total coliforms per 100 ml. Presence of residual disinfectant. Water safety plans in place.	Drinking water should comply with WHO Guidelines for Drinking-water Quality for microbial, chemical and physical aspects. Facilities should adopt a risk management approach to ensure that drinking water is safe
Sanitation quantity	1 toilet for every 20 users for inpatient setting. At least 4 toilets per outpatient setting. Separate toilets for patients and staff.	A sufficient number of toilets should be available for patients, staff and visitors.
Sanitation access	On-site facilities.	Sanitation facilities should be within the facility grounds and accessible to all types of users (females, males, those with physical challenges).
Sanitation quality	Appropriate for local technical and financial conditions, safe, clean, accessible to all users including those with reduced mobility.	Toilets should be built according to technical specifications to ensure excreta are safely managed.
Hygiene	A reliable water point with soap or alcohol-based hand rubs available in all treatment areas, waiting rooms and near latrines for patients and staff.	Water and soap (or alcohol-based hand rubs) should be available in all key areas of the facility for ensuring safe hand hygiene practices.

Annex 7: Roles of the WASH Team / Focal Person (EHTs)

Each HCF irrespective of the category (Primary, Secondary or Ter tiary) shall establish Quality Management Team with WASH or IPC Focal Person who shall be responsible for leading the assessment, planning, budgeting, implementing monitoring and reporting of WASH/IPC related services in collaboration with other relevant stakeholders in the facility.

The WASH team, working as part of the Healthcare Quality Management Team shall be responsible for the implementation of the WASH component of the IPC program (refer to WHO core component 8 of IPC program and eight practical steps for improving WASH in HCFs).

They shall specifically:

1. Lead periodic assessments and reporting of the WASH in the HCF, in collaboration with the Quality Management Team and IPC Focal Point
2. Develop plans and budget to address the identified gaps in the WASH services, in collaboration with the IPC Focal Point in HCFs
3. Coordinate, monitor and report on the overall WASH services in the facility, including availability of materials for Water, sanitation and hygiene services.
4. Undertake operational and maintenance functions to ensure optimum performance and functionality of the WASH equipment and facilities.
5. Participate in the development and implement Standard Operating Procedures (SOPs) and Protocols for all WASH services such as water quality, cleaning, waste management etc.
6. Train all staff engaged into delivery of WASH services in HCFs.
7. Where necessary, facilitate engagement of facility leadership with relevant stakeholders such as Community leaders, NGOs, CBOs, FBOs, and Donors etc.
8. Hold regular meetings and submit reports through appropriate channels to the facility leadership.

Annex 9 presents the role and responsibilities of stakeholders at district and local levels or community levels. It also outlines some key actions they undertake to help achieve and maintain adequate environmental health conditions in HCFs. The list is not exhaustive and can be added to in any particular context.

SN	Stakeholder group	Contribution to improved environmental health in HCFs
1	Patients	Comply with procedures for use and care of water and sanitation facilities and observe appropriate hygiene measures.
2	Patients' families and care givers	Comply with procedures for use and care of water and sanitation facilities and observe hygiene measures. Encourage patients to do the same
3	Healthcare workers	Carry out disease prevention duties (such as cleaning, healthcare waste management, hand hygiene and asepsis in health care) consistently and well. Care for and maintain water and sanitation facilities. Encourage patients and care givers to adopt appropriate behaviors Participate actively in achieving and maintaining targets
4	Healthcare Setting (HCS) managers	Plan and implement programs to set, achieve, monitor and maintain targets. Create conditions in which staff are motivated to meet and maintain targets.
5	Health authorities	Provide resources and direction for setting, achieving and maintaining targets
6	Environmental health Technicians	Ensure the collection and disposal of healthcare waste at all facility. Provide advice or guidance for identifying problems and recommending solutions for water supply, sanitation and hygiene Conduct routine supervision and mentoring
7	Education sector	Raise awareness in schools and other sectors. Provide training for the health sector
8	Politicians	Provide and mobilize political and financial support for improvement of WASH services
9	Construction, maintenance workers, including local contractors	Ensure correct design and construction of buildings and sanitary infrastructure and maintain services to HCSs as a priority Provide skilled services that comply with national standards for construction, maintenance and repair of buildings and sanitary infrastructure.
10	National and international funding bodies	Provide funding for new HCSs, upgrading or renovation of existing ones and ongoing maintenance of targets
11	Communities (others)	Participate in disease control sessions through community health organizations that might exist. Report on healthcare waste found outside of HCFs Promote open defecation free (ODF) initiatives

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds

1a

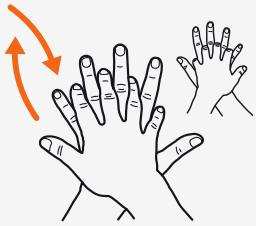
1b

Apply a palmful of the product in a cupped hand, covering all surfaces;

2

Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

Palm to palm with fingers interlaced;

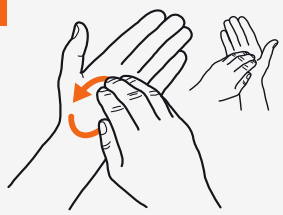
5

Backs of fingers to opposing palms with fingers interlocked;

6

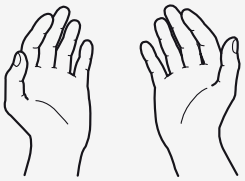
Rotational rubbing of left thumb clasped in right palm and vice versa;

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8



Once dry, your hands are safe.

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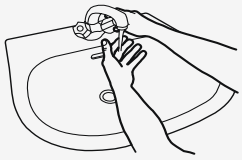
Annex 8: How to perform hand hygiene with alcohol-based hand rub

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

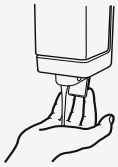
Duration of the entire procedure: 40-60 seconds

0



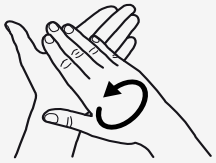
Wet hands with water;

1



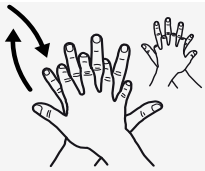
Apply enough soap to cover all hand surfaces;

2



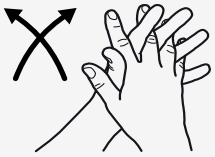
Rub hands palm to palm;

3



Right palm over left dorsum with interlaced fingers and vice versa;

4

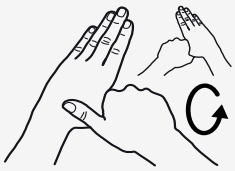


Palm to palm with fingers interlaced;

5

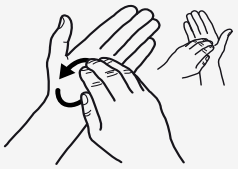
Backs of fingers to opposing palms with fingers interlocked;

6



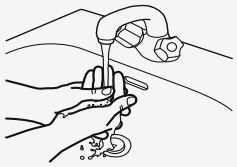
Rotational rubbing of left thumb clasped in right palm and vice versa;

7



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8

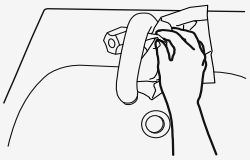


Rinse hands with water;

9

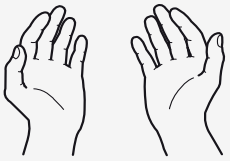
Dry hands thoroughly with a single use towel;

10



Use towel to turn off faucet;

11



Your hands are now safe.

World Health Organization | Patient Safety — A World Alliance for Safer Health Care | SAVE LIVES Clean Your Hands

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

May 2009

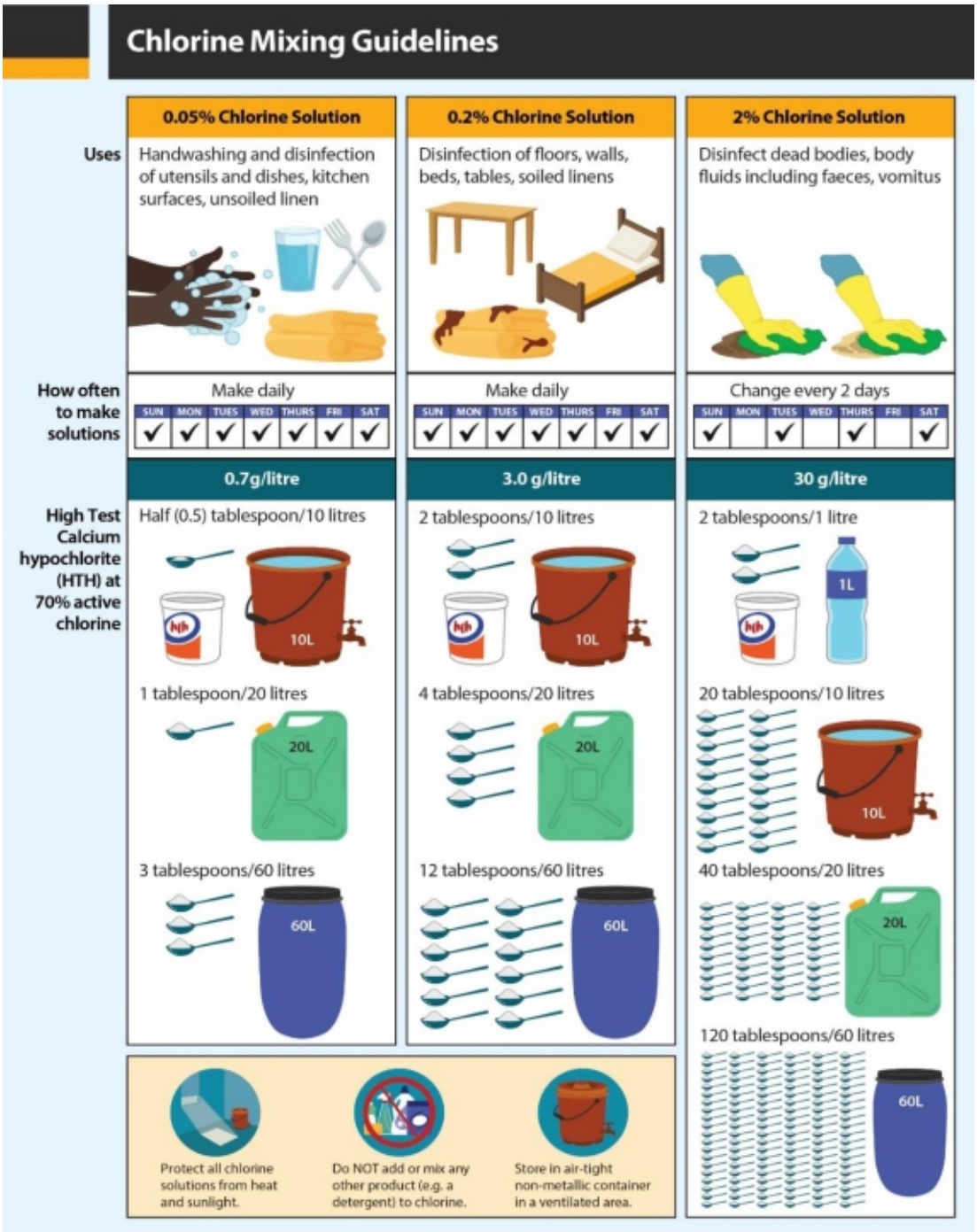
Annex 9: How to perform hand hygiene with soap and water

Annex 10: Classification and color-coding of healthcare waste

Category	Examples	Colour of bin & liner	Marking
General/non-infectious	Paper, packaging materials, Plastic bottles, food, cartons	Black	No recommended marking
Infectious	Gloves, dressings, blood, body fluids, used specimen containers	Yellow	
Highly infectious or anatomical/ pathological	Laboratory specimens and containers with biological agents, anatomical waste, pathological waste	Red	
Chemical	Formaldehyde, batteries, photographic chemicals, solvents, organic chemicals, inorganic chemicals	Brown	Marking will vary with classification of the chemical
Radioactive	Any solid, liquid, or pathological waste contaminated with radioactive isotopes of any kind	Yellow	 Radioactive symbol

***Source**: Federal Ministry of Health, Nigeria. 2022. National Guidelines for Water, Sanitation and Hygiene (WASH) in Healthcare Facilities in Nigeria*

Annex 11: Preparation of chlorine solutions for cleaning and disinfection in the Cholera Treatment Center or Cholera Treatment Unit (CTC/CTU)[32]



***Source**: MOH, Zambia.2024. Infection Prevention and Control Standard Operating Procedures for Cholera Treatment Centers and Cholera Treatment Units (CTC/CTUs).*

***Note**: 30 High-test hypochlorite or HTH loses about 2% of active chlorine per year, while Sodium dichloroisocyanurate (NaDCC) is the most stable product*

[32] Global Task Force on Cholera Control (GTFCC). 2011. Cholera response field manual.

Annex 12: Cleaning protocol for WASH Facilities

SN	Area/surface	Frequency	Process
1	Floors	Twice a day or more as needed	Use a clean wet mop and fresh detergent solution. Disinfectant cleaning solution should be used when contamination is present.
2	Sinks	Daily or more often as needed	Scrub with separated mop, cloth or brush and a disinfectant cleaning solution.
3	Toilets/latrines	Daily or more often as needed	Scrub with separated mop, cloth or brush and a disinfectant cleaning solution.
4	Lamps, chairs, tabletops and counters	Daily or when visibly dirty or soiled	Damp dusting-wipe with a cloth dampened in a fresh detergent solution.
5	Walls, windows, ceilings and doors	Weekly or when visibly dirty	Spot clean using a damp cloth-wipe with a cloth dampened in a fresh detergent solution
6	Procedure and examination rooms	After every procedure and whenever visibly dirty	Wipe horizontal surfaces, equipment and furniture used for the procedures with a disinfectant cleaning solution. Linen or paper on the examination table should be changed after each patient
		At the beginning of every day	All flat surfaces (table, chairs, etc) should be wiped with clean, lint-free moist cloth to remove dust and lint that may have collected over-night
7	Operating room	Between every case	Clean blood or other body fluid spills. Wipe all surfaces and mattresses pad first with detergent solution, then a disinfectant cleaning solution. Wipe all flat surfaces that have come in immediate contact with a patient or body fluids with a disinfectant cleaning solution
		At the end of every day	Total or terminal cleaning (mopping floors and scrubbing all surfaces from top bottom) of the operating room should be done at the end of each shift.
8	Cleaning equipment (mops, brushes, etc.)	Between each use	If contaminated, decontaminated in 0.5% chlorine solution Clean in soap or detergent and water Sun dry until complete dry before next use
10	Water containers	Each time emptied	Wash in 0.5% (for Ebola), 0.2% (for cholera) chlorine solution and rinse thoroughly with clean water

Note: *Clean all surfaces using detergent and water applied by wiping method with a cloth or mop first. Cloths should not be used for multiple patient care spaces as they may spread contamination. A clean cloth should be used for each patient space. Reusable cloths and mops used for the cleaning and disinfection of a patient care space (bed and surrounding environment) should be placed in appropriate laundry containers after cleaning and disinfection step.*