Public Health Engineering Division
Department of Public Health
Ministry of Health

Printed at Bhutan Printing Solutions (www.prints.bt)

NATIONAL STRATEGY

FOR WATER, SANITATION AND HYGIENE IN HEALTHCARE FACILITIES: A FRAMEWORK FOR ACTION (2021 – 2030)

DEPARTMENT OF PUBLIC HEALTH
MINISTRY OF HEALTH
APRIL, 2021

NATIONAL STRATEGY FOR WATER, SANITATION AND HYGIENE IN HEALTHCARE FACILITIES: A FRAMEWORK FOR ACTION (2021 – 2030)

Public Health Engineering Division
Department of Public Health
Ministry of Health
Thimphu : Bhutan
April, 2021

Table of Contents

FOREWORD

Most of us tend to blindly believe that all our health care facilities (HCFs) are a safe and hygienic place for people to visit and seek health care of desired quality. However, it is not always to be so. To our sheer surprise and dismay, the global data show that some of our health care facilities (HCFs) completely lack water, sanitation, hygiene, waste management and cleaning services, which are, in fact, the essential elements of quality care.

This dire situation inevitably puts both health service providers and users at an increased risk of infections, injuries, and an exposure to toxic effects of medical waste. Facilities without such basic services, it also prevents them from responding to outbreaks, including COVID-19 compromise patient safety, exacerbate health care-acquired infections, and contribute to the spread of antimicrobial resistant infections. Putting people's lives at risk is unethical and unacceptable.

The findings of the national census of Water, Sanitation and Hygiene, 2019 in HCFs in Bhutan, and the Internal Joint Sector Review paint equally a grim picture, similar to that of a global scenario. There are reports of our HCFs running without adequate water supply, sanitation and hygiene facilities. One in two HCFs frequently face water supply disruptions, and one in ten water sources is contaminated. Adding to the woes, most toilets of our HCFs are not maintained regularly, and some are completely unusable. HCFs have inadequate hygiene facilities at points of care, and poor environmental cleaning practices. Only one-third of HCFs meet the national medical waste management standards. So, such deficiencies in HCFs will have a wider impact on the Bhutanese health care systems, working environment of health care providers, and the overall wellbeing of patients and communities.

More importantly, it is, now, globally recognized that the provision of WASH services is essential for preventing and protecting human health during disease outbreaks, including the on-going COVID-19 pandemic. Ensuring the availability of adequate, reliable and quality WASH services, and implementation of waste management practices in every HCF will prevent the transmission of pathogens like the one causing COVID-19. Urgently, addressing WASH issues is particularly imperative for Bhutan as disease outbreaks or pandemics, can easily overwhelm and jeopardize our resource-constrained health care systems, potentially leading to greater disruptions in health, economy and other social sectors.

The Royal Government of Bhutan has committed itself to attaining universal access by 2030 to water and sanitation as evident in several of its overarching policy and strategic documents. Aligning with and reinforcing the government's 12th Five Year Plan (2018-23), and aiming at inching closer towards the targets of the SDGs related to health and WASH, the Ministry of Health published the 'National Strategy on WASH in Health Care Facilities: A Framework for Action, 2021-2030' with set goals, strategic actions and indicators. Implementation of this

strategy will help bridge the gaps by addressing the barriers that are undermining the efficient programming and monitoring of WASH services. In particular, it will guide the Ministry of Health and its partners in putting together synergistic efforts and leveraging resources for institutionalizing WASH services in all HCFs.

The Ministry of Health would like to seek the support of all partners and stakeholders to coordinate, cooperate and collaborate in implementing the planned actions contained in this strategy. We together can transform WASH services in HCF in Bhutan, and help provide quality care to all, including children, women, disabled persons and older populations, as we move towards fulfilling the targets of universal health coverage and the Sustainable Development Goals.

Director
Department of Public Health
Ministry of Health

Acknowledgement

This National Strategy for WASH in Healthcare Facilities, 2021 was made possible through the technical and financial support from SNV (Netherlands Development Organization), UNICEF and WHO. The Ministry extends its deep appreciation to all the stakeholders, including the district health sector, civil society organizations and development partners for their sincere efforts, technical inputs and contributions made towards the development and successful completion of this strategy document. The Ministry also acknowledges the technical and financial support from SNV, UNICEF and WHO towards the national WASH in Healthcare Facilities Baseline Survey which provided the basis for the development of the Strategy.

The development and finalization of the National Strategy for WASH in HCFs was closely guided by the officials/representatives of the following Departments/organizations:

1. Public Health Engineering Division, DoPH, MoH
2. Health Infrastructure and Development Division, DoMSHI, MoH
3. Infection Prevention and Control Programme, DMS, MoH
4. Royal Centre for Disease Control, MoH
5. Health Promotion Division, DoPH, MoH
6. Policy and Planning Division (PPD), MoH
7. Jigme Dorji Wangchuck National Referral Hospital (JDWNRH)
8. District Health Sector
9. Ability Bhutan Society
10. Disabled Person's Association of Bhutan (ABS)
11. United Nations Children's Fund (UNICEF)
12. World Health Organization (WHO)
13. Netherlands Development Organization (SNV)

LIST OF ABBREVIATIONS

AMR	-	Antimicrobial Resistance
BHU	-	Basic Health Unit
COVID-19	-	Coronavirus disease
DHIS-2	-	District Health Information System
FYP	-	Five Year Plan
GNHC	-	Gross National Happiness Commission
HCAI	-	Health Care Associated Infection
HCFs	-	Health Care Facilities
HMIS	-	Health Management Information System
IPC	-	Infection, Prevention and Control
JMP	-	Joint Monitoring Programme of the WHO and UNICEF
MoH	-	Ministry of Health
MCH	-	Maternal and Child Health
M&E	-	Monitoring and Evaluation
MHHM	-	Menstrual Health and Hygiene Management
MWM	-	Medical Waste Management
MoWHS	-	Ministry of Works and Human Settlement
O&M	-	Operations and Management
PHC	-	Primary Health Centre
PHED	-	Public Health Engineering Division
PPE	-	Personal Protective Equipments
POC	-	Point of Care
QoC	-	Quality of Care
RGoB	-	Royal Government of Bhutan
RSAHP	-	Rural Sanitation and Hygiene Programme
SDG	-	Sustainable Development Goal
WASH	-	Water, Sanitation and Hygiene
WASH FIT	-	Water and Sanitation for Health – Facility Improvement Tool
WinHCF	-	WASH in HCFs
UHC	-	Universal Health Coverage
WHO	-	World Health Organisation
UNICEF	-	United Nations Childrens' Fund
SNV	-	Netherlands Development Organisation

SUMMARY

Introduction: The importance of WASH in HCFs is globally recognized, and emphasized even more now than ever before with the COVID-19 pandemic ravaging the world. Making water, sanitation, hand hygiene and health care waste management facilities available in HCFs, schools, offices, and other public places is at the heart of counter preventive measures for thwarting the spread of COVID-19. Even before this, the significance of WASH was captured in the 2030 Agenda for sustainable development, highlighting the need to expand WASH beyond households, and respond to the needs of diverse populations, especially those living in vulnerable circumstances.

A global Call to action on WASH in health care facilities, issued by the United Nations (UN) Secretary General in 2018, urged all Member States, UN agencies and partners to commit leadership and resources to addressing this fundamental challenge.

In response, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) developed a corresponding global workplan with targets and metrics to guide action. The two organizations have since released two updates on global data as well as a framework for national and local level action detailing eight 'practical steps' that countries might take. The unanimous approval in 2019 of the World Health Assembly Resolution 72.7 on WASH in health care facilities committed all countries to act and draws upon the global vision, related metrics and practical steps. The practical steps included the need to develop a national strategy and set of targets for improving WASH in HCF.

The global WASH reports (2015, 2019), prepared by the Joint Monitoring Programme of the WHO and UNICEF, identified the major gaps in WASH services – 1.8 billion people received services from HCFs that lacked basic water services. One in 10 HCFs did not have toilets, and one in three lacked hand-hygiene facilities. Seeing such a huge gap, which was putting millions of people at an increased risk of infection by seeking care in HCFs without WASH services, the Secretary-General of the United Nations called for a global solidarity and action in improving WASH in HCFs, and give people dignity and basic rights to quality care. The World Health Organization and United Nations Children's Fund collaborated to take the agenda of WASH in HCFs forward by forming a joint programme to monitor WASH indicators globally, and support countries with tools, standards and guidelines to improve WASH in HCFs. Presently, countries are in different stages of strengthening WASH services.

The recent assessment report on WASH indicated some significant problems that HCFs in Bhutan are facing while providing WASH services. HCFs experienced water supply disruptions (58%), water contamination (10%) and water unavailability year round (5%). About five percent of toilets and hospital consultation rooms did not have any water supply at all. More than one in ten toilets were unusable due to poor maintenance. And, the vast majority of toilets did not have provisions to cater to persons with limited mobility and

women and girls. Poor hygiene standards were observed at points of care in HCFs as 27% of HCFs failed to meet the standards of hand hygiene. And, almost all HCFs did not fulfill environmental cleaning standards. Similarly, only 36 percent of HCFs correctly segregated medical waste, safely treated and disposed of infectious and sharps waste. Currently, in the face of the COVID-19 spreading in the country, inadequate WASH services in HCFs is only going to exert more pressure on the health care systems and controlling the pandemic even more difficult. There are several factors affecting the functioning and management of WASH services. For instance, programming, planning and budgeting for WASH are not fully integrated into the routine health care systems. Most HCFs do not have funds, and lack capacities to maintain infrastructure for delivering quality WASH services. Community participation in decision making, and monitoring of WASH indicators by HCFs are equally low.

Rationale of strategy: The significance and relevance of WASH in HCFs has increased by multi folds as the country is in the midst of grappling with the COVID-19 pandemic. WASH is identified as a vital component of COVID-19 response and recovery. WASH, encompasses medical waste management, infection prevention and control interventions and environmental hygiene. Ensuring better WASH services will improve many health outcomes, including in reducing newborn and maternal deaths, health care associated infections, antimicrobial resistance, and the spread of COVID-19. Therefore, in order to effectively and concertedly address the current issues and gaps ailing the WASH sector, the Ministry of Health developed the 'National Strategy for WASH in Health Care Facilities: A Framework for Action, 2021-2030'.

Vision: Safe and quality health care for every Bhutanese through establishment of WASH in all health care facilities

Mission: Universal access to WASH services and practices of highest standards.

Objective: To institutionalize and standardize WASH services and practices in every health care facility.

National target: By 2030, 100% coverage of HCFs in every setting with quality WASH services, which are equitably accessible to all, including children, women and persons with disabilities.

Strategic objectives and strategies

Strategic objectives	Strategies
STRATEGIC OBJECTIVE 1: INCREASE EQUITABLE ACCESS TO QUALITY WASH SERVICES, AND IMPROVE MEDICAL WASTE MANAGEMENT AND ENVIRONMENTAL CLEANING IN HEALTH CARE FACILITIES.	1.1 Establish safe, adequate, accessible and inclusive WASH services in all HCFs through investments in and standardization of WASH infrastructure ensuring the provision of quality care and safe environment to health care service users and providers, and the inclusion of considerations for sex-segregated and disability-enabled toilets.
	1.2 Integrate components of WASH policies, programmes and services into the mainstream health systems development, including health sector planning and budgeting, to sustain WASH services.
	1.3 Collaborate with the IPC and HCFs to set WASH services as an entry point to strengthen the medical waste management (MWM), and infection prevention and control (IPC) initiatives in HCFs.
	1.4 Strengthen and implement environmental cleaning protocols in all HCFs ensuring clean and safe health facility environment is maintained at all times.
	Strategy 1.5: Boost resources for WASH/IPC/MWM services by pegging WASH agenda with related programmes, such as the COVID-19 response and recovery and environmental health programme, and advocating for support in the provision of a safe and sound environment to health care workers, non-clinical staff, patients and communities.
	1.6 Strengthen coordination, collaboration and partnership with government agencies, local government, development partners, academic institutions, civil society organizations, private sector, media, communities and other relevant stakeholders in scaling up and improving WASH services.
STRATEGIC OBJECTIVE 2: DEVELOP CAPACITIES OF HEALTH WORKFORCE AND COMMUNITIES TO PROMOTE AND SUSTAIN WASH SERVICES AND PRACTICES.	2.1 Incorporate WASH and IPC standards and guidelines into pre-service curricula and in-service training modules.
	2.2 Build capacities of health care workers and key community members on WASH/IPC/MWM/ environmental cleaning tools and standards to maintain well-functioning

STRATEGIC OBJECTIVE 3: REVIEW AND MONITOR REGULARLY THE PROGRESS MADE IN WASH INDICATORS TO INCREMENTALLY IMPROVE WASH SERVICES AND PRACTICES.	3.1 Incorporate WASH indicators into the health management information system, and monitoring framework, and generate disaggregated and reliable data for prioritizing resources and evidence-based WASH programming.
	3.2: Evaluate the effects of WASH interventions in HCFs on health programmes and outcomes, including maternal and child health, HCAI and AMR.

1. INTRODUCTION

1.1 Global call to action for WASH in health care facilities

In 2018, the Secretary-General of the United Nations made a global call for a collective action to instituting water, sanitation and hygiene (WASH) in all health care facilities (HCFs), emphasizing its irrefutable link to the achievement of the Sustainable Development Goals (SDGs), in particular, the SDG 6 – safe water and adequate sanitation for all.[1] [UNSG, 2018 #5;WHO-UNICEF, 2015#9] Notwithstanding the high-level declarations and resolutions made in the past, including those of the United Nations General Assembly, the United Nations Human Rights Council, and the World Health Assembly, on WASH and its associations with health and wellbeing, human rights, Sustainable Development Goals (SDGs), climate change, economic growth, etc., the seventy-second World Health Assembly issued a resolution urging all Member States of the World Health Organization (WHO) to ramp up their efforts and resources to improve the provision of safe water, sanitation and hygiene in health care facilities.[2] Since 2015, the World Health Organization and United Nations Children's Fund (UNICEF) collaborated in reviewing and monitoring WASH in HCFs, and are jointly coordinating the global effort to promote WASH, and leading the implementation of a framework on eight practical steps to improve WASH services in HFCs.[3] Provision of safe water, adequate and functioning sanitation facilities, and practice of hygiene and cleanliness are inevitably linked to important health outcomes, including, amongst others, improvements in maternal and newborn health, reductions in health care-associated infections (HCAI), control of the spread of antimicrobial resistance (AMR), and prevention of health risks from exposure of health workers, patients, families and community to unsafe health care waste.[4]

Globally, the provision of WASH services in HCFs is low, both in coverage and quality. This situation of WASH in HCFs (WinHCF) first came to light, and its significance underscored when the global review[i] was conducted by the WHO and UNICEF in 2015. It was reported that 38 percent of HCFs lacked an improved water source[ii], 19 percent were without improved sanitation[iii] and 35 percent did not have water and soap for hand-washing. In Asia, the basic water coverage varied between 51 percent in Vietnam and 99 percent in Sri Lanka. Between five and 40 percent of Asian countries did not have sanitation service in HCFs at all. However, provision of water was lowest in the African region (42%) while sanitation was lowest in the Americas (43%).[5] In countries of sub-Saharan Africa, more than half of rural HCFs did not

[i]Involving 66,101 health care facilities in 54 countries.

[ii]Improved water sources are those which by nature of their design and constriction have potential to deliver safe water. These include piped water, boreholes or tube wells, protected dug wells, protected springs, rainwater, and packaged or delivered water.

[iii]Improved sanitation facilities are those designed to hygienically separate human excreta from human contact. These include wet sanitation technologies - such as flush and pour flush toilets connecting to sewers, septic tanks or pit latrines - and dry sanitation technologies – such as dry pit latrines with slabs, and composting toilets.

have improved WASH services [Ethiopia (7%), Zambia (21%), Mozambique (29%), Kenya (30%), and Uganda (30%)].[6] Even in Eastern Mediterranean countries, WASH services were not well implemented in HCFs.[7] Globally, higher levels of HCFs tend to serve better WASH services than lower level ones, and urban HCFs doing better than rural ones. In 2019, the WHO and UNICEF's global baseline report[iv] on WASH in HCFs revealed that about 26 percent of HCFs either lacked or had limited basic water services, 21 percent did not have sanitation services, and 16 percent without hygiene facilities at points of care (PoC) or toilets. As a result, two billion people have been affected due to HCFs lacking water service, and 1.5 billion as a consequence of HCFs not having sanitation facilities. Moreover, a likelihood of getting infections was high among millions of women who gave birth every year in HCFs, which were inadequately equipped with WASH infrastructure in low-income countries.[8] In another review of environmental conditions and standard precaution items in 129,558 HCFs, 39 percent of them did not have adequate infectious waste disposal paraphernalia, 73 percent lacked sterilization equipment, and 59 percent had no reliable energy services.[9] Currently, countries are in different stages of improving WASH services in HCFs. In Asia and the Pacific, there are variations between countries in terms of WASH standards development and implementation, commitments of health authorities, and investments in human and infrastructure capacities for WASH. However, each country faces unique issues and barriers to progress.[10]

Therefore, with all these evidences of glaring gaps and constraints at hand, international community saw a strong case and motive to engage governments, institutions, development partners, civil society organizations, academia, communities, and other global and national partners in improving the quality and coverage of WASH services in HCFs by developing and implementing evidence-based, people-centric and responsive programme strategies ensuring that HCFs have safe and accessible water supply, improved sanitation infrastructure, hand hygiene facilities at points of care and at toilets, and proper waste disposal systems.

1.2 Water Sanitation and Hygiene in Bhutan housholds

Today, in general, the vast majority of the Bhutanese households have an increased access to safe drinking water and sanitation. In 2017, close to two-third of the population had basic water supply[v] while over one-third had an improved water supply[vi]. More rural areas (69%) than urban areas used a basic water supply. The use of water from unimproved sources went below one percent by 2017. As for sanitation, 67 percent of the population had an access to a

[iv] Datasets of over 560,000 health care facilities in 125 countries recorded in 2016.

[v] Drinking water from an improved source, provided that the collection time is not more than 30 minutes for a roundtrip, including queuing.

[vi] Water supply from those sources that have the potential to deliver safe water by nature of their design and construction, and include: piped water, boreholes or tube wells, protected dug wells and spring wells, rainwater, and packaged or delivered water.

basic sanitation service[vii], and, as of 2017, an open defecation[viii] stopped completely. However, people shared sanitation services, particularly among urban dwellers (15%) as compared to their rural counterparts (5%).[11]

1.3 Water Sanitation and Hygiene in health care facilities

The assessment by the Ministry of Health in 2019[12] throws light on the situation of WASH in HCFs (WinHCF) in Bhutan, as described below[ix]:

- ***Water supply:*** Even though all HCFs had water supply in terms of coverage, there were pressing issues pertaining to water unavailability (5%), contamination (10%), and supply disruption (58%). More than 50 percent of HCFs had their own water sources, and the rest got their water supply either from the municipality (11%), or the community (38%). Despite the majority of HCFs having undisrupted supply of water throughout the year, some HCFs faced shortages of water during monsoon (18%) and cold/dry season (12%). Water shortage was a problem all year round for five percent of HCFs. While 86 percent of HCFs had water supply available in their toilets and five percent did not have it at all. Nonetheless, high proportions of hospitals (96%) and BHUs (86%) had a water supply in their Maternal and Child Health (MCH) consultation or delivery rooms. Variations in water supply issues were observed across different levels of HCFs. For instance, disruption of water supply was seen more in Basic Health Units (BHUs)[x] than it was in hospitals[xi], whilst water contamination (E.coli and turbidity) was reported more in hospitals as compared to BHUs. Similarly, more hospitals received municipality-supplied water than did BHUs.

- ***Sanitation:*** As revealed by the same MoH's assessment report, only 16 percent of HCFs had a basic sanitation service. There was a high coverage for improved[xii] toilets (99%) as the majority of HCFs had pour-flush toilets, and three-quarter of toilets connected to septic tanks. However, the primary issue with these toilets was their usability due to poor maintenance, as 16 percent of toilets were out of conditions and completely unfit for use by health care workers and patients alike. Further, other areas of improvements for consideration were the need to keep provisions for sex-segregated, disability-responsive and menstrual health and hygiene management (MHHM) enabling toilets. Nevertheless,

[vii] Use of improved sanitation facilities and not shared with other households.

[viii] Disposal of human faeces in fields, forests, bushes, open bodies of water, and other open spaces, or with solid waste.

[ix] See annex (c) for the summary of the key findings of the assessment.

[x] Basic Health Units grade-II are now referred to as Primary Health Centres (PHCs) with 5 beds, while Basic Health Units grade-I are called hospitals, which have 10 beds.

[xi] Hospitals refer to those district health facilities, which are equipped with 20 beds and above, and provide a secondary level of health care services.

[xii] 'Improved' refers to sanitation facilities that hygienically separate excreta from human contact such as pour-flush toilets (connected to piped sewer systems, septic tanks or pit latrines), and pit latrines (ventilated improved pit latrines, dry pit latrines with slabs, or composting toilets).

there were some HCFs with improved toilets, which were not only usable but also were sex-segregated (31%), user-separated (73%), MHHM-facilitated (16%) and accessible to people with limited mobility (31%).

- ***Hygiene:*** As for the availability of basic hand hygiene facilities, 73 percent of HCFs had a basic hygiene service. Moreover, 88 percent of HCFs had hand hygiene amenities with soap and water, or alcohol-based hand rub at sites where patients received medical care, and within 5 meters of toilets. Compared between hospitals and BHU-I, 89% of BHU II have hand-washing amenities within 5 meters of toilets with water and soap available and BHU II were also more likely than not to fulfil the hygiene-related standards and services.

- ***Environmental cleaning:*** Despite the immense effect the environmental cleaning has on the control of health care associated infections (HCAI), only 20 percent of HCFs had cleaning protocols, and 45 percent had trained cleaning staff. Only five percent of HCFs fulfilled environmental cleaning standards.

- ***Medical waste management:*** About 80 percent of HCFs maintained a three colour-coded bin system for segregating medical wastes. Most HCFs managed infectious waste[xiii] (59%) as well as sharps waste (50%). However, only 36 percent of HCFs correctly segregated medical waste, and safely treated and disposed of infectious and sharps waste. More hospitals than BHUs managed waste correctly in accordance to the national standards. Overall, the prevalence of HCAI rate is 11 percent[xiv], which is higher than HCAI rates in developed countries. The waste management initiative recently piloted in Phuentsholing hospital proved effective in minimizing the amount of medical waste going to a landfill.[13] Factors associated with high HCAI rates include poor environmental hygiene, improper disposal of waste, inadequate water supply, poor sanitation and non-compliance of infection control measures.[14, 15]

1.4 Recurring and emerging issues

Countries can ensure quality health care services only when HCFs are sufficiently supported by WASH infrastructure and services. WASH in HCFs directly affect the health conditions of patients, especially those of newborn infants, children and mothers, and the working environment of health care providers. HCAIs pose threats to every person either visiting or working in HCFs as associations between poor WASH services and manifestation of HCAIs are well established. Now, with the Covid-19 infection rapidly spreading across the world, the role of WASH in its prevention and control is unquestionably relevant and significant.

[xiii] Infectious wastes include sharps, pathological waste, chemicals, pharmaceuticals, radioactive waste and genotoxic waste.

[xiv] HCAI rates vary between 5.7 % and 19.1% in low and middle income countries.

- ***Neonatal and maternal mortalities:*** WASH services, as part of delivering primary health commitments, is crucial in enhancing quality care especially for improving maternal and child health. More than one in 10 patients, many of whom are women coming for deliveries, develop infections during their stay in a hospital in developing countries.[16] Globally, 11 percent of maternal mortality is attributed to infections that are developed among mothers while in a hospital.[17] Similarly, 26 percent of deaths among neonates is due to infections acquired in a hospital.[18] Most of such neonatal deaths occur in developing world (56%), particularly in Asian and African countries.[19] Nonetheless, neonatal survival rates can be improved by providing water and sanitation facilities in delivery rooms, and practicing hand washing with soap among care providers and mothers themselves. In Bhutan, even though substantial percentages of maternal (11%) [20]and neonatal (9%)[21]deaths are caused by infections, there has not been any study done to see the associations of such deaths with WASH services. However, sporadic neonatal deaths due to infections at the national referral hospital had been reported in the past.[22, 23]

- ***COVID-19 pandemic:*** Health care providers are the backbone of any health care systems, and ensuring their safety is imperative, especially in times of emergencies. It is reported that health care providers, as the frontline workers, are more likely than the general population to get a COVID-19 infection.[24] It is evidently apparent that the institutionalization of WASH in HCFs is not just an option for any government to consider, but instead it is an indispensable part in the prevention and control of the spread of disease outbreaks, including COVID-19. This will not only protect health care providers in HCFs but also those at homes, in schools, offices, market places and communities.[25]

1.5 WASH and its cross-sectoral implications

WASH has wider implications, beyond the health care-related concerns, on a gamut of cross-cutting issues, which are not only important to raise them as issues, but also address them in health policies and strategies so as to uphold the principle of universal access to quality care for all. The three such cross-cutting themes identified for their inclusion and integration into the WinHCF strategic plans are – gender needs, needs of people with diverse disabilities, and the need emerging from climate change.

- ***Gender:*** Women and girls are affected disproportionately by the burden imposed on them for having to use HCFs that lack water and sanitation services. Since women are the main users of health services as well as the primary caregivers of family members in many low- and middle-income countries, they bear the burden of poor WASH services in HCFs, exposing themselves to increased risks of infections and other health care consequences. [26] Care seekers, especially women, get dissatisfied with and discouraged to utilize health care services, where HCFs either lack WASH infrastructure or are inadequately equipped.[27] Further, lacking gender considerations in WinHCF policy frameworks

inadvertently hinders the integration of gender sensitive measures (protocols and norms) into the WASH strategies at facility levels.[28] For instance, most HCFs in the developing countries do not have sex or gender segregated toilets, and amenities to cater to the menstrual hygiene needs of patients and staff. In Bhutan, most HCFs do not have sex-segregated toilets, and facilities in a toilet for women/girls to manage their menstrual hygiene (16%).[12]

- ***People with disabilities:*** HCFs fulfil one of the basic sanitation norms if they have a minimum of two toilets in outpatient settings, where one is meant for staff and the other one for patients and others, including those with limited mobility. Globally, one out of 10 HCFs has no sanitation services, and the availability of toilets that are accessible (with the support of a wheelchair or ramp) to those with limited mobility is dismayingly low. [8] In the case of Bhutan, only about three in 10 HCFs had toilets accessible to persons with disabilities.

- ***Climate change:*** Natural calamities like floods, storms, drought, etc. have a direct impact on HCF infrastructure and human health. The fluctuations in weather patterns due to climate change may cause glaciers to melt at a faster rate, which can result in the depletion of water sources, and eventually affect the supply of portable water.[29] Scientific literature hints at a disproportionate effect of the consequences of climate change on the lives of children, women and people with disabilities. In Bhutan, the rural population still use environment as a source of daily necessities, such as firewood, water, fodder, etc. Bhutanese women are found to be overburdened with responsibilities of carrying out household work related to water, sanitation and hygiene.[30] The effect of climate change may further exacerbate the plight of women and girls in terms of having to bear additional weights of household duties as a result of climate change-induced natural disasters.

1.6 Existing barriers to programming WASH in HCFs

The piloting of Water and Sanitation for Health Facility Improvement Tool[xv] (WASH FIT) in Punakha (2019) exposed several shortcomings that exist while managing WASH in HCFs. Most local government leaders believed that HCFs within their administrative jurisdictions still belonged to the health sector of the central government. This perception has led to an ownership issue among the local leaders, and a situation where HCFs in communities do not receive adequate priority and resources to address the issues or gaps affecting WASH services. There was only limited understanding about the benefits of having improved WASH services in HCFs among the decision makers at the district and community levels. Further, HCFs

[xv] WASH FIT is a tool developed by the WHO and UNICEF for health care facility managers and staff, and relevant agencies outside the health facility, to assess WASH in HCFs for making necessary improvements, and sustaining quality WASH infrastructure and services.

lacked standard monitoring and reporting framework.[31]Thus, there certainly are barriers, be it programmatic or service delivery, at the national and sub-national levels critically undermining the efficient programming and scaling up[xvi] of WinHCF, the significant ones of which are described below:

- ***No lead agency for WinHCF programme:*** There is no lead agency or national coordination body/task force to coordinate, organize and monitor the WinHCF programme at the national level. Currently, it is being managed as a part of the Rural Sanitation and Hygiene Programme (RSAHP) under Public Health Engineering Division, Ministry of Health. Therefore, it is not receiving sufficient attention from decision makers as it would have as an independent programme. Consequently, most of the WASH activities are left in the hands of individual health care facilities and district or local administrations to manage with no limited guidance, technical support and supervision from the Ministry of Health.

- ***Gaps in WASH facilities:*** HCFs lack fully functioning and safely managed WASH services. A significant proportion of HCFs experience a disruption in water supply as they lack their own water sources, and are susceptible to water shortages due to seasonal changes. Some HCFs have to deal with water supply disruptions throughout the year. Consequently, not having a running water in toilets and at points of care (e.g. consultation and delivery rooms) is a constant nagging issue in hospitals and primary health centres. Similarly, poorly maintained toilets, which are most often not suitable for use, is a major challenge that HCFs face today. And, not every health care facility has a steady supply of soap and water, or alcohol-based hand rub near the toilets. Furthermore, the existing sanitation infrastructure rarely have toilets with provisions to accommodate the needs of persons with disabilities, women/girls who require to manage menstrual hygiene, and other vulnerable population.

- ***Limited financial resource for WinHCF:*** Most HCFs, particularly primary health centres, lack funds to invest in improving WASH services, and maintaining WASH infrastructure. Both national and sub-national health sector budgets rarely include WinHCF component. Even though budgeting tasks are decentralized to districts and local authorities, funds for health sector are mostly diverted to disease-specific programme activities and rural water supply and sanitation schemes.

- ***Inadequate capacity:*** HCFs still have some health care workers who are not trained in infection control as per the standards, and cleaners who lack capacity to work in accordance to the environmental cleaning protocols. Due to the shortage of trained staff in many HCFs, managing and sustaining WASH services are challenging.

[xvi] Some activities such as WASH FIT are on-going.

- ***Limited community participation in decision making:*** Currently, community's engagement in the activities of HCFs is limited to maintaining shared water sources, participating in health promotion activities and availing health care services. But, they hardly take part in decision making processes of HCFs. It is either HCFs themselves, or the district health sector make decisions on WinHCF with no or minimal role of communities. Such limited participation of communities in the management of HCFs may adversely affect the efficient and responsible functioning of HCFs and delivery of quality care.

- ***Scarcity of WinHCF data and poor monitoring:*** There are no indicators on WinHCF in the routine health management information system at present. The district/national level are not able to generate reliable data and indicators related to WinHCF. Only sources of data are from facility assessment reports, which are produced only periodically. Thus, the lack of comprehensive information system and appropriate tools for obtaining WinHCF data renders programme monitoring difficult and ineffective. However, the database of 154 countries, including Bhutan, maintained by the WHO/UNICEF Joint Monitoring Programme (JMP),[32] is a good source of data and information, which can be used for monitoring purpose.

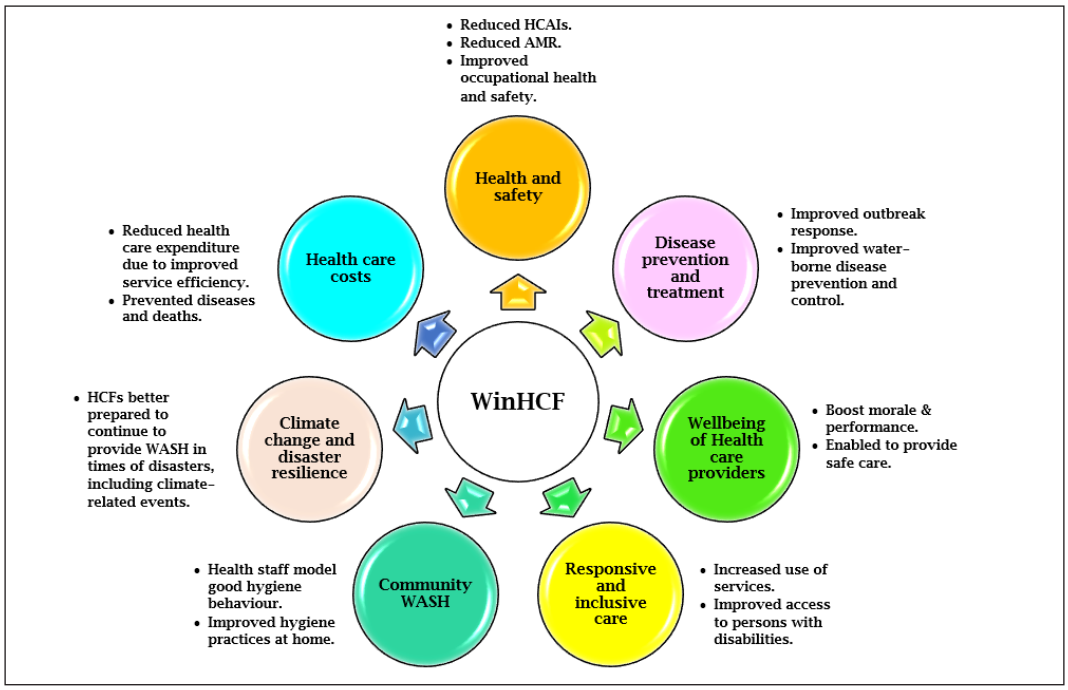
1.7 Rationale of WASH in health care facilities

The current COVID-19 pandemic has brought to the fore the overriding importance and value of having WASH in HFCs[xvii], and is being emphasized ever more now than any time in the past. The scope of WASH in HCFs now extends beyond its conventional domains by including components such as biomedical waste management, infection prevention and control interventions and environmental hygiene.[33] WASH is today globally identified, understood and accepted as a vital component of COVID-19 response and recovery. Unarguably, any health infrastructure without WASH components cannot be labelled and function as a health care facility.[34] There is a wider consensus among the international community on the need to step up resources, and scale up strategies to increase coverage and quality of WASH in HCFs.[35]

Scientific literature reveal that ensuring safe water, functioning latrines, adequate hand washing facilities, and good hygiene practices improve many health outcomes, especially those related to newborn, maternal and child health, health care associated infections and antimicrobial resistance. Benefits of WinHCF also include strengthening the capacity of health care systems to respond to outbreaks and emergencies.

[xvii] 'WASH in HCF' refers to the provision of water, sanitation, hygiene, environmental cleaning and health care waste services in all levels of HCFs (sub-posts, satellite clinics, primary health centres, district hospitals, regional and national referral hospitals).

Figure 1: Benefits of improved WASH in health care facilities (WinHCF)



Source: Adopted from WHO/UNICEF model[36]

Despite the expansion of the health care infrastructure in Bhutan, and a remarkable progress made in achieving important health indicators in the last two decades, the policy and programme considerations related to WASH in HCFs had lagged behind.[37] This was, partly, due to the government's single-minded focus on improving an access of WASH services to the population at the household level. Even though an area-wide-coverage approach was followed, the inclusion of HCFs in any plans and strategies was rarely carried out. However, over the past few years, the model of WASH in HCFs has emerged worldwide attracting much attentions and support of the global community and governments. It has become an essential medium for providing quality health care, and a prerequisite for infection prevention and control. It is also a critical element for a number of health goals, including those linked to universal health coverage (UHC), infection prevention and control (IPC), and child and maternal health.

The Royal Government of Bhutan has committed to enhance a universal access to water and sanitation in institutions, including in health care facilities.[38, 39] WASH in HCFs is now identified as a new area of focus that will directly contribute to the achievement of the SDGs for the maternal and newborn health, and the universal, equitable access to safe and affordable drinking water, sanitation and hygiene services and practices (SDG targets 6.1 and 6.2). WASH in HCFs is, today, part of the government's commitment to attaining universal access in all settings by 2030.

II. PROGRAMME PRIORITIES AND POLICY SUPPORT

2.1 Priorities for WASH in HCFs

- ***Improve WASH facilities and services:*** Invest in WASH infrastructure development and operations as part of wider health systems strengthening efforts supported by the implementation of national policies, programmes and standards. This will facilitate HCFs in providing safe, effective, equitable and people-centered WASH services.

- ***Institutionalize WinHCF:*** Integrate WASH components into regular health sector planning and budgeting processes for scaling up investments in formulating and implementing WinHCF interventions, and the inclusion of WASH activities in routine HCF management with a meaningful engagement of community members so as to enable HCFs in sustaining quality WASH services. Embedding WASH data and Health Management and Information System (HMIS) will strengthen WASH monitoring mechanisms and reporting frameworks.

- ***Develop capacity of Health workforce and community through WASH FIT:*** WASH FIT will develop the capacity of health care workers, non-clinical staff, stakeholders, local leaders, and communities on WASH FIT, and infection prevention and control practices and for monitoring WASH services and practices. This can support the implementation of WinHCF strategic action plans at national and sub-national levels. The well-equipped health workforce and communities will help institutionalize and mainstream WinHCF strategies into national health systems and services.

- ***WASH for infection prevention and control:*** Focus on improving WASH to promote infection prevention and control (IPC) in HCFs, and stop HCAIs and AMR, which are important causes of maternal, newborn and child deaths. Provision of adequate and quality WASH services will help reduce risks of infections and deaths in HCFs.

- ***WASH services and practices:*** Develop and implement a comprehensive monitoring system, tools and capacity of health workforce to assess, analyze and synthesize WASH data for regularly reviewing the progress made, and continuing to improve WASH services and practices through evidence-based decision-making and planning procedures for WinHCF.

2.2 Policy support

A number of overarching polices/laws[xviii] in Bhutan, closely guided by the philosophy of Gross National Happiness, provide a fitting platform to the MoH and its partners to act mutually, enhance partnerships, and enforce coordinated efforts to successfully implement the strategies on WASH in HCFs. The following are some sector-specific policies/laws/guidelines that will directly or indirectly influence, enable and support the rolling out of the WinHCF action plans within and beyond the current 12th Five Year Plan period (2018-2023):

Table 1: Sectoral polices/laws in Bhutan relevant to WASH in HCFs

Policies/Laws	Description	Supportive of WinHCF
Constitution of the Kingdom of Bhutan	It obliges the government agencies to ensure a safe and healthy environment for Bhutanese citizens.	Upholds the need to protect environment, and provide a healthy living environment.
Gross National Happiness (GNH)	GNH is the guiding principle of Bhutan's developmental approach. It has nine domains, including health, environment and education.	WASH is under the domain of living standard (housing) and is monitored as part of the national surveys.
National Health Policy, 2011	It aspires to guide government sectors to achieve national health goals through the provision of quality health services.	Promotes a universal access to safe drinking water and sanitation facilities.
National Sanitation and Hygiene Policy 2020	It provides a visionary pathway for Bhutan to achieve universal coverage for and access to sustainable sanitation and hygiene services.	Encourages the exploration of appropriate technologies for sanitation, and inclusion of behavior change communication approaches for sustained hygiene practices.
Water Act of Bhutan, 2011	It ensures to protect, conserve, and manage water resources in an economically efficient, socially equitable and environmentally sustainable manner.	Emphasizes the allocation of water resources to drinking and sanitation purposes as the highest priority.

[xviii] In the context of this document, policies/laws are any national legal provisions, broadly including legislations, standards and guidelines, which are directly or indirectly influencing the development and delivery of WASH facilities and services.

Bhutan Water Policy, 2007	It protects the right of every individual to safe, affordable and sufficient quantity of water for personal consumption and sanitation.	Directs the government to provide universal access to safe drinking water and sanitation.
National Environment Protection Act, 2007	It reinforces the fundamental right of an individual to a safe and healthy environment.	WASH to be an integral link to the conservation of environment.
Waste Prevention and Management Act 2009	It entrusts responsibilities on national and sub-national authorities to manage human waste.	Empowers thromde, dzongkhag tshogdu and gewog tshogde to regulate and implement improved sanitation practices within their jurisdiction.
National Guideline on Infection Control and Medical Waste Management	It mandates authorities and HCFs to properly segregate, manage, handle and dispose medical waste.	Provides guidance to HCFs in managing medical waste, and reaffirms the need to have a continued supply of water to prevent and control HCAIs.
Health infrastructure guideline, 2020 (Draft)	It details the requirements for WASH and waste management in health care settings, including provisions for people with disabilities.	Provides guidance on water treatment plants, sewage treatment plant, waste-shed construction, burial pit and concrete pit for waste traps.
Local Government Act of Bhutan, 2009	It decentralizes responsibilities of delivering WASH services, and promoting public health.	Grants municipal, district and local authorities with regulatory powers and obligations to protect health, safety and wellbeing of the people within their administrative geographical boundaries.
Bhutan Building Regulation, 2018	Sets guidelines on WASH and waste management infrastructure in both urban and rural areas.	Requires every dwelling infrastructure to have WASH facilities.
Bhutan Building Code, 2018	It mandates infrastructures be constructed with appropriate materials, and are safe, functional, accessible and inclusive.	Hinges on the quality aspects of infrastructures, including those of WASH facilities.

National policy for persons with disabilities, 2019	It stipulates the need for the MoH to improve access to all health care infrastructure and services for persons with disabilities.	Requires the existing infrastructure to adjust, and the new ones to adopt universal designs so as to accommodate persons with disabilities.
Guideline for Differently-Abled Friendly Construction, 2017	It provides guidance on the designing and construction of a barrier-free built environment.	Requires all structures to consider the needs of persons with disabilities, covering both new and retrofit constructions.

III. PURPOSE AND SCOPE OF NATIONAL STRATEGY

3.1 Vision, objective and strategic pathway

Much in line with the national priorities, and in response to the gaps and needs identified, the national strategy for WinHCF will provide strategic directions and a responsive pathway to the Ministry of Health and its partner agencies, including development partners, civil society organizations, district and local authorities, and communities, for strengthening and scaling up of WASH services in HCFs by coordinating efforts, collaborating intersectoral activities and jointly mobilizing resources for WASH. In addition, it is a precondition to have this strategic plan in place to help deliver standardized and effective WASH services in HCFs, and realize the targets of universal basic coverage of WinHCF by 2030, and contribute to the fulfilment of the universal health coverage and health-related Sustainable Development goals set for Bhutan.

Vision

Safe and quality health care for every Bhutanese through establishment of WASH in all health care facilities.

Mission

Universal access to WASH services and practices of highest standards.

Objective

The primary aim of the national strategy is to institutionalize and standardize WASH services and practices in every health care facility.

National target

By 2030, 100% coverage of HCFs in every setting with quality WASH services, which are equitably accessible to all, including children, women and persons with disabilities.

Key intended beneficiaries

This strategy will cover all levels of health care facilities, and benefit all within and outside the health care environment.

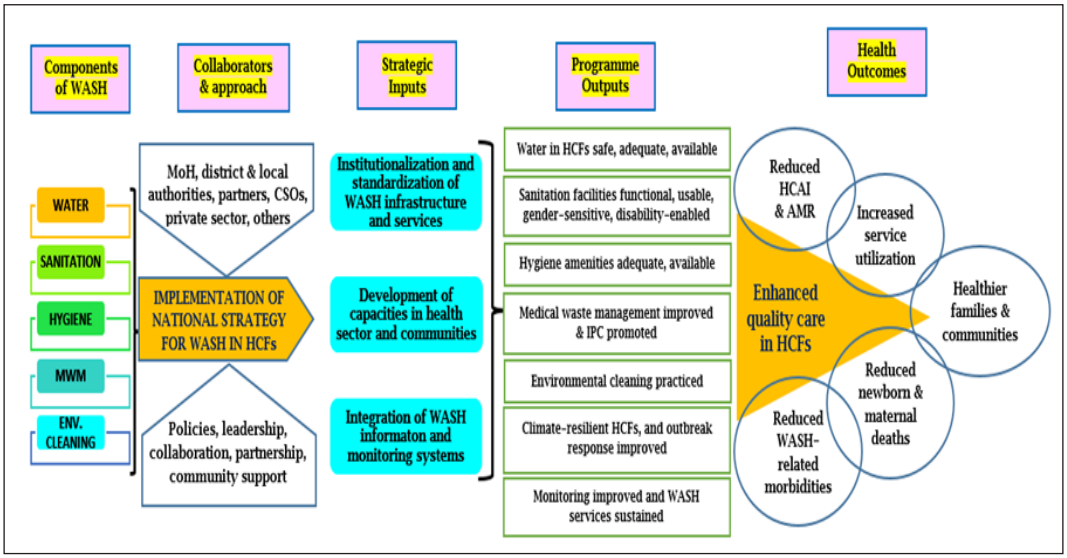
Table 2: Key intended beneficiaries

Inclusion of HCFs	Beneficiaries
• National referral hospital • Regional referral hospitals • District hospitals (20 beds & above) • Hospitals (10 beds) • Primary Health Centres (BHU-II) • Sub-post	• All health care providers • Patients, attendants, visitors • Non-clinical staff • Community members

3.2 Strategic pathway to programming WASH in HCFs

The overall development of the strategy was broadly guided by the strategic documents and reports on WASH published by the WHO and UNICEF.[3, 25, 40-42] The current strategy had been drawn out by holding extensive consultations and review meetings with the participation of all stakeholders, including local government officials, development partners, civil society organizations and district health sector. The strategic pathway (Figure 2) describes the framework of WASH programme strategies, approaches, and their intricate linkages holistically aimed at contributing to the long-term health outcomes and goals of the health sector.

Figure 2: Strategic pathway to WinHCF programming



3.3 Strategic approach

Broadly in line with the government's 12th FYP[43] principles and structure of programme implementation, the Ministry of Health along with its WinHCF stakeholders, partner agencies and communities will adopt the following approaches with the intention of steering efficiently the rolling out of the strategy as well as the scaling up of the WinHCF interventions for the best WASH outcomes:

- ***Leadership:*** The Ministry of Health will create enabling environments for the WASH implementing partners and agencies at all levels to work together, coordinate and collaborate by setting up institutional arrangements, ensuring robust financing mechanisms, leveraging resources, and fostering partnerships.

- ***Partner engagement:*** The Ministry of Health will actively engage existing development partners (WHO, UNICEF, SNV), and explore potential new partners (ADB, World Bank, USAID, GCF, etc.) to help technically and financially execute, accelerate and scale up the WinHCF programme strategies and actions plans.

- ***Community empowerment:*** Community members will receive WinHCF information, knowledge, skills and tools so that they are empowered to actively take part in programming, implementing and monitoring WASH services. They will also be the advocates for promoting good hygiene practices at homes.

3.4 Guiding principles

A set of principles will guide the Ministry of Health and its partners in effectively implementing the national strategy, and help realize the national goal of universal access to WASH services pertaining to coverage and quality care.

Table 3: Guiding principles

Availability	*Ensure HCFs have a sufficient quantity of functioning WASH infrastructure, and are delivering quality services.*
Accessibility	*Ensure population, health care workers and other users have an easy (mainly physical and financial) access to WASH services, including information and health education, in a manner that is unbiased and non-discriminatory.*
Acceptability	*Ensure WASH infrastructure and services are people-centric, bearing the core features of inclusivity and responsiveness, geared towards catering to the specific needs of diverse groups of a population, and in accordance to the international human rights and ethical health practices.*
Quality	*Ensure WASH facilities and services meet the national standards, and fulfil the expectations of the users, in terms of assuring them safety, effectiveness, timeliness, and in addressing their needs.*
Responsibility	*Ensure involvements of stakeholders, relevant agencies and individuals at organizational, institutional and community levels in planning, implementing and monitoring interventions for WinHCF.*
Accountability	*Ensure the practice of good governance while managing WinHCF resources, including human, financial and institutional resources, so that efforts to scale up and sustain WASH services are not undermined.*
Sustainability	*Ensure the provision of WASH services is sustained by integrating WASH into routine health systems management, and building capacities of HCFs, which are responsive, inclusive and resilient to climate-induced adverse events.*

IV. NATIONAL STRATEGIC PLAN OF ACTION

This national strategy will provide strategic directions and guidance to the Ministry of Health and its partners to synergistically coordinate, collaborate and work towards attaining universal access to and coverage of WASH services by rolling out its comprehensively captured and prioritized action plans and activities on WASH in HCFs. The strategy document broadly focusses on three strategic areas – (i) institutionalization of WASH services in HCFs, (ii) development of the capacities of health care workers and communities, and (iii) strengthening of monitoring mechanisms for WASH.

The government's current 12th Five Year Plan (FYP) that commenced in 2019 will end in 2023. Since the first two years of the WASH strategy (2021-2030) overlap with the last years of the 12th FYP, the implementation period of the strategy is split into two phases. The first phase (2021-2023), covering much of the strategies and key activities contained in the strategy document, comprises an important package of critical actions that the Ministry of Health will implement with immediate effect, whereby the targets set are to be accomplished within this FYP period. Post-12th FYP, both new and carried-forward activities from the phase one will be executed in the second phase (2024-2030) aiming at contributing to the realization of long term national priorities and SDGs by 2030. However, both the phases are placed under the broad and generic strategic objectives keeping in mind the possibilities of the national strategy undergoing intermittent reviews, and updating with changes and adjustments in response to the evolving health needs and circumstances of the country in due course of its implementation. This will also allow the strategy document to stay relevant, dynamic, responsive and accountable.

Strategic objective 1: increase equitable access to quality wash services, and improve medical waste management and environmental cleaning in health care facilities.

HCFs that lack WASH services will undermine their ability to deliver safe and quality health care. On the other hand, improving WASH in HCFs will prevent and control infections, reduce preventable deaths, boost health care provider's motivation to serve better, bring greater satisfaction among the service users, and eventually increase the utilization of health services. With progressive leadership, commitments, efforts and resources drawn together from all quarters of WASH sector, partners and communities, investments in WASH in HCFs will help Bhutan attain its goal of universal access to WASH, and a number of health-related SDGs, specifically, SDG targets 6.1 (drinking water) and 6.2 (sanitation and hygiene).

<u>The SO-1 will contribute to the following health outcomes:</u>

- Improved access to safe, reliable and functional WASH facilities and services.
- Reduced cases/prevalence of HCAIs, AMR and preventable deaths.

- Improved satisfaction and morale among health care providers, and enhanced ability to provide safe and quality care.
- Empowered and resilient HCFs in providing WASH services during climate change-related events.

Table 3: Programme outcome indicators⋆ and targets, to be achieved by 2030

Outcome indicators[xix]	National target
Proportion of HCFs with safe, and adequate supply of water from an improved source, which is located on premises.	60% by 2023, 100% by 2030
Proportion of HCFs with improved and usable sanitation infrastructure, which are designed to have separate toilets for staff, women along with menstrual hygiene amenities, and users with limited mobility.	80% by 2023, 100% by 2030
Proportion of HCFs with functional hand hygiene amenities available at points of care wherever they are necessary, and within 5 metres of toilets.	100% by 2023
Proportion of HCFs that safely segregate, treat and dispose of medical wastes, including sharps and infectious wastes.	80% by 2023, 100% by 2030
Proportion of HCFs with protocols for cleaning in place, and staff trained on cleaning procedures.	100% by 2025

⋆Adapted from: Core questions and indicators for monitoring WASH in HCFs in the SDGs. [44]

Strategy 1.1: Establish safe, adequate, accessible and inclusive WASH services in all HCFs through investments in and standardization of WASH infrastructure ensuring the provision of quality care and safe environment to health care service users and providers, and the inclusion of considerations for sex-segregated and disability-enabled toilets.

Output indicator for S1.1:	*Number of HCFs that implemented the national WASH standards.* *Target: 200 HCFs per year*

Major activities for 2021-2023:

i. Develop[xx] and implement the national standards on WASH infrastructure and services in all HCFs across the country.

[xix] See annex (a) for operational definitions of terms or phrases used to describe indicators.

[xx] The national WASH standard is in a draft stage at present.

ii. Develop SOPs for WASH infrastructure designs with provisions for a separate toilet for a man and woman, and an accessible toilet for people with restricted mobility.

iii. Establish a technical working group to guide and facilitate the implementation of WASH strategic plans.

iv. Institute a mechanism to periodically conduct water quality testing as per the RCDC[xxi] requirements and implement remedial measures.

v. Establish a separate programme for WASH at DoPH, MoH to lead and manage the WinHCF programme efficiently and effectively.

Major activities for 2024-2030:

i. Rehabilitate the existing WASH infrastructure in HCFs as per the national WASH standards and guidelines.

ii. Explore alternative water sources and reuse methods for HCFs in water-stressed areas by using cost-effective and innovative technologies.

Strategy 1.2: Integrate components of WASH policies, programmes and services into the mainstream health systems development, including health sector planning and budgeting, to sustain WASH services.

Output indicator for S1.2:	*WASH is integrated into the health systems development: Health sector planning – Yes/No; (b) Budgeting – Yes/No*
	Number of HCFs that integrated WASH into DHIS2 Target: 200 HCFs per year
	Number of districts who are using and implementing WASH FIT. Target: 20 districts by 2023

Major activities for 2021-2023:

i. Coordinate with the Policy and Planning Division (PPD, MoH), and establish mechanisms within the sphere of health systems strengthening/universal health coverage to integrate the components of WASH into regular health sector planning and budgeting processes to advance and scale up WASH interventions.

ii. Establish district and gewog level WinHCF coordination committees to help coordinate and expedite the integration of WASH infrastructure and services into local level planning and budgeting processes.

[xxi] Royal Centre for Disease Control, MoH

iii. Explore avenues for slotting WinHCF into existing district and gewog level multi-sectoral structures and frameworks.

iv. Develop and implement WASH FIT with budget provisions for WASH infrastructures and services in all HCFs.

v. Scale up WASH FIT to all 20 districts by 2023 and enable HCFs to develop and implement plans for continuous improvements of WASH services.

Strategy 1.3: Collaborate with the relevant health programmes and HCFs to set WASH services as an entry point to strengthen the medical waste management (MWM), and infection prevention and control (IPC) initiatives in HCFs.

Output indicator for S1.3:	*Number of HCFs strengthened MWM with WASH components. Target: 50-100 HCFs per year.*
	Number of HCFs implementing IPC initiatives. Hand hygiene training? Infrastructure? Monitoring? Target: 50-100 HCFs per year.

Major activities for 2021-2023:

i. Incorporate components of WASH into the national guideline on infection control and medical waste management.

ii. Conduct jointly the trainings of health care workers and other health facility staff on good WASH, IPC and MWM practices, including safe hand hygiene.

iii. Develop IEC materials on WASH and IPC focusing on changing behaviors of health care workers and non-health staff.

Strategy 1.4: Strengthen and implement environmental cleaning protocols in all HCFs ensuring clean and safe health facility environment is maintained at all times.

Output indicator for S1.4:	*Number of HCFs with environmental cleaning protocol in place, and cleaning staff trained. Target: 200 HCFs per year*

Major activities for 2021-2023:

i. Collaborate and initiate the environmental cleaning protocols in all HCFs.

ii. Build capacity of health care providers and non-health personnel (cleaners and waste handlers) on installation of hand hygiene stations, colored waste bins, and maintaining facility hygiene.

iii. Pilot and scale up 'clean and safe HCF initiative'.

Strategy 1.5: Boost resources for WASH/IPC/MWM services by pegging WASH agenda with related programmes, such as the COVID-19 response and recovery and environmental health programme, and advocating for support in the provision of a safe and sound environment to health care workers, non-clinical staff, patients and communities.

Output indicator for S1.5:	*Resources for WASH have been mobilized from other programmes. Yes/No*

Major activities for 2021-2023:

i. Mobilize technical and financial resources from the COVID-19 response and recovery programme and Green Climate Fund to support WASH/IPC/MWM activities as part of the MoH's resource mobilization efforts.

ii. Advocate and mobilize additional resources to increase on-site waste treatment capacity of HCFs to carry out safe disposal of wastes generated by the consumption of health products (PPE), sanitization/cleaning products, diagnostic and laboratory testing materials, etc. during and after COVID-19 pandemic.

iii. Promote 'Hand Hygiene for All Global Initiative' to prevent, control and stop the spread of COVID-19 in HCFs.

Strategy 1.6: Strengthen coordination, collaboration and partnership with government agencies, local government, development partners, academic institutions, civil society organizations, private sector, media, communities and other relevant stakeholders in scaling up and improving WASH services.

Output indicator for S1.6:	*Number of advocacy meetings, trainings, workshops, follow up/ action conducted jointly with stakeholders at national and sub-national levels.* *Target: 5 per year*

Major activities for 2021-2023:

i. Collaborate, coordinate and conduct advocacy meetings/workshops with the key players and partners of WASH at the national and sub-national levels.

ii. Collaborate, coordinate and involve institutions, civil society organizations, private sector and local government in organizing WASH-related workshops and trainings.

iii. Collaborate with local media agencies to disseminate IEC materials on WASH, and support in creating awareness among the general public.

iv. Engage development partners and other government agencies in raising the issues of WASH services at national and international platforms.

Strategic objective 2: develop capacities of health workforce and communities to promote and sustain wash services and practices.

All those involved in WASH require capacity to maintain and sustain WASH services in HCFs. Health sector, supported by well-informed decision-makers and planners, and equipped with well-trained health care providers and communities, is always in a good position to address WASH issues and challenges faced by HCFs. Developing and implementing pre-service and in-service training modules on WASH/MWM/IPC/WASH FIT will help build the required competencies in health care providers, health facility cleaners, medical waste handlers, and community members, and facilitate in scaling up and sustaining WASH services.

The SO-2 will contribute to the following health outcomes:

- Standardized and sustained the availability of WASH services.
- Averted morbidities and mortalities due to HCAIs.

Table 4: Programme outcome indicators and targets, to be achieved by 2030

Outcome indicators	National target
No of HCFs with dedicated WASH and/ or IPC focal points who are trained and able to deliver quality services.	100% by 2023
Proportion of communities empowered to support HCFs in WASH.	100% by 2023

Strategy 2.1: Incorporate WASH and IPC standards and guidelines into pre-service curricula and in-service training modules.

Output indicator for S2.1:	*WASH/IPC/MWM standards and guideline integrated into the training modules and curricula. Target: Yes/No*

Major activities for 2021-2023:

i. Collaborate with Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB), and include standards/guidelines on WASH/IPC/MWM in the curricula of nursing, Health Assistant, public health and traditional medicine courses.

ii. Develop a training module on WASH, and integrate it into the training packages of relevant public health and medical service programmes.

Strategy 2.2: Build capacities of health care workers and key community members on WASH/IPC/MWM/environmental cleaning tools and standards to maintain well-functioning and climate-resilient WASH infrastructure.

Output indicator for S2.2:	Number of HCFs trained on WASH-related standards and guidelines. Target: 200 HCFs per year.
	Number of communities trained on WASH-related standards and guidelines. Target: 20 communities per year.

Major activities for 2021-2023:

i. Conduct training of trainers (ToT) on WASH FIT for relevant health professionals.

ii. Provide trainings to health staff in dzongkhags and gewogs on HCF Conditions Assessment, WASH FIT tools and WASH standards.

iii. Train professionals in HCFs and communities responsible for WASH to recognize and respond to specific needs of people with disabilities, women and girls, and vulnerable population.

iv. Advocate for political commitment and resource mobilization among policy makers, LG officials, and sectoral leaders for making investments in WinHCF interventions.

v. Train HCF staff and community members on operation and maintenance of WASH infrastructure.

vi. Build capacity of health care providers and other relevant HCF staff on data collection and thematic analysis in order to update WASH data in DHIS2, and keep track of the progress in WASH implementation, and support improvement plans.

vii. Sensitize local government officials and community leaders on the importance of WinHCF and their roles in supporting this programme.

Strategic objective 3: review and monitor regularly the progress made in wash indicators to incrementally improve wash services and practices.

Instituting a robust and integrated monitoring system for tracking progress in WASH indicators will enhance the prioritization, programming, planning and budgeting processes for WASH interventions at the central, district and local government levels. The data and evidence, generated through information and monitoring systems and research, will be a strong basis for the WASH programme to assert its influence on policy makers and partners

alike to draw more attention to mobilizing resources and political support for backing WASH activities and improvement plans.

The SO-3 will contribute to the following health outcomes:

- Integrated WASH data into HMIS, and strengthened monitoring.
- Supported science-based and responsive programming for WASH.

Table 5: Programme outcome indicators and targets, to be achieved by 2030

Outcome indicators	National target
Proportion of HCFs using data from the integrated information and monitoring systems for evidence-based WASH programming and effective resource mobilization and allocation.	100% by 2023

Strategy 3.1: Incorporate WASH indicators into the health management information system, and monitoring framework, and generate disaggregated and reliable data for prioritizing resources and evidence-based WASH programming.

Output indicator for S3.1:	*Number of HCFs that integrated WASH data into DHIS2/ HMIS Target: 200 HCFs per year.*
	Disaggregated data on WASH generated and used. Target: Yes/No

Major activities for 2021-2023:

i. Advocate and garner support for the integration of WASH data and indicators into the national information and monitoring systems and DHIS2.

ii. Develop a harmonized WASH database for the HCFs and integrate it into the DHIS2/ HMIS and District Health officials to collate with HCFs and share data with the national level for data analysis and dissemination.

iii. Promote the use of WASH data and build a compelling case for resource allocation and advancing WASH programming at the district and gewog levels.

Major activities for 2024-2030:

i. Enhance monitoring of WASH implementation through tracking data generated by the HMIS and DHIS2.

ii. Develop a dashboard/app and carry out GIS mapping to track WASH indicators at facility, district and central levels.

Strategy 3.2: Evaluate the effects of WASH interventions in HCFs on health programmes and outcomes, including maternal and child health, HCAI and AMR.

Output indicator for S3.2:	*Number of operational research and situation analysis conducted on WASH.* *Target: At least 5 during 2021-2030.*
	Programme impact evaluation conducted. *Target: Yes/No*

Major activities for 2021-2023:

i. Conduct operational research on WASH services, and use the findings to improve programme efficiency, effectiveness, and inter-sectoral coordination efforts.

Major activities for 2024-2030:

i. Study the impact of WASH/IPC/Environmental cleaning services on reducing HCAI, AMR, newborn and maternal morbidities, and satisfactions of service users, health care providers and communities.

ii. Conduct midterm review in 2025, and final WASH programme evaluation in 2030.

V. RESULT FRAMEWORK

The strategy is closely aligned with the priorities of the government's 12th Five Year Plan (2018-2023), and the Sustainable Development Goals. This result framework will help support the tracking of the progress made on WinHCF, and strengthening the monitoring efforts. The structure of indicators is comparable to the format of JMP, which will help link Bhutan's status to the WASH-related SDGs.

Outcomes of the National Strategy for WASH in HCFs will significantly contribute to the achievement of the national priorities and global goals.

National Key Result Area (NKRA) of 12th FYP, 2018-2023:

- *Sustainable water (NKRA 17)*
- *Healthy and caring society enhanced (NKRA 14)*
- *Gender equality promoted and women and girls empowered (NKRA 10)*

Sustainable Development Goals (2015-2030):

- *Ensure availability and sustainable management of water and sanitation for all (SDG 6).*
  - √ *6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all.*
  - √ *6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.*
- *Ensure healthy lives and promote well-being for all at all ages (SDG 3)*

Strategic outcome indicators	Programme output indicators	Data source
1: Health care providers, service users and communities have universal access to quality WASH services. *WASH infrastructure and services standardized and institutionalized in HCFs.* Outcome indicators, to be achieved by 2023: a) 100% HCFs with improved MWM/IPC. b) 100% HCFs environmental cleaning practiced. Outcome indicators, to be achieved by 2030: c) 100% HCFs with WASH services.	• *Number of HCFs implemented national WASH standards.* Target: 200 HCFs per year. • Number of HCFs integrated WASH Target: 200 HCFs per year. • *Number of HCFs improved MWM/IPC* Target: 50-100 HCFs per year. • *Number of HCFs practiced environmental cleaning.* Target: 200 HCFs per year. • Number of joint activities with partners and stakeholders. Target: 5 per year.	Outcome indicators • Facility surveys • HMIS/DHIS • JMP Output indicators • Annual HH survey • Programme reports

2. Quality WASH services and practices sustained through capacity building. *Health workforce and communities empowered and enabled to sustain WASH services and practices.* Outcome indicators, to be achieved by 2023: 100% health workforce relevant to WASH built competencies. 100% community members engaged in WASH trained and well-informed.	• *Number of HCFs trained on national WASH standards/guidelines.* Target: 200 HCFs per year. • *Number of communities trained on WASH tools, standards, guidelines.* Target: 20 HCFs per year.	Outcome indicators • HMIS/DHIS Output indicators • Programme reports
3. Monitoring mechanisms strengthened and WASH services improved. *WASH indicators integrated into mainstream monitoring system, and data generated for evidence-based WASH programming and incremental improvement plans.* Outcome indicators, to be achieved by 2023: a) 100% HCFs generated data from information and monitoring systems, and used for programme improvement.	• *Number of HCFs integrated WASH data into DHIS/HMIS.* Target: 200 HCFs per year. • *Number of facility assessments/ operational research.* Target: At least 5 by 2030.	Outcome indicators • HMIS/DHIS • Programme reports Output indicators • Programme data and reports

VI. PROGRAMME IMPLEMENTATION FRAMEWORK

This implementation framework guides the course of actions, defines the timeframe, and identifies collaborating partners as the national strategy rolls out its programme activities from 2021.

Strategic actions	Major activities	Timeline			Collaborating partners/ agencies
		2021-2022	2023-2024	2025-2030	
Strategic Objective 1: Increase equitable access to quality WASH services, and improve health care waste management and environment cleaning in health care facilities.					
Strategy 1.1: Establish safe, adequate, accessible and inclusive WASH services in all HCFs through investments in and standardization of WASH infrastructure ensuring the provision of quality care and safe environment to health care service users and providers, and the inclusion of considerations for sex-segregated and disability-enabled toilets.	Implement the national WASH standards in all HCFs.	X		X	HIDD (MoH) PHED (MoH), PPD (MoH), RCDC (MoH) JDWNRH, MRRH, CRRH, District Health Sector, Local Government, CSOs, Private sector, SNV, WHO & UNICEF
	Develop SOPs for WASH infrastructure designs.	X	X		
	Rehabilitate the existing WASH infrastructure.		X		
	Explore alternative water sources in water-stressed areas.			X	
	Institute a mechanism to periodically conduct water quality testing.		X	X	
	Establish a technical working group for WASH in HCFs.	X			
	Establish a separate unit for WASH at DoPH, MoH.		X		

Strategy 1.2: Integrate components of WASH policies, programmes and services into the mainstream health systems development, including health sector planning and budgeting, to sustain WASH services.	Coordinate with PPD, MoH, and integrate WASH into health sector planning and budgeting processes.	X			GNHC, PPD (MoH), District Health Sector
	Establish district and gewog level WinHCF coordination committees.	X			
	Integrate WASH in existing district and gewog level structures.	X			
	Develop and implement an operation and maintenance plan.	X		X	
	Scale up WASH FIT in all districts.	X	X		
Strategy 1.3: Collaborate with health programmes and HCFs to set WASH services as an entry point to strengthen the MWM, and IPC initiatives in HCFs.	Incorporate WASH into the national guideline on infection control and medical waste management.		X		Infection Prevention and Control Programme (DMS), Hospitals and PHCs
	Conduct joint trainings on good WASH, IPC practices, and safe hand hygiene.		X	X	
	Develop IEC materials on WASH and IPC focusing on changing behaviors.	X	X	X	
Strategy 1.4: Strengthen and implement environmental cleaning protocols in all HCFs ensuring clean and safe health facility environment is maintained at all times.	Enforce environmental cleaning protocols in all HCFs.		X	X	All hospitals and Primary Health Centres
	Build capacity of health care and non-health personnel on cleaning protocol.		X		
	Pilot and scale up 'clean and safe HCF initiative'.		X	X	

Strategy 1.5: Boost resources for WASH/IPC/MWM services by pegging WASH agenda with related programmes, such as the COVID-19 response and recovery and environmental health programme, and advocating for support in the provision of a safe and sound environment to health care workers, non-clinical staff, patients and communities.	Mobilize technical and financial resources to support WASH/IPC/MWM activities.	X			PPD (MoH), PHED (MoH), DMS (MoH), Development partners
	Promote 'Hand Hygiene for All Global Initiative' to prevent, control and stop the spread of COVID-19.	X			
	Increase the waste treatment capacity of HCFs to safely dispose wastes from health products during and after the COVID-19 pandemic.	X	X		
Strategy 1.6: Strengthen coordination, collaboration and partnership with government agencies, local government, development partners, academic institutions, civil society organizations, private sector, media, communities and other relevant stakeholders in scaling up and improving WASH services.	Conduct advocacy meetings with the key players and partners of WASH.	X	X	B	Government agencies, Local Government, Development partners, KGUMSB, CSOs, SNV, Private sector, media, communities
	Involve institutions, civil society organizations, private sector and local government in organizing WASH-related workshops and trainings.	X	X	X	
	Collaborate with local media agencies to disseminate IEC materials on WASH.	X	X	X	
	Engage development partners and other government agencies in raising the issues of WASH services at national and international platforms.	X	X	X	

Strategic Objective 2: Develop capacities of health workforce and communities to promote and sustain wash services and practices.					
Strategy 2.1: Incorporate WASH and IPC standards and guidelines into pre-service curricula and in-service training modules.	Incorporate WASH/IPC/MWM in the courses of KGUMSB.		X		KGUMSB, DoPH and DMS programmes
	Integrate WASH into the training packages of public health programmes.		X		
Strategy 2.2: Build capacities of health care workers and key community members on WASH/IPC/MWM/ environmental cleaning tools and standards to maintain well-functioning and climate-resilient WASH infrastructure.	Conduct ToT on HCF infrastructure and management structure assessment.	X			DoPH, DMS, District Health Sector, Development partners, SNV
	Provide trainings to health staff in dzongkhags and gewogs WASH tools.	X		X	
	Train HCFs to recognize and respond to specific needs of vulnerable population.	X		X	
	Advocate for political commitment and resource mobilization.	X		X	
	Train HCFs and communities on operation and maintenance of WASH infrastructure.	X		X	
	Build capacity of HCFs on data collection and analysis.	X		X	
	Sensitize local government officials and community leaders.	X		X	

Strategic Objective 3: Review and monitor regularly the progress made in wash indicators to incrementally improve wash services and practices.					
Strategy 3.1: Incorporate WASH indicators into the health management information system, and monitoring framework, and generate disaggregated and reliable data for prioritizing resources and evidence-based WASH programming.	Integrate WASH data and indicators into the national information and monitoring systems and DHIS2.	X		X	HMIS (MoH), PPD (MoH), PHED, DoPH, District Health Sector
	Develop a harmonized WASH database.	X			
	Promote the use of WASH data at the district and gewog levels.	X		X	
	Enhance monitoring of WASH implementation through tracking data generated by the HMIS and DHIS2.	X		X	
	Develop Dashboard to monitor WASH indicators at different levels.	X			
Strategy 3.2: Evaluate the effects of WASH interventions in HCFs on health programmes and outcomes, including maternal and child health, HCAI and AMR.	Conduct operational research on WASH services.	X		X	PHED (MoH), District Health Sector
	Study the impact of WASH/IPC/ Environmental cleaning services.			X	
	Conduct midterm review in 2025, and final WASH programme evaluation in 2030.	X		X	

VII. BUDGET OUTLAY/ESTIMATIONS (2021-2030)

Sl. No.	Strategic objectives and activities		Budget estimation (in million, Nu.)					Total (Nu.)
	Major activities	Budget items	2021-2022	2023-2024	2025-2026	2027-2028	2029-2030	
1	*Strategic Objective 1: INCREASE EQUITABLE ACCESS TO QUALITY WASH SERVICES, AND IMPROVE MEDICAL WASTE MANAGEMENT AND ENVIRONMENTAL CLEANING IN HEALTH CARE FACILITIES.*							
1.1	Develop the national standards on WASH and revision.	Consultations, printing, distribution	5.00	0.00	0.00	3.00	0.00	8.00
1.2	Develop SOPs for WASH infrastructure designs.	Meetings, printings, distribution	3.00	1.00	0.00	0.00	0.00	4.00
1.3	Rehabilitate the existing WASH infrastructure in HCFs.	Repairs/ maintenance	15.00	15.00	2.00	2.00	2.00	36.00
1.4	Explore alternative water sources and reuse methods for HCFs in water-stressed areas.	Consultancy, travel, infrastructure	5.00	5.00	3.00	0.00	0.00	13.00
1.5	Scale up WASH FIT in all districts.	Travel, logistics, supplies	5.00	5.00	0.00	0.00	0.00	10.00
1.6	Conduct joint activities on IPC and hygiene practices.	Travel, logistics, supplies	5.00	2.00	2.00	1.00	1.00	11.00
1.7	Develop IEC materials on WASH and IPC.	Consultancy, printings	3.00	2.00	0.00	0.00	2.00	7.00
1.8	Enforce environmental cleaning protocols.	Printings, distribution	3.00	2.00	0.00	0.00	0.00	5.00
1.9	Build capacity of hospital staff on waste management.	Travel, supplies, logistics	5.00	2.00	2.00	0.00	0.00	9.00

1.10	Pilot and scale up 'clean and safe HCF initiative'.	Survey, logistics, supplies	5.00	2.00	2.00	0.00	0.00	9.00
1.11	Establish coordination mechanisms for WASH.	Consultations, workshops, travel	3.00	3.00	0.00	0.00	0.00	6.00
1.12	Mobilize financial resources.	Consultancy	2.00	1.00	1.00	0.00	0.00	4.00
1.13	Conduct advocacy / sensitization workshop activities on WASH.	Travel, supplies, logistics	5.00	2.00	2.00	1.00	1.00	11.00
1.15	Conduct awareness creation activities.	Travel, supplies, logistics	3.00	3.00	3.00	1.00	1.00	11.00
	Sub-total year-wise		**67.00**	**45.00**	**17.00**	**8.00**	**7.00**	**144.00**
2	***Strategic Objective 2: DEVELOP CAPACITIES OF HEALTH WORKFORCE AND COMMUNITIES TO PROMOTE AND SUSTAIN WASH SERVICES AND PRACTICES.***							
2.1	Collaborate with KGUMSB on pre & in-service trainings.	Travel, logistics	2.00	2.00	0.00	0.00	0.00	4.00
2.2	Conduct ToT on WASH tools and standards	Travel, supplies, logistics	5.00	5.00	0.00	0.00	0.00	10.00
2.3	Train professionals in HCFs and communities.	Travel, supplies, logistics	5.00	5.00	0.00	0.00	0.00	10.00
2.4	Advocate for political commitment and resource mobilization.	Travel, supplies, logistics	1.00	1.00	0.00	0.00	1.00	3.00
2.5	Train staff on operation and maintenance.	Travel, logistics, supplies	4.00	4.00	0.00	0.00	2.00	10.00
2.6	Train health staff on data collection and thematic analysis.	Travel, logistics, supplies	2.00	2.00	0.00	0.00	0.00	4.00
	Sub-total year-wise		**19.00**	**19.00**	**0.00**	**0.00**	**3.00**	**41.00**

3	***Strategic Objective 3: REVIEW AND MONITOR REGULARLY THE PROGRESS MADE IN WASH INDICATORS TO INCREMENTALLY IMPROVE WASH SERVICES AND PRACTICES.***							
3.1	Develop a harmonized WASH database and update it.	Logistics, travel	3.00	0.00	0.00	2.00	0.00	5.00
3.2	Promote the use of WASH data.	Travel, logistics	4.00	2.00	2.00	0.00	0.00	8.00
3.3	Enhance monitoring of WASH implementation.	Travel, logistics	3.00	2.00	1.00	1.00	1.00	8.00
3.4	Develop a dashboard/app.	Travel, logistics	3.00	1.00	0.00	0.00	0.00	4.00
3.5	Conduct operational research.	Consultancy	3.00	3.00	2.00	0.00	0.00	8.00
3.6	Study the impact of WASH services.	Logistics, supplies, printing	0.00	0.00	0.00	3.00	3.00	6.00
3.7	Conduct midterm review and programme evaluation.	Consultancy	0.00	0.00	3.00	0.00	3.00	6.00
	Sub-total year-wise		**16.00**	**8.00**	**8.00**	**6.00**	**7.00**	**45.00**
	Grand total year-wise		**102.00**	**72.00**	**25.00**	**14.00**	**17.00**	**230.00**

REFERENCES

1. UNSG. Secretary-General's remarks at Launch of International Decade for Action "Water for Sustainable Development" 2018-2028 2018 [cited 2020 2nd December]; Available from: https://www.un.org/sg/en/content/sg/statement/2018-03-22/secretary-generals-remarks-launch-international-decade-action-water

2. WHA, Water, sanitation and hygiene in health care facilities in WHA-72.7, W.H. Organization, Editor. 2019, World Health Organization Geneva

3. WHO-UNICEF. WASH in Health Care Facilities 2015 [cited 2020 9 December]; Available from: https://www.washinhcf.org/about/.

4. WHO. WASH in health care facilites 2020 [cited 2020 9 December]; Available from: https://www.who.int/water_sanitation_health/facilities/healthcare/en/.

5. WHO-UNICEF, Water, sanitation and hygiene in health care facilities Status in low- and middle-income countries and way forward. 2015, Geneva World Health Organization and the United Nations Children's Fund

6. Guo, A., et al., Water, sanitation, and hygiene in rural health-care facilities: a cross-sectional study in Ethiopia, Kenya, Mozambique, Rwanda, Uganda, and Zambia. The American journal of tropical medicine and hygiene, 2017. 97(4): p. 1033-1042.

7. Al-Rawahneh, A., M. Rawahnih, and Y. Khader, Assessment of Water, Sanitation and Hygiene (WASH) within Healthcare Facilities in Selected Eastern Mediterranean Countries. Iproceedings, 2018. 4(1): p. e10543.

8. WHO-UNICEF, WASH in health care facilities: Global Baseline Report, 2019. 2019, Geneva: World Health Organization and the United Nations Children's Fund

9. Cronk, R. and J. Bartram, Environmental conditions in health care facilities in low-and middle-income countries: coverage and inequalities. International journal of hygiene and environmental health, 2018. 221(3): p. 409-422.

10. WHO-UNICEF-WaterAid, Water, sanitation and hygiene in health care facilities in Asia and the Pacific: A necessary step to achieving universal health coverage and improving health outcomes, in UNICEF, WaterAid, Editor. 2015, United Nations Children's Fund New York.

11. WHO-UNICEF. The WHO/UNICEF Joint Monitoring Programme for WASH: Country Profile - Bhutan. 2017 [cited 2020 9 December]; Available from: https://washdata.org/data/downloads#BTN

12. MoH, WASH in Health Care Facilities: Results of a National Census and Internal Joint Sector Review, 2019, D.o.P.H. Public Health Engineering Division, Editor. 2019, Ministry of Health: Thimphu.

13. MoH. Infection control and medical waste managment 2020 [cited 2020 18 December]; Available from: http://www.moh.gov.bt/.

14. WHO, Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. 2016, Geneva: World Health Organization.

15. WHO, Safe management of waste from health-care activities: a summary. 2017, Geneva World Health Organization

16. Allegranzi, B., et al., Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. The Lancet, 2011. 377(9761): p. 228-241.

17. Blencowe, H., et al., Clean birth and postnatal care practices to reduce neonatal deaths from sepsis and tetanus: a systematic review and Delphi estimation of mortality effect. BMC Public Health, 2011. 11(S3): p. S11.

18. Blencowe, H., J. Lawn, and W. Graham, Clean birth kits-potential to deliver? Evidence experience, estimated lives saved and cost. Save the Children and Immpact, 2010.

19. Organization, W.H., Report on the burden of endemic health care-associated infection worldwide. 2011.

20. Dorji, P., et al., Situation of maternal health in Bhutan 2018. Bhutan Health Journal, 2018. 4(2): p. 39-42.

21. MoH, Bhutan Every Newborn Action Plan (2016-2023). 2016, Thimphu: Reproductive Maternal and Newborn Health Program, Ministry of Health. .

22. Tshomo, D., Bacterial infection causes 11 newborn deaths, in KUENSEL. 2018, KUENSEL: Thimphu.

23. Delma, T., 22 cases of infant death in JDWNRH NICU in 2019, in TheBhutanese. 2019, TheBhutanese: Thimphu.

24. HCWH. Health care's climate footprint: How the health sector contributes to the global climate crisis and opportunities for action. 2019 [cited 2020 21 December]; Available from: https://noharm-uscanada.org/climatefootprintreport.

25. WHO-UNICEF, Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19: Interim guidance, in WHO/COVID-19/IPC_WASH/2020.4, W.H.O.a.t.U.N.C.s. Fund, Editor. 2020, World Heath Organization and the United Nations Children's Fund Geneva

26. Morgan, R., et al., Gendered health systems: evidence from low-and middle-income countries. Health research policy and systems, 2018. 16(1): p. 58.

27. Bouzid, M., O. Cumming, and P.R. Hunter, What is the impact of water sanitation and hygiene in healthcare facilities on care seeking behaviour and patient satisfaction? A systematic review of the evidence from low-income and middle-income countries. BMJ global health, 2018. 3(3).

28. Kohler, P., S. Renggli, and C. Lüthi, WASH and gender in health care facilities: the uncharted territory. Health Care for Women International, 2019. 40(1): p. 3-12.

29. Paterson, J., et al., Health care facilities resilient to climate change impacts. International journal of environmental research and public health, 2014. 11(12): p. 13097-13116.

30. Pema Cheizom, T.C., Role of rural women in sanitation and hygiene: A gender study from Bhutan. 2014, Thimphu: Netherlands Development Organization (SNV).

31. MoH, Report on piloting of WASH FIT in all health facilities under Punakha Dzongkhag 2019, Ministry of Health Thimphu.

32. WHO-UNICEF. WHO-UNICEF JMP country profiles. 2020 [cited 2020 18 December]; Available from: https://washdata.org/data/household#!/btn.

33. Kalpana, P., et al., Impending scope of Water Sanitation and Hygiene (WASH) in the post COVID19 pandemic era: An opportunity call. Indian Journal of Community Health, 2020. 32(2).

34. Montgomery, M. WASH in health care facilities: why it is important and what can be done. 2020 [cited 2020 18 December]; Available from: https://echo.unm.edu/doc/covid/WASHinHCF_CDCWebinarSeriesMontgomeryV1.pdf.

35. WHO-UNICEF, Almost 2 billion people depend on health care facilities without basic water services – WHO, UNICEF. 2020, World Health Organization and the United Nations Children Fund Geneva/New York.

36. WHO, Water and Sanitation for Health Facility Improvement Tool (WASH FIT). 2017, Geneva World Health Organization

37. PHED, Investment in WASH 2020, WASH in HCF Programme, Public Health Engineering Division: Thimphu.

38. MoH, National Health Policy M.o. Health, Editor. 2011, RGOB: Thimphu.

39. MoH, Bhutan Every Newborn Action Plan (2016-2023), RMNHP, Editor. 2016, Ministry of Health: Thimphu.

40. UNICEF, Strategy for water, sanitation and hygiene, 2016-2030. 2016, New York: United Nations Children's Fund

41. WHO, Water, sanitation and hygiene in health care facilities: practical steps to achieve universal access. 2019, Geneva: World Health Organization.

42. WHO, Global progress report on WASH in health care facilities: Fundamentals first 2020, Geneva: World Health Organization

43. GNHC, Twelfth Five Year Plan, 2018-2023: Volume I Main Docment 2018, Gross National Happiness Commission, Royal Government of Bhutan Thimphu.

44. WHO-UNICEF, Core questions and indicators for monitoring WASH in health care facilities in the sustainable development goals. 2018, Geneva World Health Organization and the United Nations Children's Fund

ANNEXES

(a) Definitions of WASH indicators

Monitoring indicators	Components of indicators
Water services: Proportion of HCFs with safe, and adequate supply of water from an improved source, which is located on premises.	Improved: Improved water sources are those which, by nature of their design and construction, have the potential to deliver safe water. Such sources include – piped water, boreholes, protected dug wells, protected springs, rainwater, and packaged or delivered water.
	Safe: A water supply that is not contaminated by pollutants and disease-causing germs like *E.coli*.
	Adequate: There is no shortage of water supply to HCFs throughout the year due to disruptions caused by seasonal changes, or climate-induced calamities (flash floods, landslides).
	On premises: Water is obtained within the HCF buildings, or within the facility grounds.
Sanitation services: Proportion of HCFs with improved and usable sanitation infrastructure, which are designed to build separate toilets for staff, women along with menstrual hygiene amenities, and users with limited mobility.	Improved infrastructure: Those infrastructure, which are designed to hygienically separate excreta from human contact, are considered as improved ones, such as flush/ pour flush toilets connected to a piped sewer system, septic tanks/pit latrines, composting toilets or pit latrines with slabs.
	Usable toilets: They are those available (not locked and located on premises) to staff and patients for use; are functional (not broken or blocked) and provide privacy (firm doors lockable from inside).
	Separate toilets: Staff and patients have separate toilets so as to ensure that patients have unrestricted access to toilets. In addition, at least one separate toilet is dedicated to women and girls.
	Menstrual hygiene amenities: Toilets have a bin with a lid on it, and water and soap available for washing.
	Users with limited mobility: An accessible toilet is made available to those with limited physical disability. Such a toilet will have handrails for support, a wider toilet door, an easy-to-open and reachable door handle. No steps leading up to the toilet door.

Proportion of HCFs with functional hand hygiene amenities available at points of care (PoC) wherever they are necessary, and within 5 metres of toilets.	Hand hygiene amenities: Any paraphernalia or materials, such as a sink or tank or bucket with tap, soap, and even alcohol-based hand rub dispensers, which enable staff and patients or others visiting a health facility to clean their hands effectively.
	Functional: Points of care must have either water and soap, or alcohol-based hand rub. Water and soap must be available within 5 metre of toilets.
	Points of care: Any location/site in HCFs where medical consultation or treatment takes place, such as consultation and delivery rooms.
Proportion of HCFs that safely segregate, treat and dispose of medical wastes, including sharps and infectious wastes.	Safe segregation: There has to be 3 colour-coded bins to separate infectious waste, sharp waste and general waste in medical consultation or treatment rooms.
	Safe treatment and disposal: Medical wastes can be treated and disposed of by incineration, autoclaving, and burial in a lined or protected pit. Or, wastes could be taken to a proper disposal site.
Proportion of HCFs with protocols for cleaning in place, and staff trained on cleaning procedures.	Cleaning protocols: A written document describing a work schedule, and steps or procedures to carry out specific tasks, such as cleaning floor, sink, or spillage of body fluid.

(b) SDG goals and targets related to WASH in HCFs

Goals	Targets
SDG 6: Ensure availability and sustainable management of water and sanitation for all.	*6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all.* *6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.*
SDG 3: Ensure healthy lives and promote well-being for all at all ages.	*3.8: Achieve universal health coverage, including financial risk protections, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.*

(c) Key findings of the National WASH Census report (2019)

Water services	√ 95% of HCFs have water service (improved, available and on premises) √ 95% of HCFs have water supply from improved sources. √ 10% of water sources contaminated with *E.coli*. √ 38% of HCFs get water supply from the same sources as communities. √ 30% of HCFs face water shortages due to seasonal changes.
Sanitation services	√ 16% of HCFs have basic sanitation services (overall). √ 99% of HCFs have improved toilets (pour-flush toilets) √ 76% of toilets are connected to septic tanks. √ 16% of toilets are not in conditions to use. √ 73% of HCFs have separate toilets for staff. √ 31% of HCFs have toilets designed for persons with limited mobility.
Hygiene facilities	√ 73% of HCFs have a basic hygiene service. √ 88% of HCFs have hand hygiene facilities at points of care.
Medical waste management	√ 80% of HCFs safely segregate medical waste. √ 59% of HCFs treat/dispose infectious and 50% sharps wastes. √ 36% of HCFs have basic waste management services.
Environmental cleaning practices	√ 5% of HCFs have basic environmental services. √ 20% of HCFs have cleaning protocols in place. √ 45% of HCFs have staff trained on cleaning standards.