Managing water safety in health care facilities: a quick guide

DRAFT VERSION-to be reviewed and revised further for Global Use

with focus on Health Care Facilities in Ukraine

February 2026

Introduction and Ukrainian Context

This quick guide is meant to be used as part of a wider quality improvement process, including through the Water and Sanitation for Health Facility Improvement Tool (WASH FIT). It focuses on water management and water quality and is meant to help guide those in charge of water services within health care facilities on key tasks and corrective actions.

This version is specifically for Ukraine. Key factors contributing to water related health risks in Ukraine include poor condition of water treatment facilities and supply networks, lack of source water protection and limited laboratory capacity, control and regulation. Select Ukraine, EU and WHO limits for select water quality parameters are listed below.

Parameter (minimum requirenmnets)	Ukraine standard (DSanPin 2.2.4-171-10)	EU Directive 2020-2184	WHO Guidelines on Drinking-Water Quality, 4^{th} edition (2022)
Turbidity	<= 1.0-3.5 HOK[1]	According to acceptability of consumer	Ideally < 1 NTU for disinfection and aesthetic purposes. If this is not possible, the aim should be to keep turbidity < 5 NTU.
Free chlorine residual	0.3-0.5 mg/dm^3 equivalent to (0.3-0.5 mg/l)	-	≥ 0.2 mg/l at the point of delivery for piped supplies, or at the point of use.
E. coli	0 CFU/100 ml	0 CFU/100 ml	0 CFU/100 ml
Legionella	No standard	< 1000 CFU/l	No guideline value, but monitor and control according to risk
Nitrates	< 50 mg/l	[nitrates]/50 + [nitrites]/3≤1 mg/l	< 50 mg/l
Nitrites	< 0.5 mg/l		< 3 mg/l
Arsenic	< 0.01 mg/l	< 0.01 mg/l	< 0.01 mg/l
Fluorides	< 0.7-1.5 mg/l	< 1.5 mg/L	< 1.5 mg/l
Lead	< 0.01 mg/l	< 0.01 mg/l	< 0.01 mg/l

PART 1: Understanding (and mapping) the HCF water supply system

Sections A, B and **C** of this guide provide templates for systematically collecting and documenting key information on the water source(s) used in the health care facility and any water storage facilities available. **Section D** provides guidance on essential water quality monitoring and possible corrective actions that can

[1] HOK is an optical turbidity unit. It is based on light attenuation while NTU is based on light scattering. While it is not possible to do a direct conversion, in general 1 HOK is approximately 2 NTU.

be taken in response to problems identified. The Annexes contain templates on calculating water volume needs, recording monitoring checks and tracking corrective actions, and relevant sanitation inspection forms. In carrying out the activities, it is important that the specific person(s) are identified and named in order to ensure appropriate accountability and follow-up.

This guide with checklist is not meant to supersede a water safety plan but rather to provide an entry point for a more systematic and risk-based approach to managing water quality risks, and the first step in developing a more detailed water safety plan.

General information

Health facility name________________________________ Health facility city_____________ Oblast_______

Type of facility (primary care, secondary hospital, tertiary hospital)_____________

Number of beds _______________ Number of patients, average, on weekly basis __________

Name of evaluator(s)____

Date___________________

A. Water Source

Develop an overview of all water sources of water used in the health care facility for different purposes. The uses may be permanent or temporary, and may be from the mains supply, local wells or boreholes in the community or on the site of the health care facility, or trucked water.

Treatment may be applied at the central level by the *Vodokanal* service provider if the supply is from a centralized system. Treatment may also be applied at the level of the health care facility, either in addition to centralized treatment or, for example, if a local, non-centralized source is used.

Note: It is important that those responsible for water services in health care facilities to confirm with the local *Vodokanal* service provider the level of treatment provided by the central supply. Communication protocols should be established and implemented for the *Vodokanals* to share routine water quality monitoring information, and for the health care facilities to receive timely information on any monitoring results or incidents that may compromise water quality and safety, and the adequacy of supply.

Water source	**Type**	**Average volume (m3/week)**	**Purpose**	**Treatment onsite and/or offsite**	**Functionality**	**Water quality information (see section D)**
	Borehole *Shallow well* *Trucked water* *Piped supply*	*Confirmed estimate*	*All uses* *Specific uses only, including drinking, technical/non potable*	*None/unknown* *Reverse osmosis* *Chlorination* *Boiling* *Other*	*Working at full capacity* *Not working at full capacity (list reason): depressurization, intermittent flow, main break)* *Not working (list reason)*	*Available* *Not available*
#1 (name)						
#2 (name)						
#3 (name)						
#4 (name)						
Total available water (m3/week)			Note: Add all sources			
Total water needs (m3/week)			Note: Calculate based on services and needs (see Annex 1)			
Does water storage meet needs? If not, what is the deficit?			Note: Subtract Available water/week from needs/week			

B. Water Storage

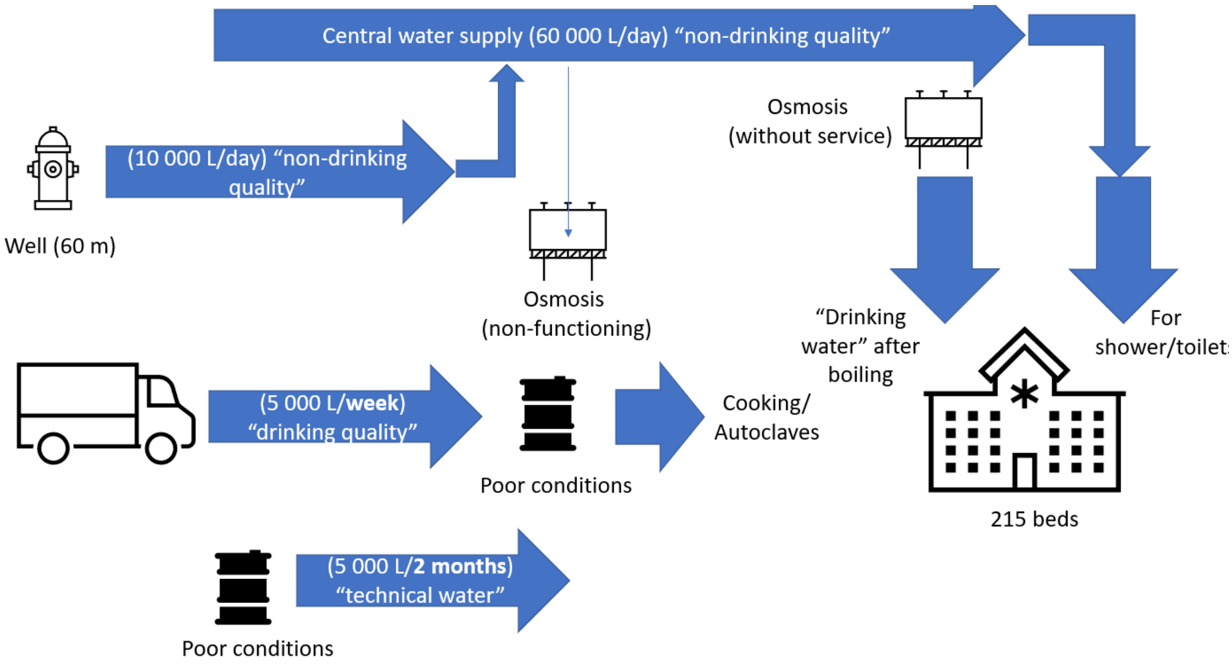
Develop an overview of all water storage facilities used in the health care facility, including their current capacity and design. Such an overview will help to develop standard operating procedures (SOPs) for routine inspection, and cleaning and maintenance activities to be used by facility staff to keep storage facilities clean and safe.

Water Storage	**Type and Materials**	**Volume** (L)	**Purpose**	**On-site treatment**	**Functionality**	**Storage covered**
	(Rooftop tank water tower, barrel inside building, underground tank, drinking-water container or bottles, other; metal/iron, cement, PVC plastic)	*Confirmed estimate*	*(Use including drinking water, technical/non potable, medical uses for dialysis or sterilization)*	*(None/unknown, reverse osmosis, chlorination, boiling, other)*	*(Functional and with water; functional and no water; non-functional)*	*(Yes/no)*
#1 (name)						
#2 (name)						
#3 (name)						
#4 (name)						
#5 (name)						
#6 (name)						
Total Available All Water Storage (L)		Add all sources				
Total Water Storage needs (L)- See Annex 1 for reference table			Stored water should supply 48 hours of needs			

C. General Schematic of Water System

Use this space to draw a schematic of water sources, water storage and main pipes within the facility.

The scheme below is provided for illustration purposes only and should not be considered a sample. The schematic should be designed based on the healthcare facility's internal water supply system



PART II Guiding Checklist

D. Regular operation and maintenance, operational monitoring and corrective actions

This section provides examples of the key preventative actions or operation and maintenance task as well as what to check and how often for operational monitoring. It also gives examples of the critical limits and what to if those limits are exceeded (e.g. corrective action). The suggested frequencies are based on normal operating conditions. **Table D1** provides general information that can be adapted to suit the local context of a specific health care facility as needed. It is also important to clearly state who will conduct the monitoring, to whom results will be shared, and what mechanisms are in place for follow-up where actions need to be taken.

In the event of partial or complete system failure due to power outage, attack or other cause, sudden change in staff availability, actions will need to be reduced with the priority on obtaining **a sufficient quantity of water of the highest quality possible, ideally ensuring it is minimally disinfected**.

Water quality is the last section (D5) and actions are provided in a progressive order, starting with monitoring that can be done by trained staff using basic field-test kits without the need for any water quality testing laboratory; these parameters include monitoring turbidity, chlorine residual and pH. Where resources and time allow, monitoring also for faecal indicator bacteria is recommended (i.e. *E. coli*) to verify the safety of the drinking-water supply. It is recommended to choose critical points on the basis of risk on which to conduct water quality checks with the possibility or rotating these points in larger facilities to obtain a more complete understanding of the water quality situation.

It is important to note that all individuals conducting rehabilitation or maintenance of any pipes, toilets, water boilers, etc. wear appropriate personal protective equipment including to protect against exposure to asbestos. This would include use of a respirator mask (P2 or FFP3 rated), overalls, chemical resistant gloves and eye protection.

D1. Daily to weekly activities

System element	Operation and maintenance	Operational monitoring				
		What to monitor	**Where to monitor**	**Critical limit (s)**	**Possible corrective actions if acceptable limits are exceeded**	**Responsible Department and person**
Plumbing/ Connection to centralized system	-Check for leaks throughout system at critical points (e.g. valves, under sinks, etc); repair or replace pipes, fittings as required	-Check valves where main supply connects to storage for leakage - Check showers, handwash stations, eyewash stations are	-All main valve connections -All showers, handwash and eyewash stations	-Any water leaking from taps	-Determine what is causing the leak; tighten and/or install replacement parts	*[This row is to be completed at the facility level]*

		functioning correctly and not leaking, and are in a sanitary condition				
	-Check toilets to see flushing properly and no leaking tanks; repair or replace parts as required	-Proper/expected functioning of toilets, and sanitary condition	-All toilets	-Any clogged or leaking toilet - Toilets or surrounding area is in an unsanitary condition	-Unclog using plunger or other tool; if still clogged inspect plumbing to determine cause - Clean and sanitize the toilets or surrounding area	
Borehole/well	-Check pump is working, repair or replace damaged parts, clean and disinfect pump	-Pump operating at designated power/volume (view meter)	-At pump house	-No power or pumping -High pitched whining noises -Pump warm/overheating	-Determine if non-pumping related to power supply, damage to well or motor or other issue by checking key components of motor -If power issue, connect to back-up supply or work to secure additional power source (e.g. through generator)	
		-Check oil levels	-At pump house	-Oil level below indicated range	-Add appropriate oil and volume	
	-Network pipe cleaning -Inspect and maintain critical network components (break-pressure tanks, valve boxes, valves).	-Water from main pipe is flowing	-At main inlet valve	-Low or no flow	-Check main valves and plumbing connections to ensure no leaks within facility -Call water supplier/Vodolkanal to inquire about disruption to services and confirm water quality supplied	
Taps	-Check all taps and associated valves and branch plumbing in facility for leakage and functionality; repair or replace damaged taps, angle stops, mixing valves, connectors, etc..	-Check all taps in facility for leakage and functionality, and sanitary condition	-Minimally all taps in bathrooms and select, priority care areas (e.g. intensive care units, maternity units) on a rolling basis.	-Any water leaking from taps; taps not working - Tap or surrounding area is in an unsanitary condition	-Determine what is causing the leak; tighten and/or install replacement parts - Clean and sanitize the taps or surrounding area	

	-Check to see sinks draining properly by filling with some water and allowing to drain	-Flow rate of water leaving sink -Debris or any object in drain preventing flow	-See above	-Water doesn't drain or drains very slowly	-Clean drain area using pipe cleaner -Remove sink trap underneath sink and remove any trapped material	
	-Check soap dispenser next to taps is functioning	-Check for soap in the dispenser -Check dispenser providing soap	-See above	-No dispenser or dispenser broken/not functioning -No soap	-Refill soap and talk to person responsible to ensure regular re-filling -Replace dispenser if missing/broken	
Drinking-water containers	-Inspect containers for signs of damage, leaks, etc; repair or replace as required	-Check containers have water, are visibly clean, securely covered and not leaking. - Check that the containers have not been used to store liquids other than drinking-water (including water of lesser quality, detergents, oils, medical-related liquids etc.)	-All containers	-Containers empty/no water, are damaged/leaking/uncovered, or are in an unsanitary condition	-If containers filled manually, check with personnel in charge on why not full and develop plan/actions to ensure regular filling and checking - Clean and sanitize containers - Provide securely fitting covers - Repair/replace damaged containers	
On-site water treatment	-Check any on-site treatment technologies including those used to treat water for drinking, medical purposes or non-technical water	-If device connected to electrical outlet, power indicator shows power -Device producing water and there are no leaks or obvious blockages	-Check all devices on a rolling basis that may be daily or weekly depending on number and purpose	-Device not powered and/or water not flowing through it -Device leaking -Water has unusual smell or color	-Check power being delivered, all power connections -Check and clean filter, if needed -If suspecting not operating correctly, check chlorine residual and/or *E. coli* of treated water	
Water heating	-Check water boilers/hot water heaters to ensure operating effectively	-Visually inspect for leaks (including drain pan), corrosion in connection points or damage -Check anode rod for corrosion -Test temperature and pressure relief valve	-All hot water heaters	-Device leaking -Temperature not expected value (< XX C) -Anode rod heavily corroded -Unusual smell or odor	-Determine place of leak and try to repair -Replace heavily corroded anode rod -Clear area to ensure nothing flammable nearby -Flush tank to remove sediment	

		-Ensure proper ventilation				

D2. Weekly to monthly Activities

System element	Operation and maintenance	What to monitor	Where	Critical limit (s)	Corrective actions if limits are exceeded	Responsible Department and person
Back up power for water supply	Inspect fuel level, oil level, and coolant levels. Check for leaks, loose connections, corrosion. Test run the generator (e.g. 10 to 20 mins.).	- Sufficient fuel and/or stored power, battery voltage, charge, any swelling/leaks, ventilation and all ports and connections functional	-Where generators are located; electrical connections to pumping	-Non-functional or no fuel or battery power	-Replace battery, add fuel/oil as needed	*[This row is to be completed at the facility level]*
Other (i.e. trucked water)	NA	-Water arrives on schedule and with agreed volume -Confirm with water supplier that water meets quality standards (e.g. for free chlorine residual, pH, *E. coli*)	-At agreed time/place upon arrival on-site	-Water does not arrive or arrives in insufficient amounts -Water quality data is not available or indicates contamination	-Discuss with health facility management and supplier if agreed schedule/quantity/quality is not being met to decide upon appropriate action - If microbiological water quality is in doubt, boil or disinfect water used for drinking and medical purposes (see section D4 on water quality for details)	
Plumbing	-Check septic system for standing water, sludge level	-Check for standing water around septic tank and leach-field	-Septic tank surroundings	-Standing water	-Determine cause of standing water; put in place measures to facilitate drainage	
Water storage tanks	-Inspect tank, access hatches, fittings (e.g. air vents, overflow pipes), and tank	-Check tanks not leaking, securely covered (including tight fitting access	All large storage tanks inside and on facility grounds.	- Water leaking from tank - Cover damaged or	-Determine cause/location of leak; repair/replace parts as needed -Close valve to tank to prevent further water entering and leaking	

within facility or on facility grounds	support base for signs of damage or failure	hatches that are closed and locked, if present).		missing - Access hatch insecurely fitted or open/unlocked	-Replace or repair cover -Replace or repair access hatch, and/or close/lock it	
		- Visually check that any overflow pipes or air vents have a functioning vermin-proof screen.	All large storage tanks inside and on facility grounds.	- Screens torn or broken	-Replace broken screens	
		- Visually check the inside of the tank to ensure there are no visible signs of contamination (e.g. floating material, animal activity, sediment buildup)	All large storage tanks inside and on facility grounds.	- Interior of tanks visibly dirty or animals present	-Completely drain and clean with detergent and disinfect tanks annually, or more frequently if there is an adverse event (e.g. damage/attack to water supply or tank, indication of contamination based on visual indication of the and/or water quality testing-see Section D4 for details)	

D3. Semi-annual/ Annual activities

System element	Operation and maintenance	Operational monitoring	Where	Critical limit (s)	Corrective action if acceptable limits are exceeded	Responsible Department/person
On-site piped supply from municipal network	-Check to see pipes well buried (to prevent freezing/thawing); additional checks if heavy rainfall, significant frost, explosive or other attacks - Regular water quality	- Check to see pipes well buried (to prevent freezing/thawing) and the absence of significant soil erosion above the pipe. As a general rule pipes should be below the frost line (> 1.5 m in cold climates) -Drain garden/street taps	-Throughout system until pipes enter building	-Pipes exposed -Pipes, ahead of frost, with water	-Replace any eroded earth around exposed pipework -Drain pipes that still contain water	*[This row is to be completed at the facility level]*

	monitoring should be conducted for the supply.	before first frost to prevent freezing of pipes				
Borehole/well	-Perform detailed inspection of borehole, including screen, for signs of damage **(Annually)**	-Monitor water yield and use to identify changes in production/yield	-At pump house	-Sediment blocking screen -Yield less than expected	-Unclog screen -Rehabilitate borehole (e.g. replace eroded earth around borehole) -Conduct more extensive check of all engine	
Plumbing	-Check sewage pipes leading to sewer system	-PIpes are not leaking, system not overflowing		-Overflowing pipes -Clogged pipes	-Clear and unclog pipes ensuring flow out of health care facility	
	-Check septic system for standing water, sludge level	-Level of sludge below baffles or not more than 1/3 of tank volume	-Within septic tank	-Higher than expected sludge level	-Arrange for de-sludging service and safe disposal of sludge	
Surface drainage	-Check that all drains are free of debris	-Debris clogging drains, overflowing stormwater drains/systems	-At all drains into stormwater system	-Clogged; water not able to flow	-Clear drains of debris	

D 4. Water quality monitoring and testing

This section summarizes the key water quality monitoring tasks which are presented in an incremental approach, starting with visual and physical inspections. Where there are resources and available time/staff, pH, turbidity and free chlorine residual should be regularly monitored and corrective actions taken if expected values are not met. The most advanced water quality monitoring and testing would include fecal indicator bacteria testing (*E. coli*).

In addition, depending on the source water quality and agricultural and industrial activities, nitrates may be of concern especially in facilities where water is used to make formula for infants who are at risk. Finally, lead examinations and actions are highlighted where lead plumbing may be used, and simple tests on temperature and flow may be done to assess optimal conditions and risk of *Legionella*.

Note – in contexts where arsenic, fluoride or manganese may be present in source waters, a risk assessment should be conducted to determine if these parameters are likely to occur at concentrations of concern and, therefore, included in monitoring programs.

Item/Action (listed incrementally, starting with basic and more advanced)	**What to monitor**	**Where**	**When**	**Critical limit (s)**	**Corrective actions if limits are exceeded**
-Visual and physical inspections	- check the appearance, taste and odour of the water	-Priority taps[2] -All water storage tanks -All drinking-water containers - all trucked water	-Daily[3]	- The following observed during visual inspection of the water may indicate problems with the water quality: cloudiness (e.g. turbidity); milkiness (e.g. air in the pipes); red/orange tinge or sediment (e.g. iron); brown/black tinge or sediment (e.g. manganese), blue (e.g. copper); eggy odour (e.g. hydrogen sulphide); metallic taste (e.g. general metal contamination)[4].	-Investigate the potential source with relevant stakeholders (e.g. water supplier, plumbers etc). If microbiological water quality is in doubt, boil or disinfect water used for drinking and medical purposes. -For sediment or other noticeable color for storage tanks and drinking water containers, clean with detergent and disinfect
-Basic quality parameters	-free chlorine residual (where	-Priority taps -All water storage tanks	-Daily[3]	-free chlorine residual < 0.2 mg/l	-Adjust chlorination to achieve a free chlorine residual at the point of use of greater than 0.2 mg/l - Monitor upstream of low chlorine fixtures to

[2] Priority taps are site specific but include those in wards with vulnerable patients (e.g. pediatrics, maternity, ICU), staff and patient bathrooms and where users may be taking water for drinking. Where there are a significant number of priority taps, these should be tested on a rolling basis.
[3] Except trucked water, which should be tested on arrival on-site and before discharge to the storage tank.
[4] Note that there may be multiple causes and/or other causes than those indicated in parentheses.

	chlorinated)	-All drinking-water containers			determine possible cause and extent of loss of disinfectant residual
	-turbidity	-Priority taps -All water storage tanks -All drinking-water containers	-Daily[3]	-<=1.0-3.5 HOK[5]	-Investigate the potential source with relevant stakeholders (e.g. water supplier, plumbers etc). If microbiological water quality is in doubt, boil or disinfect water used for drinking and medical purposes.
	pH (where chlorinated)	-Priority taps -All water storage tanks -All drinking-water containers	-Daily[3]	-pH < 6.5 or pH > 8.5	-Adjust pH to achieve range between 6.5 and 8.5
-fecal indicator bacteria testing	-check concentration of *E. coli* (mg/L)	-Priority taps on a rolling basis -All water storage tanks -Test select drinking-water containers on a rolling basis	- Monthly	- No *E. coli* detected in 100 ml sample.	- increase the free chlorine residual to 0.5 mg/l as a precautionary measure, and if sufficient water, flush affected water from the pipes and or storage tanks and re-test for *E. coli* **-** stop using water for drinking or medical uses until zero *E. coli* is found in the system and a sufficient free chlorine residual (at least 0.2 mg/l) is recorded. - investigate the potential source of the contamination and take appropriate remedial measures to eliminate the source. -For point of use drinking water containers explore locally available and affordable user-level treatment options that effectively remove bacteria, protozoa and viruses[6] -Check to ensure there are no cross connections at key points and high risk areas have backflow protection (e.g.

[5] According to WHO standards ideally < 1 NTU for disinfection and aesthetic purposes. If this is not possible, the aim should be to keep turbidity < 5 NTU. While HOK is a different type of optical turbidity measure, in general 1 HOK=2 NTU.

[6] Refer to the WHO International Scheme to Evaluate Household Water Treatment Options as well as the Ukraine Emergency Water Treatment Standards for performance criteria as well as a list of global products that effectively remove viruses, protozoa and bacteria from drinking water. https://www.who.int/tools/international-scheme-to-evaluate-household-water-treatment-technologies/products-evaluated

					taps in toilets)
-Nitrate testing[7]		-Priority taps -All water storage tanks -All drinking-water containers	-As needed; annually	> 50 mg/l (nitrate)	-stop using water for drinking and medical purposes; seek another water source that meets limits for nitrate or install reverse osmosis or ion exchange system to remove nitrates -before using water test to ensure it is within critical limits
-Lead inspection and testing[8]		-Priority taps -All water storage tanks	-As needed	> 0.01 mg/l[9]	-Replace pipes and piping components with low-lead or lead free alternatives (e.g. PVC, uPVD). If lead present and pipes not replaceable in short term, precautionary SOPs may be introduced to promote flushing at critical points.
-Assessing *Legionella* conditions (temperature, water flow)		-Priority taps -Select water storage tanks	-As needed	< 20 °C or > 50 °C[10]	-increase power/temperature of hot water heater to achieve > 50 °C; if not possible, consider heating less volume of water to achieve higher temperature -check that there are no “dead ends” or areas of low flow; if water supply has been stopped because of attack, lack of power, flush system before using water again.

[7] Methaemoglobinaemia (also known as blue baby syndrome) is complicated by the presence of microbial contamination and subsequent gastrointestinal infection, which can increase the risk for this group significantly. Authorities should therefore be all the more vigilant that water to be used for bottle-fed infants is microbiologically safe when nitrate is present at concentrations near or above the guideline value. In addition, because excessive boiling of water to ensure microbiological safety can concentrate levels of nitrate in the water, care should be taken to ensure that water is heated only until the water reaches a rolling boil.

[8] Refer to WHO Technical Brief on Lead on how to conduct testing for lead, and remedial actions to consider if present. https://www.who.int/publications/i/item/9789240020863

[9] It is important to note this is a provisional value (as of 2011) as there is no safe level of lead, especially for small children and immunocompromised individuals. Every effort should be made to maintain lead levels in drinking-water as low as reasonably practical and below the guideline value of 0.01 mg/l when resources are available.

[10] The growth of Legionella in drinking-water systems occurs in the range of 20 °C to 50 °C. Therefore, drinking-water temperatures should be maintained below 25°C, where possible, and ideally below 20 °C. In building hot water systems, temperatures should be maintained above 60 °C in water heaters and above 50 °C at all taps throughout the systems. However, maintaining hot water temperatures above 50 °C may represent a risk of scalding to young children, the elderly and other vulnerable groups. The use of thermostatic mixing valves with temperature setting of 41 °C to 45 °C and as close as possible to the point-of-use can reduce the risk of scalding. (After WHO, 2025.)

ANNEXES

Annex 1. Table to estimate water needs

Type of service	Water needs (L)	# patients/week	Need x patient	Total (L)
Outpatient	5/consultation			
Inpatient	40-60 /day			
Operating theater or maternity	100/intervention			
Severe acute respiratory disease isolation center	100/patient/day			
Wet supplementary feeding center	15/consultation			
Inpatient therapeutic feeding center	30/consultation			
			Total	

Annex 2a: Operational monitoring template: observations

Note - this table is a template that should be adapted to suit the local context

Operational monitoring template-observationsLocation (Add name/place)	***Observations***				***Actions***		
	Date	**Condition**	**Corrective actions needed**	**Responsible person**	**Date**	**Corrective actions taken**	**Responsible person**
Water Source #1______________							
Water Source #2_____________							
Water Source #3_____________							
Storage Tank #1______________							
Storage Tank #2______________							
Storage Tank #3______________							
Tap #1____________							
Tap #2 ____________							
Tap #3 ____________							
Drinking-water station #1____________							
Drinking-water station #2____________							
Drinking-water station #3____________							

2b. Operational monitoring template water quality

General water quality monitoring situation

Does the health facility have capabilities to regularly test water quality? (Yes/No)

If yes, what type of tests/equipment does the health care facility conduct?

If another entity conducts testing, please name/describe who this entity is?

In general, how often are water quality monitoring tests conducted?

With whom are the results shared?

What if any actions are taken?

Source Water Operational Monitoring

D: Daily, M: Monthly[11]

Date /time	Source water #1 ________________(name)				Source water #2 _______________(name)				Source water #3 _________________________(name)				Correction action /comments	Completed by:
	Turbidity[D] (HOK)[12]	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)		
Critical limit	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0		

[11] For parameters investigated at other frequencies (e.g. annually testing nitrates or lead), separate log sheets can be used.

[12] According to WHO standards ideally < 1 NTU for disinfection and aesthetic purposes. If this is not possible, the aim should be to keep turbidity < 5 NTU. While HOK is a different type of optical turbidity measure, in general 1 HOK=2 NTU.

Tap Water Operational Monitoring

W: Weekly, M: Monthly[11]

Date /time	Tap water #1 ________________(name)				Tap water #2 _______________(name)				Tap water #3 _________________________(name)				Correction action /comments	Completed by:
	Turbidity[D] (HOK)[13]	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)		
Critical limit	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0		

[13] According to WHO standards ideally < 1 NTU for disinfection and aesthetic purposes. If this is not possible, the aim should be to keep turbidity < 5 NTU. While HOK is a different type of optical turbidity measure, in general 1 HOK=2 NTU.

Drinking-water stations (select on rolling basis)

D: Daily, M: Monthly[11]

Date /time	Drinking-water container #1 ________________(name)				Drinking-water container #2 _______________(name)				Drinking-water container #3 _________________________(name)				Correction action /comments	Completed by:
	Turbidity[D] (HOK)[14]	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	e. Coli[M] (CFU/100 ml)	Turbidity[D] (HOK)	pH[D]	Free Chlorine [D] (mg/L)	E. coli[M] (CFU/100 ml)		
Critical limit	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0	<=1.0-3.5	< 6.5 or > 8.5	< 0.2	>0		

[14] According to WHO standards ideally < 1 NTU for disinfection and aesthetic purposes. If this is not possible, the aim should be to keep turbidity < 5 NTU. While HOK is a different type of optical turbidity measure, in general 1 HOK=2 NTU.

Annex 3. Key Resources

WHO 2011. Water Safety in Buildings. https://www.who.int/publications/i/item/9789241548106

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