Assessing water, sanitation and hygiene in health care facilities in Liquiçá and Manufahi 2020-2021

WaterAid

Acknowledgements

WaterAid would like to acknowledge all the health care workers and facility staff that provided time to conduct this assessment. Without their valuable input and support, we would have not been able to conduct the assessment. We would also like to thanks all partners in Manufahi (Fundasaun Lata ba Futuru and Luta ba Mudansa) and Liquiçá (Fundasaun Hafoun Timor Lorosa'e) who participated in training and collected the data from facilities. We would also like to acknowledge the support of the Australian Government through the Australian NGO Cooperation Program (ANCP) for supporting this assessment.

Cover photo: Handwashing and cleaning facilities in Community Health Center Bazartete, Liquiçá.

Australian Aid

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Abbreviations

AMR	Antimicrobial Resistance
BeMOC	Basic Emergency Obstetric and Newborn Care
CeMONC	Comprehensive Emergency Obstetric and Newborn Care
CHC	Community Health Centre
COVID-19	Disease caused by SARS-COV-2 virus
GPS	Global Positioning System
HCF	Health care facility
IPC	Infection Prevention and Control
JMP	Joint Monitoring plan
SARS-CoV2	Sever Acute Respiratory Syndrome – Coronavirus 2
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WASH FIT	Water sanitation health facility improvement tool
WHO	World Health Organization

Executive summary

The provision of water, sanitation and hygiene (WASH) in health care facilities is essential to support safe and quality care. This has become even more pertinent during the COVID-19 pandemic, where hygiene and infection control are essential if preventing the spread of COVID-19, especially in health care settings.

Currently, there is limited nationally available data on WASH in health care facilities in Timor-Leste. To address this data gap and to inform future priorities and programming on WASH health care facilities, WaterAid conducted an assessment of all public health care facilities in Liquiçá and Manufahi. The assessment was carried out during 2020 as the COVID-19 response was underway. The data has been used to assess the WASH readiness of health care facilities and develop recommendations for improving WASH services and behaviours at health care facilities through a health systems strengthening approach.

The aims of this needs assessment are:

1. To comprehensively understand the current WASH and related infection prevention and control (IPC) conditions in health care facilities;

2. To determine where further investigation is required to understand upstream determinants of improved WASH and IPC in health care facilities; and,

3. To identify evidenced-based WASH-focused action that could be taken to improve the safety and quality of care in health care facilities.

Results

Table i. Overall JMP service levels across both Liquiçá and Manufahi

JMP Service Level	Water			Sanitation			Hygiene			Health Care Waste Management*			Environmental Cleaning		
Municipality**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**
Basic	59%	75%	67%	7%	14%	11%	37%	61%	49%	4%	14%	9%	0%	7%	4%
Limited	22%	21%	22%	93%	86%	89%	7%	7%	7%	11%	68%	40%	26%	32%	29%
No service	19%	4%	11%	0%	0%	0%	56%	32%	44%	85%	11%	47%	74%	61%	67%

** 4% could not be calculated, **M=Manufahi, L= Liquiçá, T=total*

COVID-19 Analysis

COVID-19 specific questions were asked during the survey in line with global and national recommendations. In a more specific analysis, relevant data have been compared to requirements outlined in the Timor-Leste COVID-19 Clinical Management Guidelines (English). The clinical guidelines have several specifications related to WASH, specifically.

Guideline elements	WASH implications on guideline implementation
Health care staff should wash their hands frequently, including before and after touching every patient and their surrounds	Cannot be met in at least half of facilities
Medical equipment should be disinfected between every patients and single use items discarded	The first element of this guideline (disinfection) would not be met in 33% of facilities and less than 10% of facilities would be able to safely manage single use waste.
Family members should be reminded to wash their hands often	About half of all facilities could support the implementation of this guideline.
PPE should be available for staff managing waste	Just under half of facilities could meet this guideline
Hand hygiene materials must be available for waste staff	Over half of facilities could meet this guideline
Sharps must be disposed of in sharps containers	Half of facilities could meet this guideline
Waste managed according to routine procedures including solid biological waste being incinerated	Most facilities would not be able to meet this guideline
A cleaning roster must exist for each facility and be followed	Most facilities would not meet this guideline
High touch surfaces should be cleaned at least daily	This guideline could be met in over two thirds of the facilities

Recommendations

The recommendations have been framed in line with WHO and UNICEF's Practical Steps for WASH in health care facilities which cover areas that countries must address to work towards implementing the 2019 World Health Assembly 72.7 Resolution on WASH in health care facilities.

1. **Conduct situation assessment**
   - Undertake a more detailed national analysis of policies and priorities for WASH in health care facilities (HCF).
   - Complement the assessment with further qualitative and observational studies to understand upstream determinants of WASH-related processes and practices.
   - Undertake this assessment in other municipalities to gain a more comprehensive understanding of WASH in health care facilities nationally.

2. **Set targets and define roadmap**
   - Develop a costed national and municipality-wide roadmap with incremental steps for achieving basic WASH services in all health care facilities by 2030 with clear roles and responsibilities for WASH and health stakeholders.
   - Include targets for WASH in HCF within COVID-19 recovery and preparedness plans and policies.

3. **Establish national standards and accountability mechanisms**
   - Develop and endorse standards for WASH in HCF.
   - Develop accountability mechanism for supporting adherence to WASH standards through existing municipal structures and processes.
   - Develop protocols and standard operating procedures for WASH guidelines, including for cleaning protocols and health care waste procedures and safe management.
   - Ensure adequate training and supportive supervision of staff when implementing guidelines and protocols related to WASH.

4. **Improve and maintain infrastructure**
   - Design a contextualised routine assessment mechanism (such as WASH Facility Improvement Tool (FIT)) to implement at facilities to provide periodic assessment of WASH needs and progress towards achieving national standards.
   - Make financing available for capital investment requirements for WASH infrastructure as well as ongoing budget needs for operation and maintenance of infrastructure.
   - Develop standard design documents and costing tools to support quality infrastructure and inform and support budgeting processes.
   - Ensure clear and designated budgets for operation and maintenance with clear roles and responsibilities, particularly between government and communities.
   - Ensure infrastructure is co-designed with users, particularly women and disabled people's organisations, to ensure all infrastructure is accessible and usable by all.

5. **Monitor and review data**
   - Establish coordination mechanisms between WASH and health stakeholders at municipal and national levels to review WASH data and budget, plan and adhere to improving WASH requirements.
   - Embed all five JMP basic service level indicators into routine monitoring mechanisms alongside other measures to disaggregate by gender, age, and disability.
   - Routinely review data and develop actionable plans to address WASH needs.

6. **Develop health workforce**
   - Develop and make available clear job descriptions and roles and responsibilities for non-medical staff, especially cleaners.
   - Develop and deliver a cleaning training program for those responsible for cleaning. The training must be delivered in a participatory way and be targeted at the education and literacy level of staff.
   - Articulate the human resource requirements for WASH at each level of health care facility including numbers of cleaners and operation and maintenance staff, and plans to ensure adequate human resources are met put in place.
   - Ensure adequate WASH and IPC pre-service and routine in-service training is delivered to all relevant staff.
   - Foster leadership and supportive supervision of health care staff at the facility level to practice good WASH behaviours, including hand hygiene and cleaning.

7. **Engage communities**
   - Further investigate the role of the community in supporting WASH improvements and maintenance in health care facilities.
   - Develop clear roles and responsibilities, particularly relating to water service management with water user groups (AGMFs) and associated facilities.
   - Ensure health care facilities are involved in water safety planning processes.
   - Involve communities in infrastructure design, to ensure improvements meet community needs.

8. **Conduct operational research and share learning**
   - Develop a national learning platform for WASH in HCF to share experiences, learning and align all improvement with national targets and policies.
   - Undertake further research into WASH-related behaviours, their determinants and effective methods for improving behaviours at health care facilities.

9. **Other – financing, governance and pandemic preparedness**
   - Develop costing tools and understanding costing needs (through life cycle costing analyses) to ensure budgets can be developed, and met, to improve and sustain WASH services.
   - Understand financing mechanisms so that facilities and government can access the funding required to support WASH services.
   - Ensure WASH in health care facilities targets and activities are prioritised in outbreak preparedness and response efforts.

Background

Safe, reliable water, adequate sanitation, waste systems and hygiene (WASH) services and behaviours in health care facilities are vital for safe, quality health care provision.[1] WASH services in health care facilities are especially critical for the health of mothers and newborns to support quality, safe delivery and post-partum care. The provision of WASH in health care facilities serves to reduce the risk of infections, control the spread of disease (including SARS-CoV-2) and slow the development and spread antimicrobial resistance. [2] Furthermore, WASH protects patients and their carers, health workers and surrounding communities; and upholds the dignity of vulnerable populations including pregnant women, newborns and children, and people with disability. Clean and safe health care facilities can: increase demand for, and trust in, services; reinforce the role of health care services and staff in setting hygiene norms; increase the motivation, satisfaction and retention of health care workers; and, result in cost savings from infections averted and more efficient service delivery.

In Timor-Leste, rural health care facilities have been reported to lack access to water, sanitation and the means to maintain good hygiene. A UNICEF study (unpublished) from 2017 showed that only around 17% of health centers and 4% of health posts currently meet global WASH minimum standards. While the UNICEF study exposed challenging WASH conditions at health facilities in Timor-Leste, a comprehensive assessment of WASH at health posts, community health centers and hospitals is not available.

Building on the achievements of WASH and health actors towards ending open defecation in Manufahi and Liquiçá, WaterAid and sector leaders are now striving towards the next level identified in the National Sanitation Policy: Hygienic Status. This level requires extending services beyond households to include sustainable basic WASH services in health care facilities. The first step towards driving progress towards improving WASH in health care facilities is to understand the current WASH and related IPC conditions. As COVID-19 emerged, there has been renewed attention to basic hygiene, infection prevention and control and WASH service needs. Without comprehensive data, understanding where to target interventions is challenging. To address this, WaterAid has conducted a needs assessment for WASH in health care facilities in Liquiçá and Manufahi, focusing on basic WASH and IPC requirements as well as basic IPC and COVID-19 elements.

The study was designed in July-August 2020 as the COVID-19 response was underway across Timor-Leste and questions were designed to capture relevant COVID-19 data in line with national approaches to respond to COVID-19.

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[1] Water, sanitation and hygiene in health care facilities: practical steps to achieve universal access. Geneva: World Health Organization; 2019

[2] WHO, UNICEF, WaterAid. Combatting antimicrobial resistance through water, sanitation, hygiene and infection prevention and control. Geneva: 2020. https://www.who.int/water_sanitation_health/joint-wash-ipc-amr-actions-2020-201022.pdf?ua=1

Overall, the aims of the needs assessment were:

1. To comprehensively understand the current WASH and related IPC conditions in health care facilities in Manufahi and Liquiçá;

2. To determine where further investigation is required to understand upstream system and individual determinants of improved WASH and IPC in health care facilities; and,

3. To identify evidenced-based WASH-focused action that could be taken to improve the safety and quality of care in health care facilities.

Methodology

Study Setting, Site Selection

A quantitative needs assessment was conducted in all health care facilities in Manufahi and Liquiçá (55 in total) covering all health posts and community health centres (CHCs) across both municipalities. There is no data collected from hospitals as these two municipalities do not have hospital level care. The two municipalities were selected as WaterAid has active programs in these locations, is supporting COVID-19 response efforts there, and there is no comprehensive WASH in health care facilities data available in these municipalities.

Study Design

Due to movement restrictions during the COVID-19 state of emergency that was in place during study design and data collection, the survey was designed to be completed digitally and minimize contact between data collectors and health care staff. To account for these additional safety measures, the needs assessment was designed to be quantitative only. The data collection tools were developed by adapting existing tools which have been tested and applied by WaterAid, UNICEF, WHO, and the Soapbox Collaborative on WASH in health care facility assessments in South Asia, the Pacific, South East Asia, and Africa.[3],[4] Modifications were made to adjust for newer survey designs developed by WaterAid and WHO which address COVID-19 specific WASH in health care facilities' needs. Tools were tailored to the Timor-Leste context and aligned with local guidelines where they were available, including COVID-19 response activities.

The assessment was comprised of observation and survey questions that cover the five main WHO/UNICEF Joint Monitoring Program's indicators for WASH in health care facilities[5]: water, sanitation, hygiene, health care waste management and environmental cleaning. Additionally, the assessment covers areas such as: basic health facility information; water supply, reliability, use and quality; availability, functionality, accessibility and inclusiveness of sanitation facilities; handwashing facilities, promotion and compliance with COVID-19 guidance; health care waste segregation, infrastructure, treatment, disposal and training; environmental cleaning materials, training, protocols and practice; and operation, financing and maintenance of WASH services.

The assessment was conducted using mWater software.[6] GPS point data were collected at each health care facilities (Figure 1) and WASH data from the assessment, together with photographs, were collected via mobile phone using the digital mWater form. Data were transferred to a secure cloud-based management portal. Study managers with access rights, checked and verified the data in real time.

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[3] WHO, UNICEF (2017) Water and Sanitation for Health Facility Improvement Tool (WASH FIT). Geneva.

[4] The SoapBox Collaborative. TEACH Clean Package. https://www.lshtm.ac.uk/research/centres/march-centre/soapbox-collaborative/teach-clean

[5] WHO, UNICEF (2018) Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. Geneva.

[6] Water is a free mobile data collection and management system used by over 16,000 users in 159 countries. Refer: www.mwater.co. For Data Privacy: http://www.mwater.co/privacy-policy.html

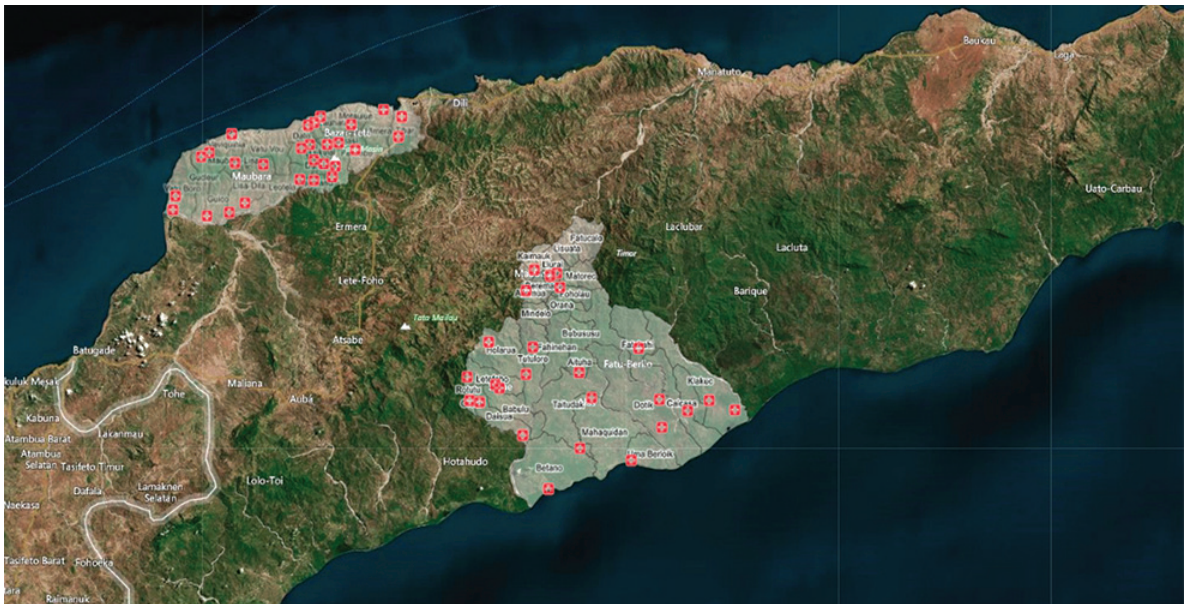


Figure 1. Map of study sites and location of facilities that were assessed.

All data collection tools were developed in English. The English questionnaires, question guides and checklists, and consent letters were translated into Tetun by the WaterAid team, and checked for accuracy. All tools were pre-tested and questions modified where needed. Data was collected by local WASH implementing agencies Fundasaun Hafoun Timor Lorosa'e (FHTL), Fundasaun Luta ba Futuru (FLBF) and Luta ba Mudansa (LBM). The data collectors were trained by WaterAid on the tool and data collection methods prior to data collection commencing, including a comprehensive WASH in healthcare facilities training session.

The assessment data were processed using mWater and Microsoft Excel. Descriptive analyses were conducted to derive frequencies and proportions for most variables. For simple comparison variables were grouped into levels of facilities:

- Health Post
- CHC

For some variables, data was also analysed by region (Liquiçá and Manufahi).

Data synthesis

A data analysis framework was designed so that the needs assessment data could be analysed and synthesised into actionable recommendations. The process to develop the analysis framework involved contributions from the assessment team to design and agree the analysis framework.

1. WHO/UNICEF Joint Monitoring Programme (JMP) definitions for WASH in HCF

   To understand the basic WASH conditions at each level of care, the WASH assessment was analysed according to the JMP core WASH in HCF indicators. This is to provide a top-level overview of basic WASH conditions. The WASH in HCF core indicators were agreed in 2016 by WHO and UNICEF and include water, sanitation, hygiene and health care waste management indicators. There are three services ladders defined by JMP: unimproved/no service; limited service; and, basic service (Refer Annex 1). Only basic and advanced services are considered to meet global minimum standards.

2. Extended WASH considerations

   Beyond the JMP basic service levels, additional analysis was performed for extended WASH and IPC-related questions towards higher services levels for WASH and IPC than the basic levels outlined by JMP. They were in line with global tools such as the WHO/UNICEF Water and Sanitation for Health Facility Improvement Tool.[7] In line with WaterAid's Equity and Inclusion focus, accessibility of infrastructure and inclusion of people living with disabilities was also analysed.[8]

3. Further analysis was undertaken in line with WASH FIT COVID-19 indicator levels and Timor-Leste's COVID-19 response requirements for WASH and IPC in health care facilities to understand COVID-19 related responses on WASH and general facility operations.

[7] WHO, UNICEF (2017) Water and Sanitation for Health Facility Improvement Tool (WASH FIT). Geneva.

[8] The WaterAid (2018) Developing a participatory management tool for user-friendly water sanitation and hygiene in healthcare facilities. Phnom Penh.

Results

General

In total, 55 facilities were assessed. This included 28 health care facilities in Liquiçá and 27 in Manufahi. The following table shows the breakdown of health posts, CHCs and hospitals in each district that were assessed. There are no hospitals in either municipality so all resulting data is for health post and CHC levels of care only. Some facilities do have larger inpatient services but do not provide services that constitute a referral hospital status in Timor-Leste.

Table 1. Type of health care facility assessed in each municipality

Facility type	Liquiçá	Manufahi	Total
Health Post	25	23	48
CHC	3	4	7
Hospital	0	0	0
Total	28	27	55

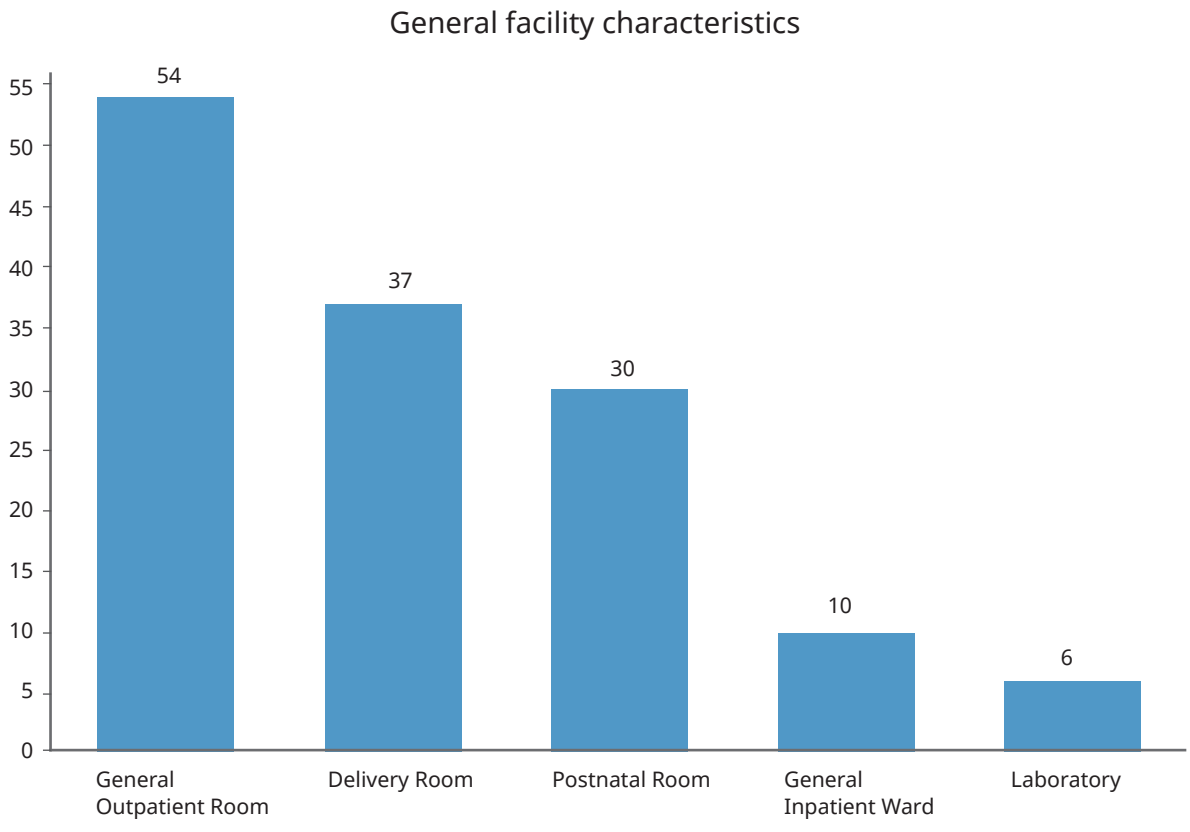


Figure 2. Wards/services provided at each facility

All health care facilities in the study, except one, are government run. Two thirds of facilities reported having services to support labour and delivery with the majority providing Basic Emergency Obstetric and Newborn Care (BeMONC) and six providing Comprehensive Emergency Obstetric and Newborn Care (CeMONC). The majority of health care facilities (36/55) saw between 60-400 patients visits in the outpatient department per month, with over 9 seeing more than 800. Of the 9 facilities with more than 800 patients in the last month, six were community health centres and 3 health posts.

Almost all health care facilities had a general outpatient ward and over half had a delivery room and designated postnatal room. Only 10 facilities had an inpatient ward (Figure 2).

Most facilities had a reliable electricity supply (33/55) but 20 reported having no electricity source or rarely having an electricity supply. Of those with a reliable electricity supply, grid power was the most common (32/33). Nine facilities d having back up electricity supplies if the primary source failed.

Over half of the facilities reported no births in the last month (31/55). Of those that did report births in the last month, 23 reported under 10 births with only 2 reporting more than 10. Almost all facilities had at least one medical doctor (45/55). Midwives and nurses were not as common at all facilities. 28 facilities reported that they do not have a nurse on staff and 27 do not have a midwife. Only 22 facilities reported having at least one cleaner. Most commonly there was one cleaner at facilities (18/22) with one facility reporting 6 cleaning staff. Disability-related data was not commonly collected. Only 22 facilities reported collecting data on whether health care users have a disability. At the CHC level, only 2 out of 7 collected this data.

Table 2. Gender of all health care staff cadres

Cadre of health care staff	Total number report across all facilities (N)	Percentage of women staff	Percentage of Male staff	Identifying as other
Medical Doctor	72	44%	64%	0
Nurse	55	35%	65%	0
Midwife	48	94%	6%	0
Health volunteer	40	60%	40%	0
Cleaners	36	61%	39%	0
Administrative staff	3	33%	67%	0
Maintenance worker	2	0%	100%	0

Men predominantly constituted the medical doctor, nurse and maintenance staff workforces. Women were represented more commonly across health volunteer, midwife and cleaning roles (Table 2).

WASH analysis

Aggregated facility level results for water supply, sanitation, hygiene, health care waste management and environmental cleaning were compared against the WHO/UNICEF JMP core indicators, which are indicators designed to track progress against Sustainable Development Goal 6. For WASH in health care facilities, they cover five key areas: water, sanitation, hand hygiene, health care waste management and environmental cleaning. The definitions for each of the service level are found in Annex 1. A summary of overall JMP services levels across all facilities are displayed in Table 3.

Table 3. Overall JMP service levels across both Liquiçá and Manufahi

JMP Service Level	Water			Sanitation			Hygiene			Health Care Waste Management*			Environmental Cleaning		
Municipality**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**	**M**	**L**	**T**
Basic	59%	75%	67%	7%	14%	11%	37%	61%	49%	4%	14%	9%	0%	7%	4%
Limited	22%	21%	22%	93%	86%	89%	7%	7%	7%	11%	68%	40%	26%	32%	29%
No service	19%	4%	11%	0%	0%	0%	56%	32%	44%	85%	11%	47%	74%	61%	67%

** 4% could not be calculated, **M=Manufahi, L= Liquiçá, T=total*

The majority of facilities meet the basic service level for water indicating that an improved water source is on site and available at the time of survey. All facilities have an improved toilet on site but only 11% meet a basic service level. Most commonly, facilities do not provide toilets that are accessible to people with limited mobility, are not sex-segregated or separated for staff and patients. Almost half of facilities have amenities for hand hygiene at points of care (soap and water or alcohol-based hand rub) and at toilets (soap and water). Health care waste management and environmental cleaning has the fewest facilities meeting basic services levels, with almost half of facilities not segregating waste or treating and disposing of waste safely. Two thirds of facilities do not have guidelines available for cleaning and do not provide, or do not have staff that have participated in, cleaning training for cleaners.

Water

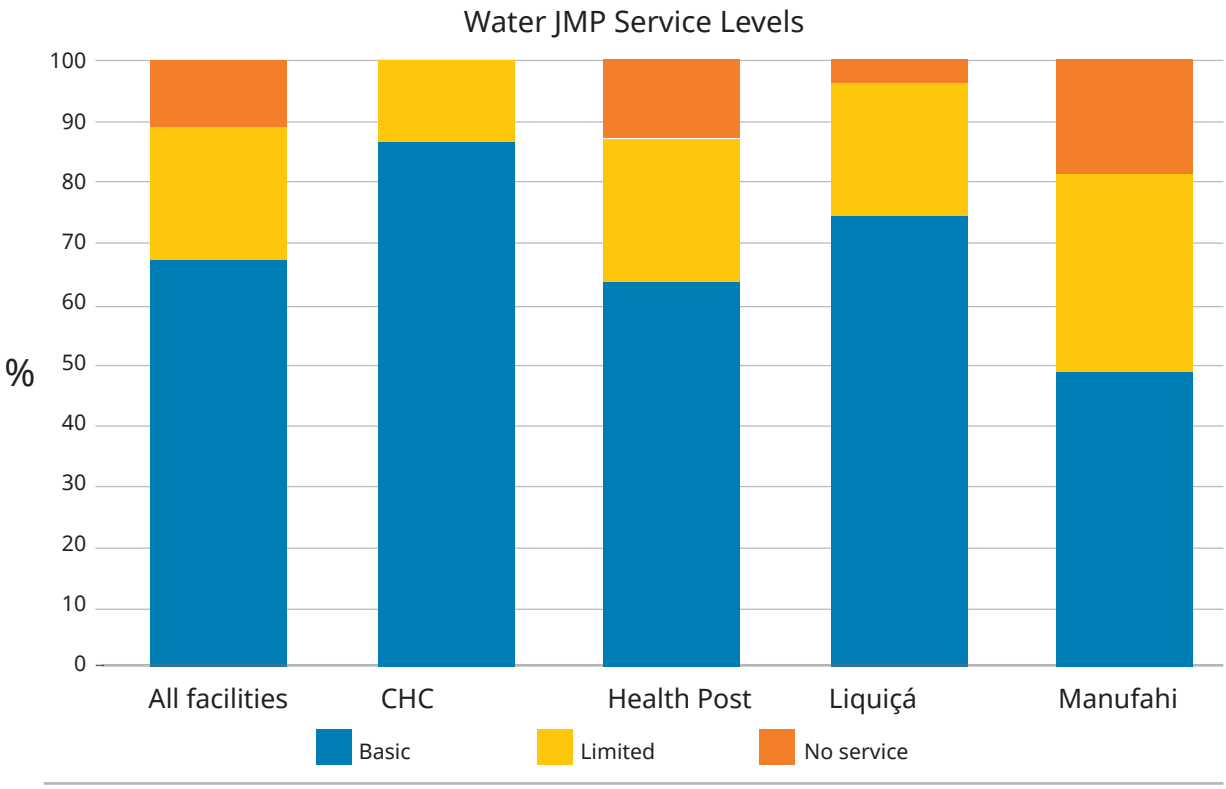


Figure 3. JMP Service Levels for water

The majority of health care facilities in both Manufahi and Liquiçá met basic services levels for water supply (Liquiçá: 21/28, Manufahi 16/27). Almost all facilities had a water supply on premises (78.2%) with over two thirds (69.1 %) having piped supply inside the building. Almost three quarters of health care facilities had water available at the time of the survey (74.5%). Six facilities had no service level, indicating that more than one in ten facilities do not have an improved water supply available across the two municipalities. Water points were not always accessible with over one third (34%) reporting that they didn't have a water outlet that was accessible to people with limited mobility.

Elevated water tank in Health Post Uma Berloic, Alas, Manufahi.

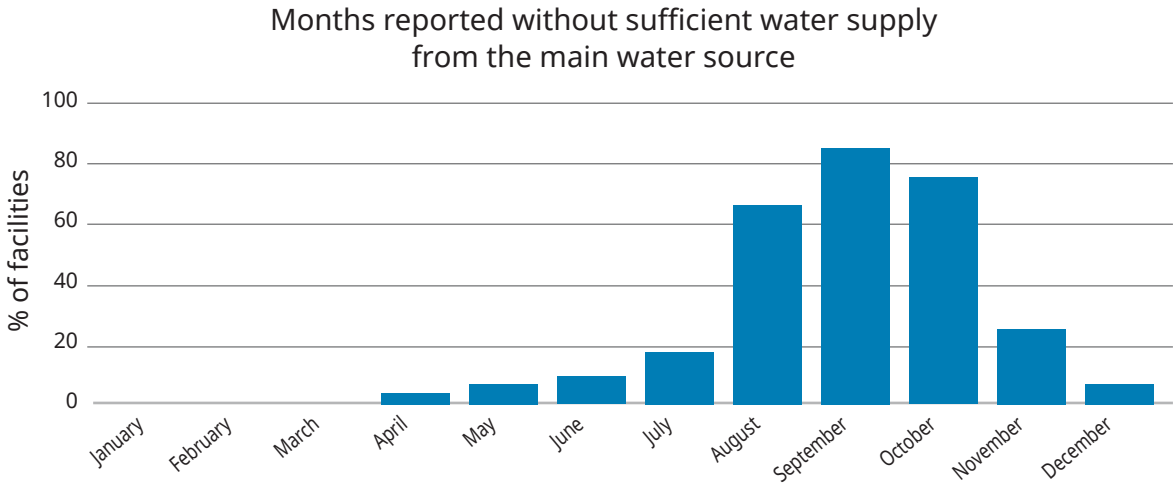


Figure 4. Reported months where there is not sufficient water supply from the main water source

Water reliability was reported as being limited both across the year and throughout the day. Reliability varies throughout the year with all facilities reporting periods of water shortages, particularly during August – October where over 70% of facilities reported water shortages. This is important to note as 24% of facilities reported not having water available on the day of the survey. When water reliability was assessed across a 24 hour period, over a third of facilities reported water being rarely available or only some hours.

Hand dug well in Health Post Bitirai, Fatuberliu, Manufahi.

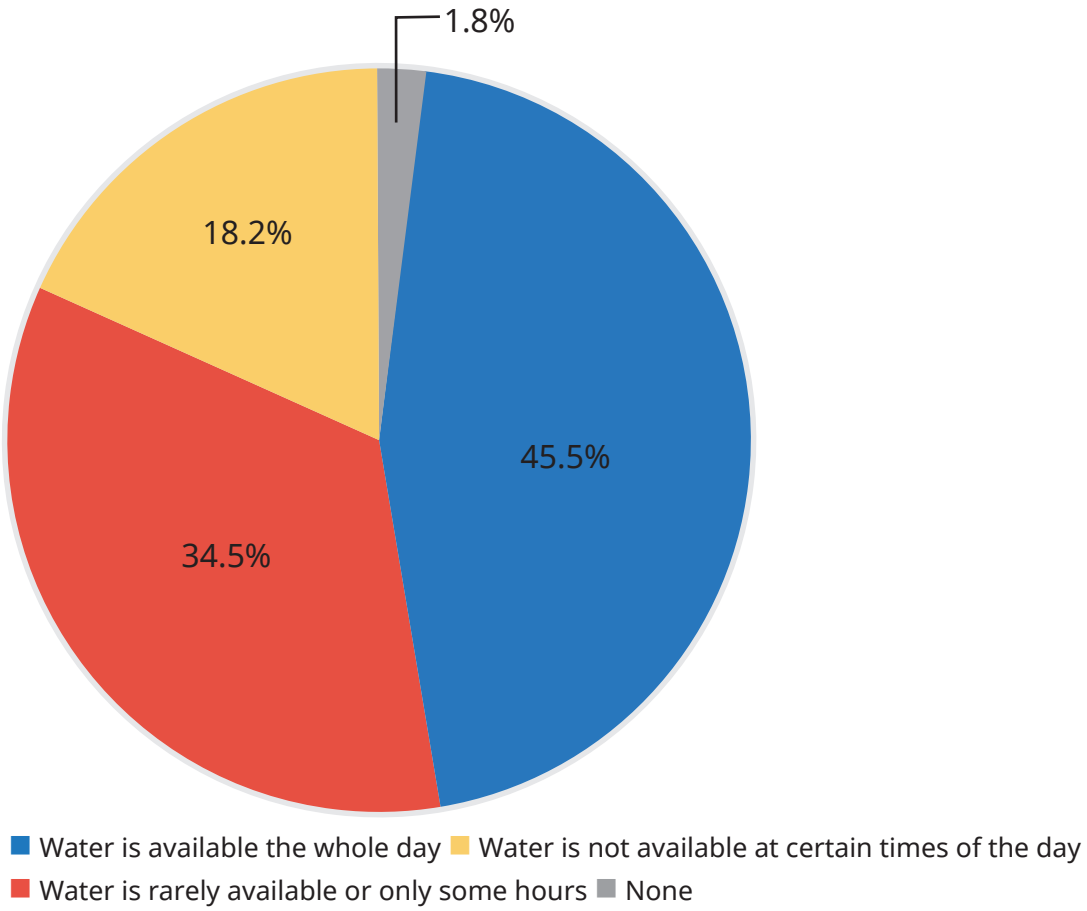
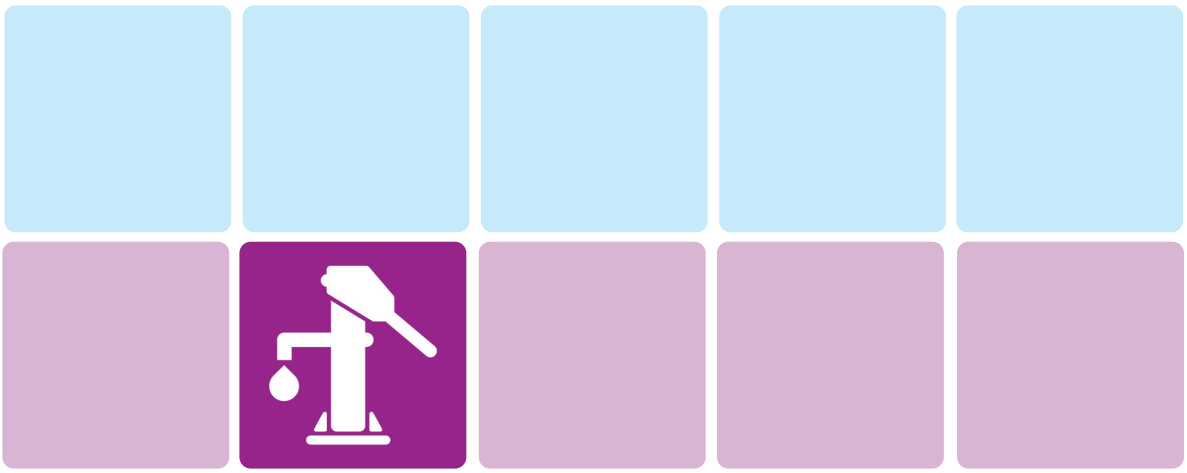


Figure 5. Water availability throughout the day

Drinking water is not commonly available for patients or staff and is only treated some of the time. Drinking water was available for patients at a quarter of health care facilities (25%) and for staff at 40% of facilities. Drinking water was treated at just over half of the facilities (53%) and the most common method reported was boiling. The government and health care facilities themselves (87%) were primarily responsible for owning water supplies to health care facilities with approximately one in ten being owned by a community (9.1%).



Latrine facility in Health Post Dotic, Alas, Manufahi.

Sanitation

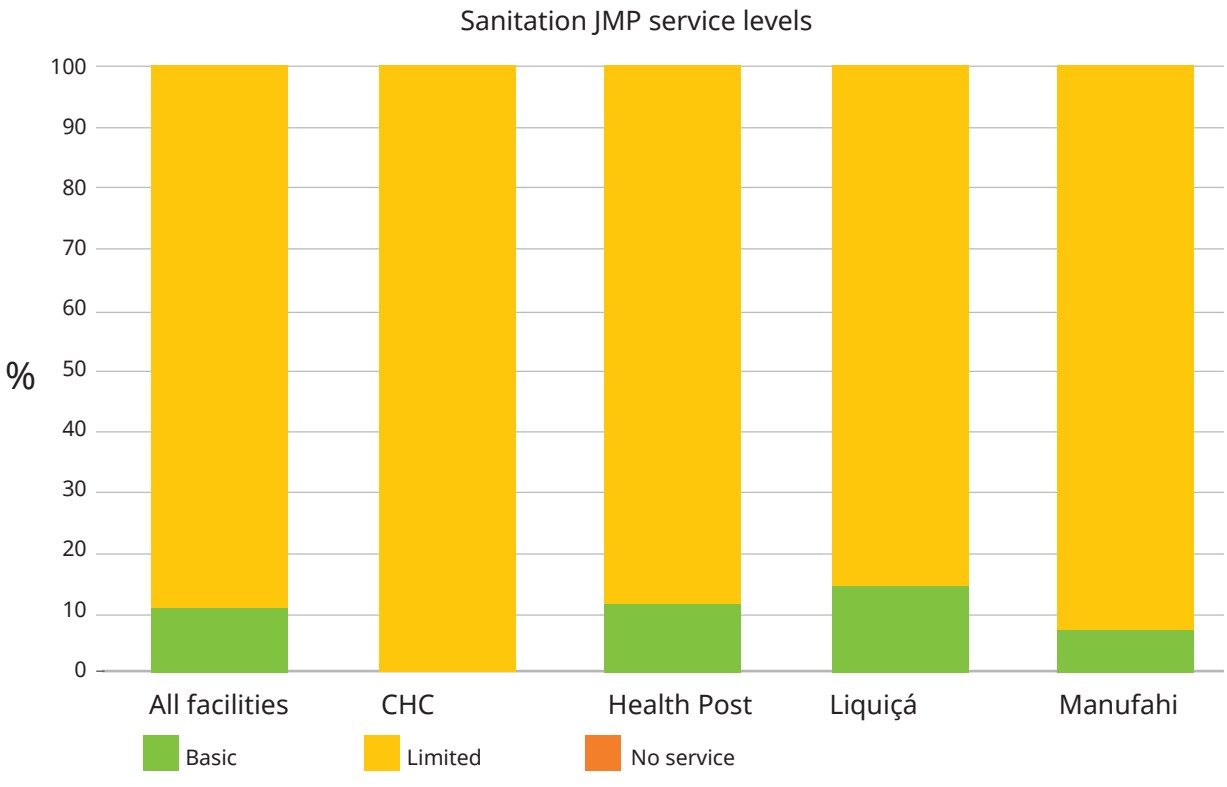


Figure 6. JMP Service levels for sanitation

Most facilities did not meet basic services levels for sanitation. Only 11% (6/55) of facilities met the basic services levels across both municipalities. No CHC met basic service levels. While over 90% (50/55) across all facilities had at least one usable and improved toilet onsite, almost all (84%) did not have facilities in toilets for women and girls to manage menstruation[9] and only 30% had at least one toilet accessible for people with limited mobility[10]. Two thirds of facilities had toilets separated for staff and patients. All CHCs had improved and usable toilets but no facilities had toilets accessible to people with limited mobility and only one had a facility had a toilet that had a bin present to support the needs of women and girls menstruating.

Latrine facility in Health Post Lissadila 1, Maubara, Liquiçá.

All faecal waste was reported to be contained in either a septic tank or double pit. However, only 7% of facilities reported that the pit was emptied when it was full, all of which were located in rural areas. None of the facilities that reported that their pits were emptied were able to verify who did this or how it was done. It is important to note that some facilities had over 800 patients per month.

Toilet facilities were reported to be visibly clean in most cases (60%) and water and detergent or water and disinfectant were most commonly reported as being used to clean the toilets. Only five (9%) health care facilities kept a record of toilet cleaning.

[9] To meet menstrual hygiene needs, as defined by JMP, means - *at least one toilet is separated for use by women/girls, and has a bin with a lid on it and/or water and soap available in a private space for washing*

[10] According to JMP - *Toilets are considered accessible if they meet relevant national or local standards. In the absence of such standards, toilets should be accessible without stairs or steps, have handrails for support attached either to the floor or sidewalls, a door which is at least 80 cm wide, and the door handle and seat within reach of people using wheelchairs or crutches/sticks.*

Hand Hygiene

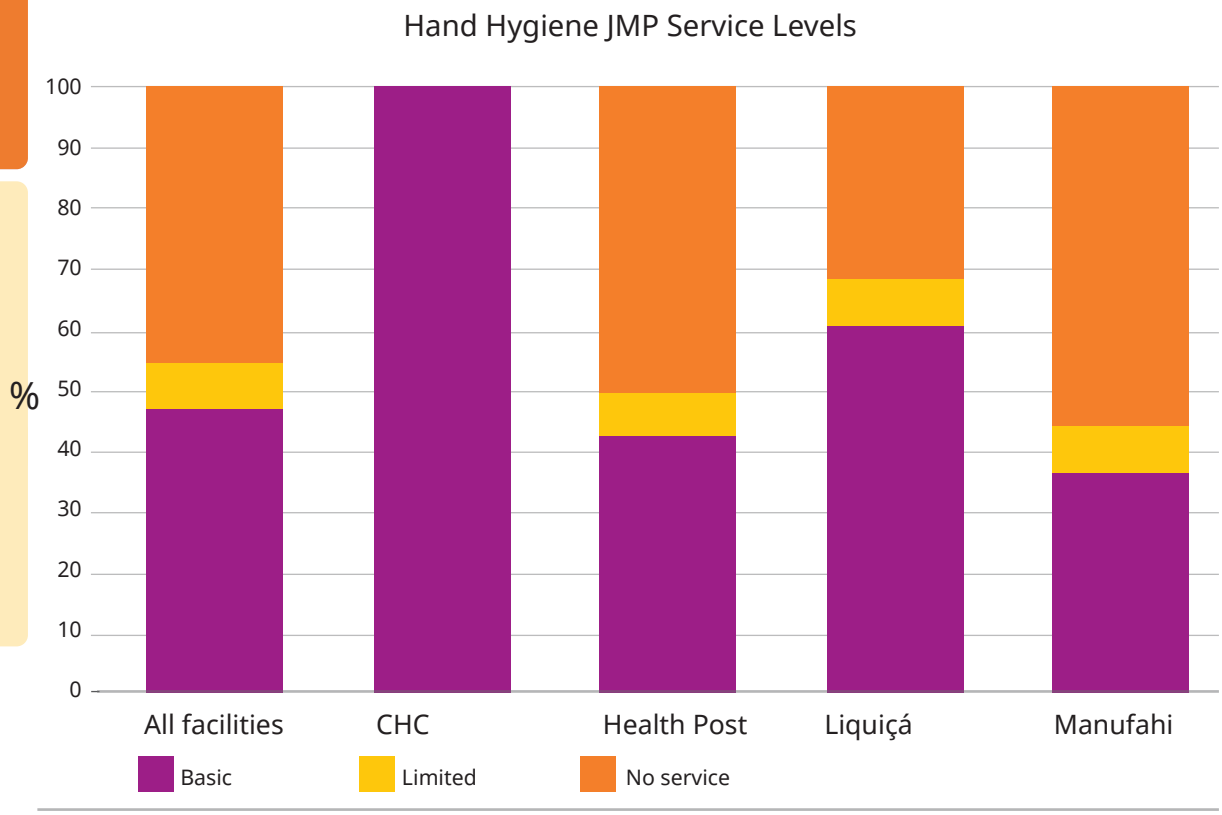


Figure 7. JMP Service Levels for Hygiene

Overall, there were stark difference between facilities and their service level for WASH. Across both municipalities, almost half (49%) met a basic services level, yet there were only 7% that met a limited service level. Almost half had no service level (44%) indicating they did not have hand hygiene facilities at points of care or at toilets. In Liquiçá, over half (61%,) facilities met basic service levels but over a third (32%) had no service level, which means that there weren't functional hand hygiene stations at points of care or toilets. In Manufahi, just over half the facilities had no service for hand hygiene (56%).

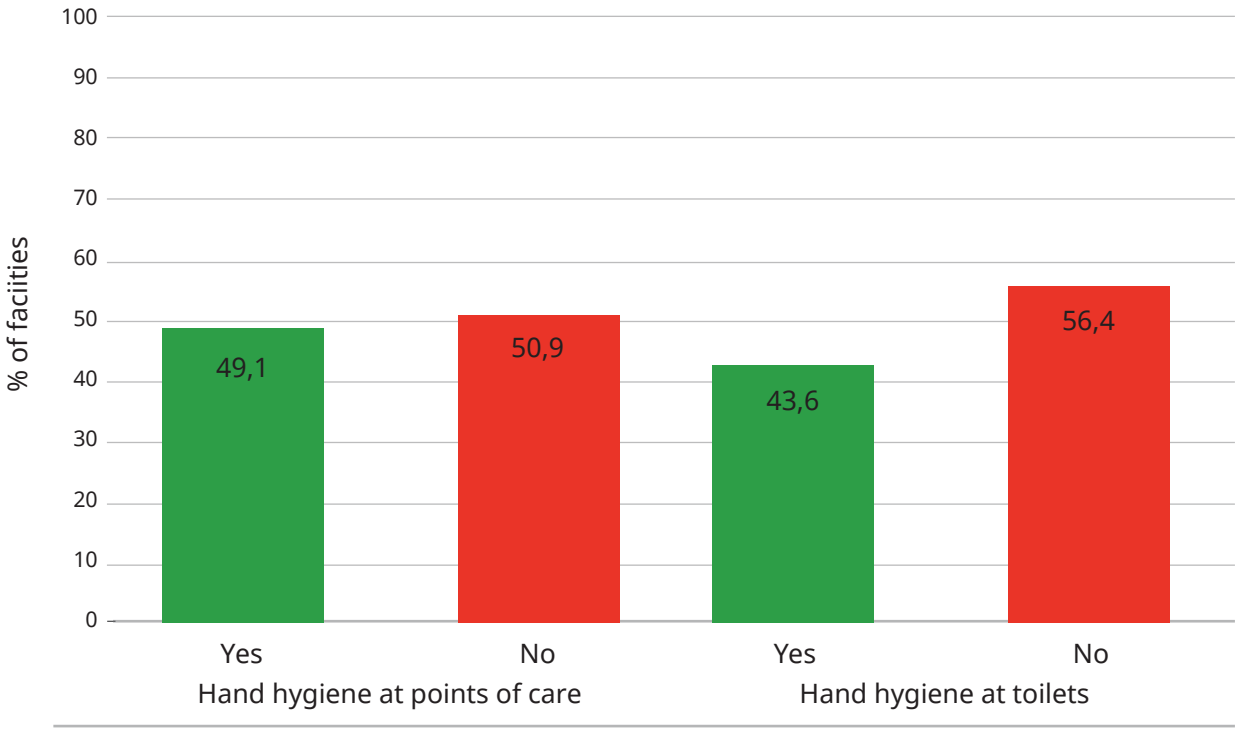
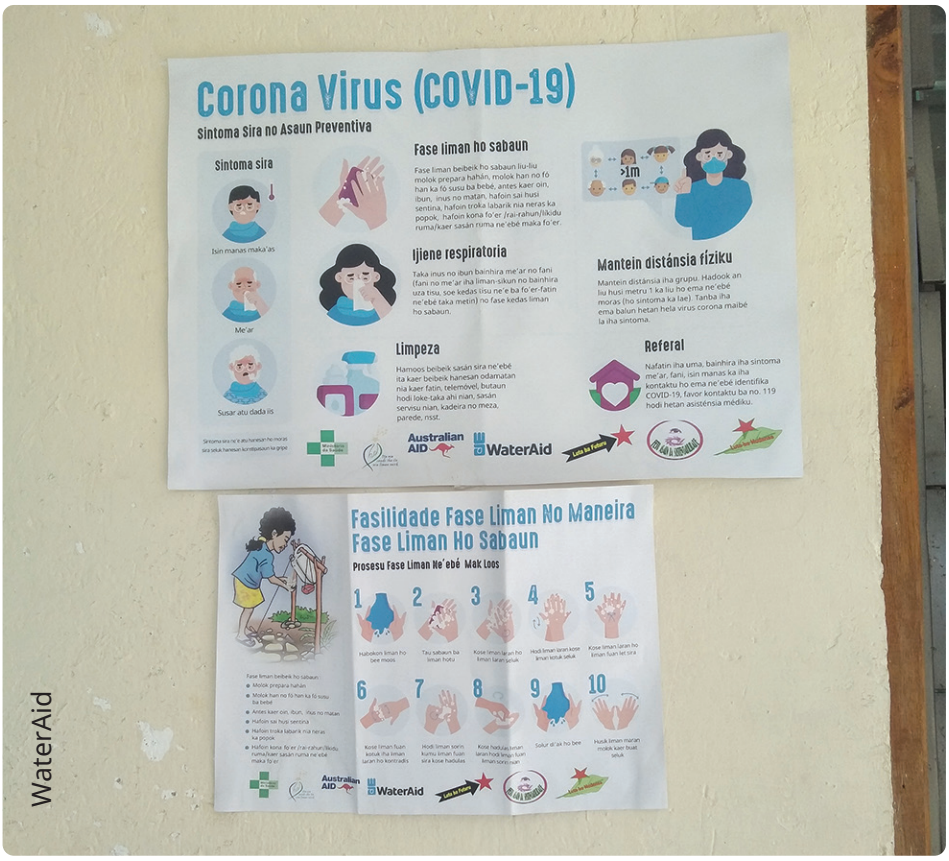


Figure 8. Availability of adequate hand hygiene materials (soap and water and/or alcohol based hand rub) in select locations



Handwashing and COVID-19 promotion poster in Health Post Feriksare, Alas, Manufahi.

All CHCs met basic services levels for hand hygiene. Regarding the availability of hand hygiene across all relevant areas in the facility, less than a quarter of facilities reported having hand hygiene in areas such as in waiting rooms and entrances/exits (which was a focus of COVID-19 WHO obligatory hand hygiene guidance) and areas where personal protective equipment (PPE) is donned and doffed and waste managed.

Half of facilities (51%) reported that staff monitor hand hygiene stations for the presence of water and soap, with a third (33%) saying they knew this was important but did not frequently conduct checks and 16% saying there was no procedure and no monitoring of hand hygiene was done.

Handwashing facility with handwashing steps poster in Health Post Caicassa, Maubara, Liquiçá.

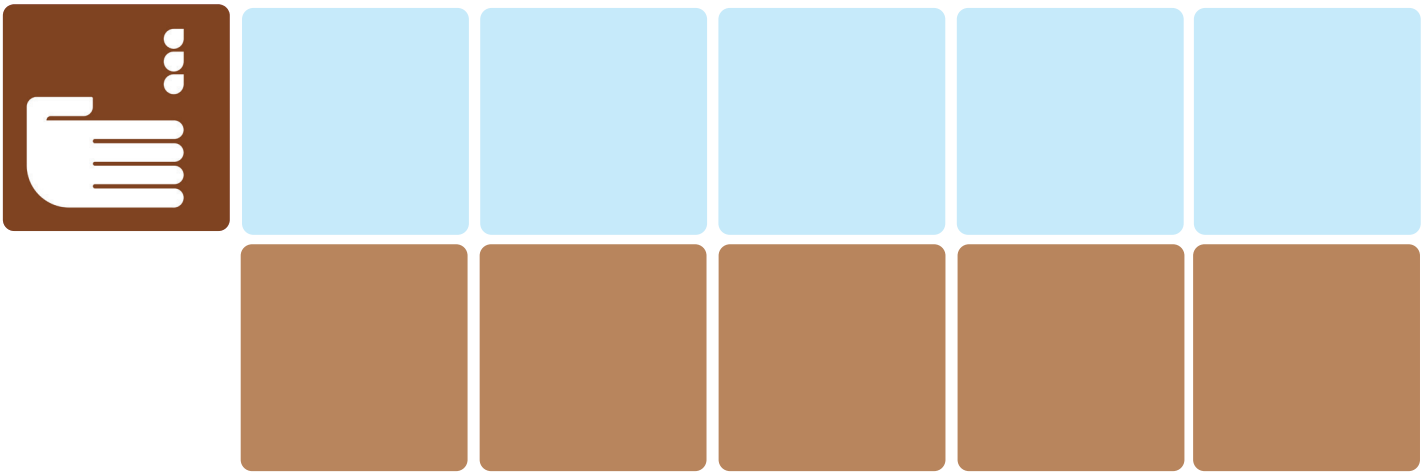
Handwashing promotion poster in Health Post Maumeta, Bazartete, Liquiçá.

Table 4. Presence of hand hygiene station with soap and water or alcohol-based hand rub in critical locations

Handwashing Station Location	Soap and Water Available in All Locations	Soap and Water Available in Some Locations	Not available
Waiting rooms	26%	27%	47%
Entrances and exits of the health care facilities	25%	27%	48%
Where PPE is donned and doffed	14%	44%	42%
Health care waste management area	22%	34%	44%

Posters were available at most hand hygiene stations in health care facilities with just over a third of health care facilities reporting no illustrated hand hygiene posters at hand hygiene facilities. About half of facilities reported having hygiene posters that were accessible to all at toilets and throughout the health facilities (47% and 51%, respectively).

Training for hand hygiene was common for health care workers with over 80% of facilities reporting that training is received at least once. However, only 39% reported conducting regular training at least annually. CHCs performed better when it came to training with all reporting that health care workers receive hygiene training at least once or regularly.



Health Care Waste Management

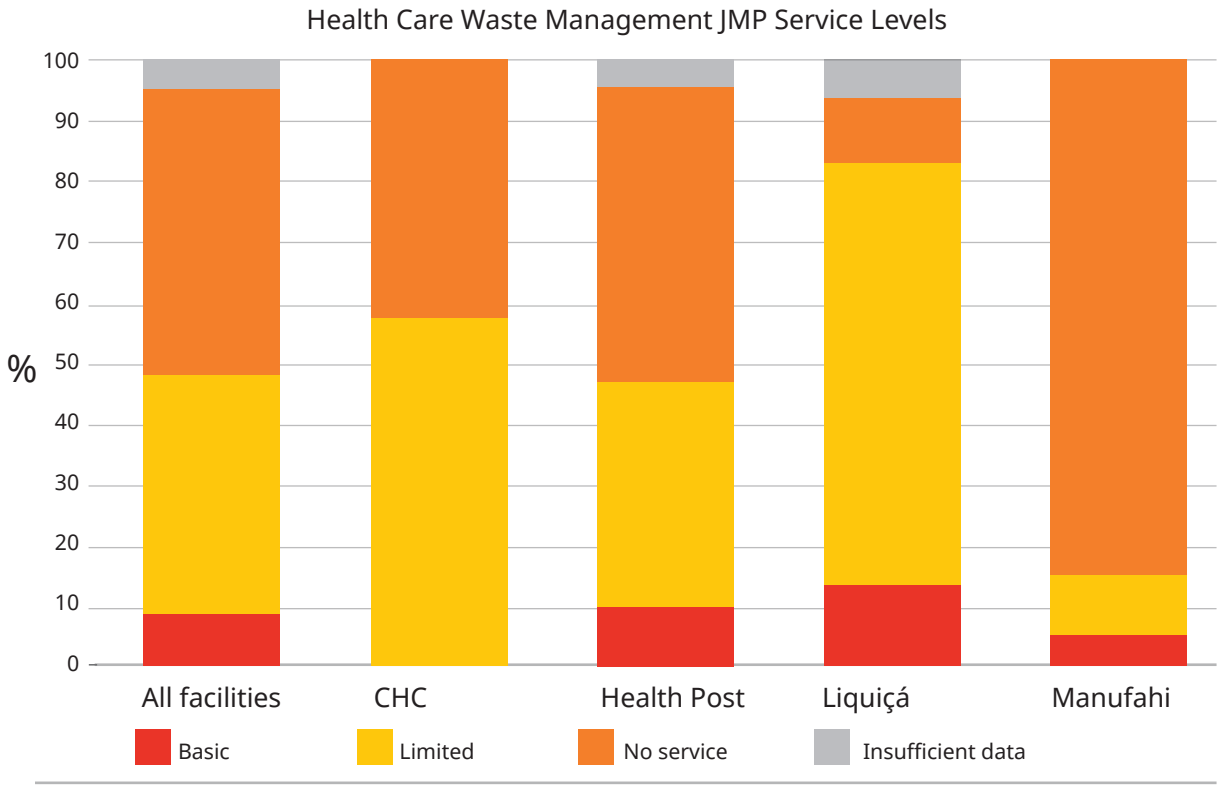


Figure 9. JMP Service levels for health care waste management

Health care waste management was poor at all health care facilities with fewer than one in ten health (9%) care facilities having basic service levels. In Manufahi, almost all facilities reported no service level (85%), indicating limited waste segregation and unsafe disposal of infectious and sharps waste are commonplace. No CHC met a basic service level for waste, with all CHCs in Liquiçá having a limited service level and three quarters having no service in Manufahi. The two with 'none' displayed in Figure 9 for Liquiçá indicate that the safety of disposal of sharps and infectious waste could not be determined.

Segregation at point of care into three labelled bins for sharps, infectious and general waste occurs in over a third of facilities but it was common that bins were over 75% full, were not adequately labelled, or not present in the consultation area.

Incinerator unit in Community Health Center Bazartete, Liquiçá.

Segregated waste bins in Health Post Lissadila 1, Maubara, Liquiçá.

Segregated waste bins in Health Post Hatuquesi, Liquiçá.

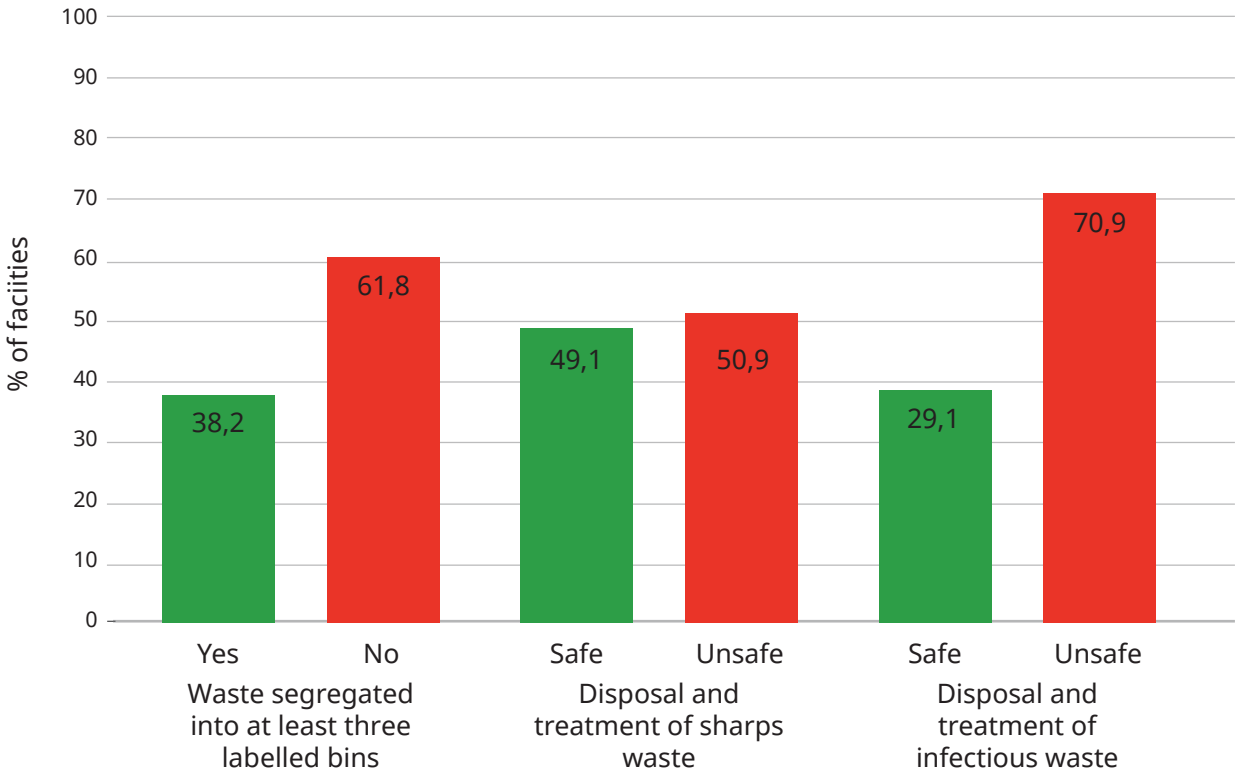
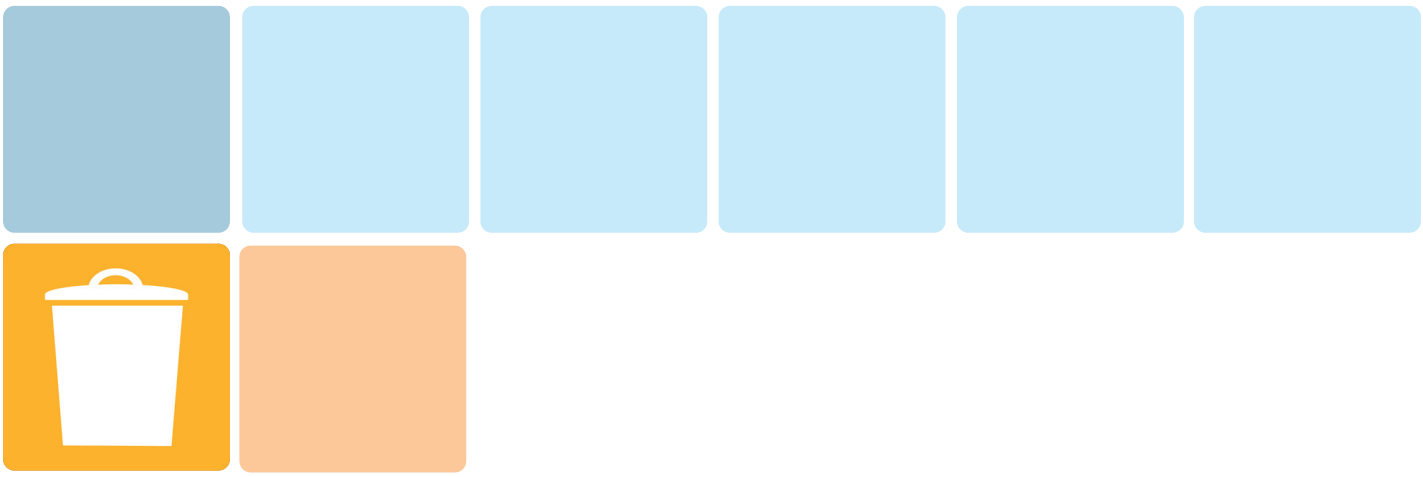


Figure 10. Waste segregation and treatment and disposal methods in all health care facilities

Sharps waste was more commonly safely disposed than infectious waste. The most common form of waste disposal for infectious waste was open burning with only one facility reporting incineration as the main form of treatment for infectious waste.

Placental waste was not reported to be safely disposed of in any health care facility . Almost all (87%) reported that families take the placenta home after childbirth with the remaining reporting that they did not have a separate placenta pit or other disposal mechanism for placentas. Less than 10% of facilities had a trained member of staff to manage waste. While over a third (35%) had someone appointed who was not trained, over half (56%) did not have a staff member appointed to manage waste.



Environmental cleaning

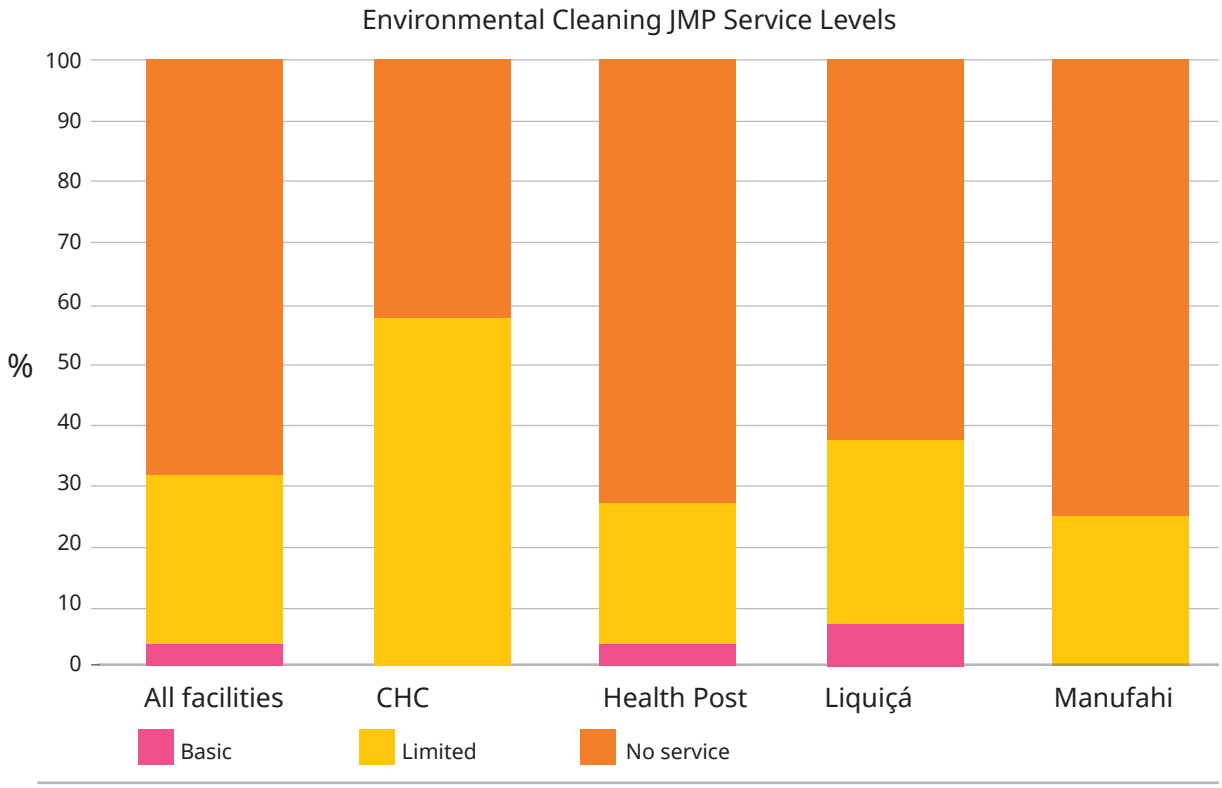


Figure 11. JMP Service Levels for Environmental Cleaning

Environmental cleaning is limited in almost all health care facilities in the two municipalities. Cleaning staff in more than three quarters of facilities had not received any training. Only 6% of facilities reported that all their cleaning staff had been trained. Four out of five facilities did not have cleaning protocols available.

Frequency of cleaning varied with over two thirds reporting that facilities were cleaned at least once per day. Materials required for cleaning were available in over half of the facilities (56%), and almost all facilities (98%) had at least some cleaning materials available. In terms of cleaning products 80% and 67% of facilities reported having detergent and disinfectant available, respectively. Only one facility had records for cleaning that were completed daily.

Training and management

WASH and IPC management and financing were limited across all facilities. Not one facility reported having an IPC committee and only 13% said they had routine management meetings to discuss WASH issues or plans. Only two facilities reported having a budget for operating and maintaining small infrastructure needs such as water supply and toilets.

Training gaps were identified for cleaning and IPC. Just over half of facilities reported that at least some staff had been trained in essential cleaning and IPC.

COVID-19 Specific Analysis

COVID-19 specific questions were asked during the survey in line with global and national recommendations.[11] In relation to general COVID-19 WASH-related issues assessed almost all facilities reported that at least one of their staff had participated in COVID-19 training and planning (93%) and in almost all cases, the staff member responsible for infection prevention and control had participated in COVID-19 specific training (85%). Three quarters of facilities reported having posters for social distancing in waiting areas (76%). Of those with posters, not all facilities had sufficient space in the waiting room to accommodate adequate spacing (~2m between each person) (20%). Just over half of facilities reported fewer patient visits during the state of emergency for COVID-19 (56%) and a quarter (25%) experienced an increase in patients. Most facilities reported having sufficient ventilation (93%).

While it was reported that almost all facilities had at least some of their staff participate in COVID-19 training (93%), this was lower for cleaners. For those facilities that did have cleaners, 20% did not participate in COVID-19 training. Health promotion was central to Timor-Leste's COVID-19 response. Almost all facilities reported providing hygiene promotion (95%), which was most commonly delivered by health care workers such as doctors, nurse or midwives (96%). Almost all facilities that provided hygiene promotion felt that patients were adequately informed on hand hygiene (49/52, 94%).

In a more specific analysis, relevant data have been compared to requirements outlined in the *Timor-Leste COVID-19 Clinical Management Guidelines* (English).[12] The clinical guidelines have several specifications related to WASH, specifically. Below is a summary of whether these would be met related to WASH-related data that emerged from this study.

Health care staff should wash their hands frequently, including before and after touching every patient and their surrounds

Cannot be met in at least half of facilities. This study showed that less than half of all facilities (49%) had adequate hand hygiene at point of care – this means water and soap or alcohol-based hand rub was not present where care is delivered to patients. Without this, the above guidelines would not be able to be met in half of facilities.

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11 WHO. (2020) Water, sanitation, hygiene, and waste management for SARS-CoV-2, the virus that causes COVID-19. Geneva. https://www.who.int/publications/i/item/WHO-2019-nCoV-IPC-WASH-2020.4

12 Ministry of Health, Timor-Leste (2020) Timor-Leste COVID-19 Clinical Management Guidelines (English). Dili.

Handwashing and cleaning facilities in Community Health Center Alas, Manufahi.

Medical equipment should be disinfected between every patient and single use items discarded

The first element of this guideline (disinfection) would not be met in 33% of facilities and less than 10% of facilities would be able to safely manage single use waste. The data in this study show that 67% of facilities reported having disinfectant available. Without disinfectant available, medical equipment would not be able to be disinfected as the guidelines requires. Waste segregation, safe treatment and disposal was also limited. Segregation at point of care into three labelled bins for sharps, infectious and general waste occurs in over a third of facilities but it was common that bins were over 75% full, were not adequately labelled, or not present in the consultation area. Fewer than one in ten facilities reported safely managing waste. Therefore, the vast majority of facilities would not be able to safely manage the waste component of this guideline.

Family members should be reminded to wash their hands often

Approximately half of all facilities could support the implementation of this guideline. The presence of handwashing stations with soap and water in waiting rooms and entrances and exits of facilities for use by family members were available in just over half of all facilities. Posters displaying hand hygiene technique were common. This indicates that in at least half of facilities, this guideline could be met.

PPE should be available for staff managing waste

Just under half of facilities could meet this guideline. It was reported that only 7/55 facilities (13%) had sufficient PPE for health care waste management staff. An additional 19/55 said that some was available but over half (52%) reported having no PPE available for waste staff. Without this PPE available less than half of facilities could meet this guideline.

Hand hygiene must be available for waste staff

Over half of facilities could meet this guideline. One fifth (12/55) of facilities reported having hand hygiene facilities (presence of soap and water) where waste was managed and a third (19/55) reported that it was present in some of the locations. However, 44% (24/55) reported no hand hygiene facilities where waste was managed. Without hand hygiene facilities present, waste management staff would be unable to wash hands near where waste is managed.

Sharps must be disposed of in sharps containers

Half of facilities could meet this guideline. Almost all facilities had a designated sharps bin at points of care (47/55). However, only half reported treating and safely disposing of sharps according to WHO standards (50.9%). While sharps could be segregated at points of care to meet this guideline in almost all facilities, the sharps can only be safely managed to final disposal in half of the facilities.

Waste managed according to routine procedures including solid biological waste being incinerated

Most facilities would not be able to meet this guideline. Fewer than one in ten facilities (9%) reported segregating and disposing of general, sharps and infectious waste safely (as according to WHO guidelines). Only one facility reported incineration infectious waste with opening burning (22/55) being reported as the most common method for treating and disposing of infectious waste. This guideline could not be met in almost all facilities as waste management procedures and infrastructure is lacking.

A cleaning roster must exist for each facility and be followed

Most facilities would not meet this guideline. Only 3 facilities in this survey reported having a cleaning record that was available and used or available and only sometimes used. The remaining 52 facilities did not report having a cleaning record. In addition, only 4% of facilities met the basic service level for cleaning which means only two facilities had protocols available for cleaning and that staff who were responsible for cleaning had been trained. Without rosters, training and protocols, this guideline could not be met.

High touch surfaces should be cleaned at least daily

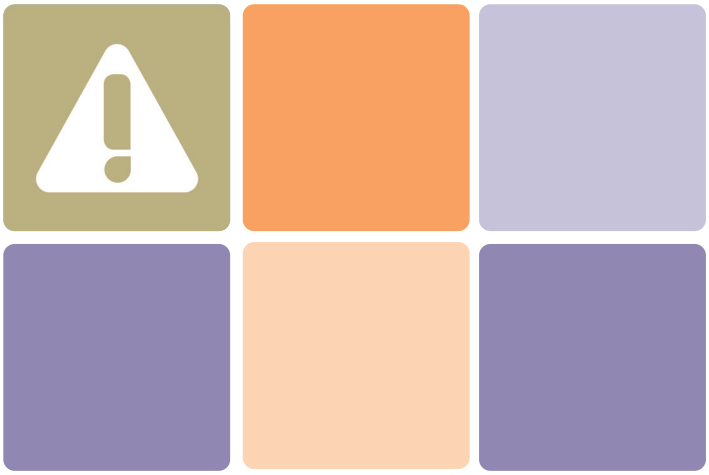
This guideline could be met in over two thirds of the facilities. Almost 70% of facilities (38/55) reported cleaning the facility at least once a day. However, it is important to note that protocols were not available in most facilities and records were rarely kept.

The breakdown of WASH-related guidelines in the COVID-19 Clinical Management Guidelines indicate that many facilities do not have adequate WASH readiness, services and systems to support the implementation and adherence to the guidelines.

Limitations

The data collected in this report are collected from all government health care facilities in Liquiçá and Manufahi. There are private clinics operating in these settings that were not included in this study and further investigation of their WASH conditions is warranted. While the study provides an accurate representation of government health care facilities for these two municipalities, it is not nationally representative. Further investigation would be required to understand the detailed WASH conditions nationally.

This assessment focused on WASH services and self-reported practices at health care facilities. Based on the COVID-19 restriction at the time of data collection, it was designed to be a digital, quantitative assessment only, to minimise face-to-face contact. Without observational and qualitative components, it is difficult to assess knowledge and understand practice and behaviours of WASH accurately. The assessment was conducted at one point in time and only reflects data at this time. This is particularly important to note for seasonal considerations, particularly for water availability which could change over the year, and influence results related to water.



Discussion and Recommendations

The recommendations have been framed in line with WHO and UNICEF's Practical Steps for WASH in health care facilities[13] which cover areas that countries must address to work towards implementing the 2019 World Health Assembly 72.7 Resolution on WASH in health care facilities.

Conduct situation analysis and assessment

This assessment has developed a complete data set of WASH in health care facilities conditions across Liquiçá and Manufahi but is not nationally representative. It complements other assessments conducted by other stakeholders such as UNICEF. While WASH conditions are important to understand, and be routinely monitored, to develop a plan of action, further upstream analysis is required to understand the enabling policy and guideline environment supporting WASH services in addition, this assessment.

Recommendation:

- *Undertake a more detailed national analysis of policies and priorities for WASH in HCF.*
- *Complement the assessment with further qualitative and observational studies to understand upstream determinants of WASH-related processes and practices.*
- *Undertake this assessment in other municipalities to gain a more comprehensive understanding of WASH in health care facilities nationally.*

Set targets and define roadmap

While aspirations have been articulated in the national sanitation policy around achieving hygienic suco status, a clear roadmap for reaching basic WASH services in all health care facilities by 2030 has not been completed. This assessment showed gaps in WASH services and related system support such as guidelines, training, practices, human resources and supply chains. In order to reach SDG target by 2030, a comprehensive roadmap will be needed to plan incremental steps towards achieving universal access to WASH in health care facilities and good IPC.

The analysis showed that WASH-readiness in facilities was limited, especially to be able to implement COVID-19 related guidelines. Including WASH in health care facilities targets in pandemic recovery and preparedness plans and policies is also essential.

Recommendation:

- *Develop a costed national and municipality-wide roadmap with incremental steps for achieving basic WASH services in all health care facilities by 2030 with clear roles and responsibilities for WASH and health stakeholders.*
- *Include targets for WASH in HCF within COVID-19 recovery and preparedness plans and policies.*

[13] WHO, UNICEF (2019) Water, sanitation and hygiene in health care facilities: practical steps to achieve universal access. Geneva.

Establish national standards and accountability mechanisms

The gaps in WASH services and the enabling environment could be, in part, due to the lack of guidelines and standard operating procedures for WASH and related IPC in health care facilities. Facilities will not be able to improve WASH and be held accountable without endorsed guidelines and accountability mechanisms to enforce these guidelines. Standards for WASH would be able to set a minimum standard of service required by each level of care. This should extend beyond basic monitoring measure outlined by JMP to include more detailed aspects of WASH as assessed in this study.

Beyond standards, standard operating procedures are required at the facility level to support good WASH system management and behaviours. The study revealed gaps in safe waste segregation and management, alongside very limited protocols and cleaning rosters. Guidelines should be translated to practical protocols and standard operating procedures at the facility level and all responsible staff should be trained and receive supporting supervision to implement the protocols safely.

Recommendation:

- *Develop and endorse standards for WASH in health care facilities.*
- *Develop accountability mechanism for supporting adherence to WASH standards through existing municipal structures and processes.*
- *Develop protocols and standard operating procedures for WASH guidelines, including for cleaning protocols and health care waste procedures and safe management.*
- *Ensure adequate training and supportive supervision of staff when implanting guidelines and protocols related to WASH.*

Improve and maintain infrastructure

This study showed several gaps in WASH-related infrastructure. Most facilities had a water supply available and at least one improved toilet. However, water was not always reliable, with seasonal shortages common. While improved toilets existed, they were often not accessible to people with limited mobility and they did not meet the needs of women. Modifications to existing sanitation services will be required. This includes to safely manage faecal waste. Very few facilities reported safely managing faecal waste. Hand hygiene infrastructure and consumables (soap, gloves and single use towels) is urgent. About half of facilities did not meet a basic service level for hand hygiene and over two fifths has no service level. With handwashing essential for safe care and COVID-19 prevention, hand hygiene needs urgent attention.

Major infrastructure and practice gaps were identified for health care waste management. The provision of safe and environmentally sounds health care waste treatment and disposal infrastructure is urgent. While effort must be made to better segregate waste at point of generation, very little waste in then safely treated and disposed of. This poses risks to health care workers, patients, their families, the surrounding community and the environment.

While building new infrastructure and modifying and improving existing services will be essential, this can't be done in a standalone way. Routine improvement mechanisms must be put in place, such as WHO/UNICEF WASH FIT mechanism.1 Routine assessments will be required over time to address incremental, achievable improvement to WASH infrastructure and ensure there is a supportive and adequate operation and maintenance to support infrastructure.

Recommendation:

- *Design a contextualised routine assessment mechanism (such as WASH FIT) to implement at facilities to provide periodic assessment of WASH needs and progress towards achieving national standards.*
- *Enable financing for capital investment requirements for WASH infrastructure as well as ongoing budget needs for operation and maintenance of infrastructure.*
- *Develop standard design documents and costing tools to support quality infrastructure and associated budget requirements.*
- *Ensure infrastructure is co-designed with users, particularly women and disabled people's organisations, to ensure all infrastructure is accessible and usable by all.*

Monitor and review data

Currently there is no routine monitoring of the JMP basic service indicators for WASH in health care facilities. In order to track progress to national roadmaps and basic needs at health care facilities, the JMP indicators should be built into routine monitoring mechanisms and data shared and used by relevant WASH and health stakeholders at the municipal and national levels. Data should be routine and collected at least biannually to account for seasonal differences across the year.

In addition, particular attention should be made to develop indicators for disaggregating patient data by disability, age, gender and other relevant measures. WASH services must be accessible and usable to all, just as all users must be supported adequately to use health care facilities. This data would enable WASH services to meet the needs of users, and understand users requirements at each facility.

In order to review data and prioritise plans and investments, coordination mechanisms must be in place with relevant WASH and health stakeholders at the national and municipal level. Such coordination is important not only to review data and build necessary action plans, it is also critical to establishing clear roles and responsibilities to drive progress on WASH in health care facilities.

Recommendation:

- *Establish coordination mechanisms between WASH and health stakeholders at municipal and national levels to review WASH data and budget, plan and adhere to improving WASH requirements.*
- *Embed all five JMP basic service level indicators into routine monitoring mechanisms alongside other measures to disaggregate by gender, age, and disability.*
- *Routinely review data and develop actionable plans to address WASH needs.*

Develop health workforce

Human resource gaps were found at all facilities and across all cadres in this assessment. With particular focus on WASH-related workforce, cleaners were not commonly appointed at facilities and rarely received training. Training gaps were also identified for clinical staff on WASH and IPC. WASH services and infrastructure are only as useful as WASH behaviours are practiced to support good infection prevention and safe quality of care. The provision of adequate human resources to uphold WASH and IPC is also required.

To address WASH needs, clear roles and responsibilities for all WASH-related needs must be available and articulated. This includes roles for non-medical staff such as cleaners, waste management staff and operational and maintenance personnel.

Recommendation:

- *Develop and make available clear job descriptions and roles and responsibilities for non-medical staff, especially cleaners.*
- *Develop and deliver a cleaning training program for those responsible for cleaning. The training must be delivered in a participatory way and be targeted at the education and literacy level of staff.*
- *Human resource requirements for WASH at each level of health care facility including numbers of cleaners and operation and maintenance staff should be articulated and plans to ensure adequate human resources are met put in place.*
- *Ensure adequate WASH and IPC pre-service and routine in-service training is delivered to all relevant staff.*
- *Foster leadership and supportive supervision of health care staff at the facility level to practice good WASH behaviours, including hand hygiene and cleaning.*

Engage communities

While the quantitative nature of this assessment meant that understanding dynamics between communities and the health facility was not possible, community ownership of water supply was reported in some facilities. Engaging the communities in service provision where there are joint responsibilities, for example water supply, will be essential.

Recommendation:

- *Further investigate the role of the community in supporting WASH improvements and maintenance in health care facilities.*
- *Develop clear roles and responsibilities, particularly relating to water service management with water user groups (AGMFs) and associated facilities.*
- *Ensure health care facilities are involved in water safety planning processes.*
- *Involve communities in infrastructure design, to ensure improvement meet community needs.*

Conduct operational research and share learning

This assessment provides a snapshot of WASH in health care facilities. Further research is required in several areas. One area not addressed in this study was observing behaviours and understanding drivers of good WASH behaviours such as hand hygiene, cleaning, waste management processes and overall leadership on WASH and IPC. As plans are implemented to improve WASH in health care facilities, learning among health and WASH stakeholders should be shared. This includes effective models of governance, behaviours, technologies and accountability.

Recommendation:

- *Develop a national learning platform for WASH in HCF to share experiences, learning and align all improvement with national targets and policies.*
- *Undertake further research into WASH-related behaviours, their determinants and effective methods for improving behaviours at health care facilities.*

Other – financing, governance and pandemic preparedness

To support all the above recommendations, adequate financing is required. While there might be significant capital investments costs to improve infrastructure, adequate financing must be established to support ongoing operation and maintenance of WASH services. In addition, adequate human resources must be costed for. Life cycle costing analysis should be undertaken to estimate costs required to achieve basic WASH services levels (and advanced service levels in facilities that provide sophisticated medical care). Costing tools will need to be developed so facilities and municipal government can estimate costs and budget accordingly.

Recommendation:

- *Develop costing tools and understand costing needs (through life cycle costing analyses) to ensure budgets can be developed and met to improve and sustain WASH services.*
- *Understand financing mechanisms so that facilities and government can access the funding required to support WASH services.*

This study showed major gaps in WASH services required to support pandemic preparedness and response, as highlighted through the WASH deficiencies to implementing the COVID-19 Clinical Management guidelines. To provide the best response and readiness, adequate WASH must be in place. This includes to be adaptive to future climate-related risks in the future.

Recommendation:

- *Ensure WASH in health care facilities targets and activities are prioritised in outbreak preparedness and response efforts.*

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Annex 1. JMP Service Levels

Reference: Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF), 2018. Licence: CC BY-NC-SA 3.0 IGO.

WATER	SANITATION	HYGIENE	HEALTH CARE WASTE	ENVIRONMENTAL CLEANING
Advance service To be defined at national level	**Advance service** To be defined at national level	**Advance service** To be defined at national level	**Advance service** To be defined at national level	**Advance service** To be defined at national level
Basic service Water is available from an improved source located on premises.	**Basic service** Improved sanitation facilities are usable with at least one toilet dedicate for staff, at least one sex-sparated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility.	**Basic service** Funcional hand hygiene facilites (with water and soap and/or alcohol based hand rub) are aviliable at points of care, and within 5 meters of toilets.	**Basic service** Waste is safely segregated into at least three bins and sharps and infectious waste are treated ad disposed of safely.	**Basic service** Basic protocol for cleaning available, and staff with cleaning responsibilities have all received training.
Limited service An improved water source is within 500 meters of the facility, but not all rwuirements for basic service are met.	**Limited service** At least one improved sanitation facility, but not all requirements for basic service are met.	**Limited service** Funcional hand hygiene facilites are aviliable at either points of care or toilets, but not both.	**Limited service** There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met.	**Limited service** There are cleaning protocols, or at least some staff have recived training on cleaning.
No service Water is taken from unprotected dug wells or springs, or surface water sources; or an improved source that is more than 500 m from the facility; or the facility has no water source.	**No service** Toilet facilities are unimproved (pit latrines without a slab or platform, hanging latrines and bucket latrines), or there are no toilets or latrines at the facility.	**No service** No funcional hand hygiene facilities are aviliable at either points of care or toilets	**No service** There are no separate bins for sharps or infectious waste, and sharps and/ or infectious waste treated/disposed of.	**No service** No cleaning protocols are available, and no staff have received training on cleaning.

Incinerator unit in Community Health Center Turiscai, Manufahi.

Australian Aid

WaterAid