



# National situational analysis of water, sanitation and hygiene in health-care facilities in Montenegro

SUMMARY REPORT



## ABSTRACT

Providing safe water, sanitation and hygiene (WASH) services, along with effective waste management, in health-care facilities is essential for delivering high-quality health care. Recent resolutions by the World Health Assembly and the United Nations General Assembly have emphasized the critical need to enhance WASH services to achieve universal health coverage and improve readiness for health and climate-related risks. In the WHO European Region, countries have also committed to these goals through the Budapest Declaration on Environment and Health and the Protocol on Water and Health. This report presents the findings of a comprehensive national assessment in Montenegro, which aligns with international commitments. The assessment identified both strengths and challenges in national governance; this information will inform national development strategies, aiming to improve WASH services for better health-care quality. It also provided valuable insights into the current state of WASH services in health-care facilities, highlighting national priorities and specific actions needed for improvement.

## KEYWORDS

WATER SUPPLY  
SANITATION  
HYGIENE  
WASTE MANAGEMENT  
HEALTH FACILITIES  
UNIVERSAL HEALTH COVERAGE  
PATIENT SAFETY

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# Abbreviations

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<b>COVID-19</b>	coronavirus disease
<b>IPC</b>	infection prevention and control
<b>JMP</b>	Joint Monitoring Programme for Water Supply, Sanitation and Hygiene
<b>SDG</b>	Sustainable Development Goal
<b>UNICEF</b>	United Nations Children's Fund
<b>WASH</b>	water, sanitation and hygiene
<b>WASH FIT</b>	Water and sanitation for health facility improvement tool

# Introduction

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Water, sanitation and hygiene (WASH) are essential environmental determinants of health and well-being. Water and sanitation are recognized human rights, and their fulfilment is in the focus of the 2030 Agenda for Sustainable Development – specifically under Sustainable Development Goal (SDG) 6 on water and sanitation and SDG 3 on health (Fig. 1). Strengthening WASH services has also proved

to be an effective intervention for prevention and control of coronavirus disease (COVID-19) and other infectious diseases. Provision of safe WASH services and adequate waste management in health-care facilities is an essential aspect of ensuring high-quality health care, preventing infections and safeguarding maternal and newborn health (7), among others.

**Fig.1. SDGs and targets relevant to WASH in health-care facilities**

 <b>6</b> CLEAN WATER AND SANITATION	<b>SDG 6</b> <b>Ensure availability and sustainable management of water and sanitation for all</b>	<b>Targets</b> <b>6.1</b> By 2030, achieve universal and equitable access to safe and affordable drinking water for all <b>6.2</b> By 2030, achieve access to adequate and equitable sanitation and hygiene for all ... paying special attention to the needs of women and girls and those in vulnerable situations
 <b>3</b> GOOD HEALTH AND WELL-BEING	<b>SDG 3</b> <b>Ensure healthy lives and promote well-being for all at all ages</b>	<b>Target</b> <b>3.8</b> Achieve universal health coverage, including ... access to quality essential health-care services...

Source: United Nations (2).

On World Water Day 2018, the United Nations Secretary-General made a global call to action on WASH in all health-care facilities. In 2019, 194 countries unanimously adopted resolution WHA72.7 on WASH in health-care facilities at the Seventy-second World Health Assembly (3). This stressed the fundamental importance of adequate WASH services in achieving universal health coverage, and urged Member States to accelerate action towards attainment of the WASH-related commitments, such as those expressed by the SDGs. This call was complemented by resolution WHA73.1 on COVID-19 response of 2020 (4), which urged countries to conduct comprehensive assessments and support access to safe WASH and infection prevention and control (IPC) in health-care facilities. In support of the resolution, WHO and the United Nations Children's Fund (UNICEF) developed guidance on eight recommended practical steps to advance quality of care through improved WASH in health-care facilities at the national level (5). The international commitment was reconfirmed in 2023, with a resolution adopted by the United Nations

General Assembly (6) recalling the importance of the previous commitments and encouraging countries to mainstream efforts. In particular, this highlighted the need to integrate these essential services into national health planning and the requirement for improved national and international cooperation to ensure sustainable, safe and universal provisions in all countries.

In the WHO European Region, Member States committed to prioritize action on universal access to essential services and ensuring quality of care through improved WASH in health-care facilities as underpinned by the Declarations of the Sixth and Seventh Ministerial Conferences on Environment and Health (7, 8). Parties to the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (9) have also prioritized action on WASH in health-care facilities since 2017. A dedicated programme area aimed at improving WASH services in institutional settings, including health-care facilities, was reconfirmed in the Protocol's programme of work for 2023–2025 (10).

# Purpose of the situational analysis

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In 2020, Montenegro became the 27th Party to the Protocol on Water and Health, which legally binds countries to set national targets related to water and health. The Ministry of Health conducted a comprehensive baseline assessment to inform development of these targets. This report sets out the results of this situational analysis; these can be used to respond to and implement global and regional resolutions calling for adoption of evidence-based national targets and formulation of associated improvement plans for WASH in health-care facilities, as relevant to the local context.

The assessment covered aspects beyond provision of basic WASH services (as defined under the SDGs), and aimed to explore criteria for a nationally relevant advanced level of WASH services in health-care facilities to contribute to high-quality care and strengthened emergency preparedness and response. The results of the analysis are intended to provide a solid evidence base for national authorities to support health programming and international reporting –

in particular:

- strengthening surveillance systems in health-care facilities to monitor WASH provisions;
- integrating WASH aspects into policy development, strategic planning and management of health systems;
- identifying priority interventions that are key to achieving WASH- and health-related SDGs and national priorities;
- setting context-relevant and informed national targets for equitable and high-quality WASH services;
- identifying urgent and midterm improvement needs and interventions, and related fund mobilization; and
- tracking and reporting on progress towards the SDGs.

# Methodology

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The analysis included two components:

- a nationwide survey of health-care facilities, including site visits to gather observational and descriptive evidence on facility-level WASH service delivery, and water quality testing for microbiological and chemical parameters of priority health concern; and
- an analysis of the governance system for WASH in Montenegro, including a desk review of the legal framework and requirements for WASH in health-care facilities, as well as expert interviews.

The methodology of the two components is described below. The assessment was undertaken in line with WHO recommendations for ethical considerations (11) and international ethical guidelines for health-related research involving humans (12).

## Governance analysis

The qualitative analysis of the governance system, covering the existing legal framework and mechanisms for surveillance and implementation, had the aim of assessing the enabling environment.<sup>1</sup> It identified critical factors in place and possible gaps in enforcement and improvement of WASH provisions in health-care facilities in Montenegro. Information was appraised through a policy review and semi-structured expert interviews, following a standardized methodology used in other countries and explained in detail in the approach for conducting a situational analysis recommended by WHO (14).

The desk review of the legal framework for WASH in health-care facilities was conducted in 2021. It was undertaken by an international expert supported by the team from Montenegro's Institute for Public Health and a group of national experts, guided by a checklist based on relevant WHO guidelines to appraise and analyse critical provisions for each WASH dimension.

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<sup>1</sup> According to the World Bank (13), an enabling environment is a set of interrelated conditions that affect the capacity of actors to initiate and manage development and improvement processes in a sustained and effective manner.

The checklist included the categories water quality, water quantity and access, hand hygiene, wastewater disposal, sanitation excreta disposal, environmental cleaning and laundry, and waste management.

Expert interviews were conducted in July 2021 with key informants from various departments and institutions within the health sector at different levels (including the Ministry of Health, implementation agencies and health-care facilities). Questions were designed to collect information on experience of provision of WASH services in health-care facilities in the local context. They related to existing national standards and regulations, implementation mechanisms, and practices at the national, local and facility levels.

The combination and cross-analysis of the outcomes of the policy review and the expert interviews facilitated a qualitative analysis of the strengths and weaknesses of each building block of the enabling environment for WASH in health-care facilities.

## Survey of conditions at the facility level

A cross-sectional descriptive one-shot survey of the WASH conditions in health-care facilities in Montenegro was conducted from July to November 2021. It was completed using a checklist for onsite observation and structured interviews with health-care personnel. Domains and specific aspects considered in the survey included:

- general characteristics of the health-care facility: location, type of facility, capacity (such as the number of patients), human resources available; details of the survey

response (such as the staff consulted and department visited);

- water: water source, multiple water source use, access, availability, water supply management including treatment, water quality control, and operation and maintenance;
- sanitation: presence of toilets for patients, staff and people with limited mobility in terms of access, usability and quality; provisions for menstrual hygiene; management of human excreta along the sanitation chain; and wastewater management;
- hygiene: access to handwashing facilities and hand hygiene stations at points of care and in toilets; hygiene promotion and stocking and provision of supplies, including personal protective equipment;
- waste management: safe waste segregation, handling, storage and disposal, and management protocols; and
- environmental cleaning: maintenance, equipment and operation for environmental cleaning; capacity for cleaning; procedures for IPC; and safe procedures for bed linen and laundry.

The approach followed a standardized methodology used in previous assessments, explained in detail in the WHO practical tool for situation assessment and improvement planning (15). Water quality was assessed for microbiological, physicochemical and chemical parameters relevant to human health,<sup>2</sup> and tests were performed in accordance with nationally approved analytical methods and regulations.

The final sample consisted of 151 health-care facilities across the country, including all 114 public health-care facilities operating in the country at the time of the survey and 37 private facilities. These included 108 primary

2 For compliance with national drinking-water quality standards, microbiological parameters considered are *Escherichia coli* and *Enterococcus* spp.; physicochemical parameters considered are turbidity and pH value; and chemical parameters considered are free residual chlorine, nitrate, fluoride, lead, copper and arsenic.

facilities (35 health-care centres and 73 health stations), 43 secondary and tertiary facilities (3 clinical centres, 7 general hospitals, 3 specialized hospitals and 30 clinics). The survey covered facilities at all service levels (according to the structure of the national health system: primary and secondary/tertiary health service) in rural and urban settings. Of 151 health-care facilities visited, 94 (62%) were located in urban areas and 57 (38%) in rural areas. The data were collected by a team of qualified public health experts (medical doctors specializing in hygiene with experience in data collection employed by the Institute for Public Health, who attended a three-day training course on relevant WHO guidelines and guidance on the methodology and terminology used in the survey).

The data were analysed based on the existing WHO guidelines of relevance and the indicators defined by the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and

Hygiene (JMP) for reporting and tracking progress towards SDG 6 on water and sanitation (Table 1). The JMP indicators were developed as a set of core questions and indicators for a ladder of services, from "no service" to "basic service" for health-care facilities (mainly for outpatient facilities) (16). According to the JMP terminology, a "basic service" corresponds to the minimum acceptable set of WASH services (see Table 1 for detailed definitions).

This system is useful for a differentiated depiction of the actual situation of WASH conditions in a country, in line with human rights dimensions, and facilitates tracking of development and comparison of progress. Accordingly, national priorities can be identified in terms of improvement interventions for progressive achievement of targets. The approach also facilitates global harmonization in monitoring and reporting.

**Table 1.** Ladder of services for monitoring WASH in health-care facilities

Water	Sanitation	Hygiene	Waste management	Environmental cleaning
<b>Advanced service</b> To be defined at national level	<b>Advanced service</b> To be defined at national level	<b>Advanced service</b> To be defined at national level	<b>Advanced service</b> To be defined at national level	<b>Advanced service</b> To be defined at national level
<b>Basic service</b> Water is available from an improved source on the premises.	<b>Basic service</b> Improved sanitation facilities are usable with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, at least one toilet accessible for people with limited mobility.	<b>Basic service</b> Functional hand hygiene facilities (with water and soap and/or alcohol-based handrub) are available at points of care, and within 5 metres of toilets.	<b>Basic service</b> Waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely.	<b>Basic service</b> Basic protocols for cleaning are available, and staff with cleaning responsibilities have all received training.
<b>Limited service</b> An improved water source is within 500 metres of the premises, but not all requirements for basic service are met.	<b>Limited service</b> At least one improved sanitation facility, but not all requirements for basic service are met.	<b>Limited service</b> Functional hand hygiene facilities are available at either points of care or toilets, but not both.	<b>Limited service</b> There is limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met.	<b>Limited service</b> There are cleaning protocols and/or at least some staff have received training on cleaning.
<b>No service</b> Water is taken from unprotected dug wells or springs, or surface water sources; or an improved source that is more than 500 metres from the facility; or the facility has no water source.	<b>No service</b> 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.	<b>No service</b> No functional hand hygiene facilities are available at either points of care or toilets.	<b>No service</b> There are no separate bins for sharps or infectious waste, and sharps and/or infectious waste are not treated/disposed of safely.	<b>No service</b> No cleaning protocols are available, and no staff have received training on cleaning.

Note: In accordance with the JMP definition, improved water sources include piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water; improved sanitation includes flush/pour flush to piped sewer system, septic tanks, ventilated improved pit latrines, composting toilets or pit latrines with slabs.

Source: WHO/UNICEF (76).

Furthermore, the data for each specific health-care facility were analysed and made available with a higher level of detail, allowing for precise identification and targeted follow-up of individual deficiencies.

## Advanced service indicators

In line with WHO and UNICEF recommendations, an “advanced” level of service – beyond the minimum standards set under the SDGs – should be defined at the national level based on the local context, available resources and national regulations (see Table 1). The comprehensive dataset from the assessment can inform development of a national definition of advanced indicators of relevance in the context of Montenegro, and provide a ready baseline for future monitoring at the national level. The national coordination team developed a proposal of draft indicators for all WASH dimensions, presented later in this report, based on the results of the survey and the governance analysis, and

following the approach used in other countries in the WHO European Region (77).

Criteria considered for selection of the indicators were:

- a focus on a limited number of up to four elements per WASH dimension, reflecting priority aspects that emerged during the survey (elements that did not reach full coverage);
- high relevance for health;
- feasibility of monitoring;
- aspects supported by the legal basis that are at least partly addressed by national regulations;
- feasibility of (cost-effective) implementation in the next five years; and
- feasibility of implementation at the facility level (i.e. not covering aspects where responsibility is shared with the authorities, such as drinking-water quality testing).

# Summary of results

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## Governance analysis

The governance analysis revealed a strong legal framework, surveillance system and political commitment in Montenegro, with renewed attention paid to the importance of WASH services in health-care facilities during and after the COVID-19 pandemic. Important elements were observed in place related to institutional settings and arrangements, and to surveillance and financing systems that create a solid basis and are beneficial for implementation

of adequate WASH services in health-care facilities. Opportunities for strengthening were observed in relation to provisions and enforcement mechanisms for water operation and maintenance and training of staff; budget planning and financial overview; gaps in the surveillance system due to limited coverage and low uptake of results in policy-making; and better integration of WASH provisions in relevant programmes such as those on quality of care and patient safety. Table 2 gives a summary of the outcomes of the analysis.

**Table 2. Analysis of the enabling environment for WASH in health-care facilities**

Dimension	Indicators
<b>Legal framework and political leadership</b>	A legal framework for ensuring WASH in health-care facilities had been established in Montenegro, with legally binding, up-to-date and approved policies and regulations referring to all health-care facilities. Overall, WASH aspects were estimated to be covered comprehensively and in line with relevant WHO guidelines. WASH services for health-care facilities were on the political agenda, and political leadership was confirmed, which was strengthened during the COVID-19 pandemic.
	Requirements for all WASH dimensions were in place, but gaps were observed related to operation and maintenance; wastewater management in health-care settings; equitable access for patients with impaired mobility at all health-care levels; suitable services for children and women; and continued education of staff.
	WASH provision was not considered in relevant health programming, and there was no dedicated implementation programme. An accreditation system had been established but its development so far had not considered WASH provision.
<b>Institutional arrangements and capacity for implementation</b>	Stakeholders at the national level had clear institutional roles and responsibilities, with a formal coordination mechanism, including thematic working groups with defined tasks.
	Experts reported ineffective institutional procedures leading to insufficient collaboration and poor enforcement. Low enforcement of policies was reported, especially in private facilities.
<b>Sector and service monitoring</b>	Surveillance of WASH conditions in health-care facilities was conducted for all public facilities according to a predefined plan and structured checklists, but with limited thematic coverage and no attention to private facilities. Additionally, internal controls and evaluations of the quality of health care, patient safety, satisfaction and patient rights were in place at the facility level, but these did not address WASH, and no external review was undertaken.
	No centralized appraisal, database and evaluation of WASH conditions in health-care facilities at the national and local levels were available to inform policy-making.
<b>Financing and budget</b>	The national financial budget for health-care facilities included several budget lines for WASH – in particular for drinking-water quality monitoring, medical waste and hygiene.
	An unspecific budget line within the facility budget was dedicated to overall ongoing operation and maintenance of WASH services in health-care facilities, but awareness among facility managers and decision-makers of its relevance was low, hindering adequate costing.
	No overview of the estimated costs and expenditure on WASH in health care was available.

Notes: green indicates that the specific aspects were observed; orange indicates that the specific aspects were partly observed or were observed but with shortcomings (described below); red indicates that the specific aspects were not observed.

## Political prioritization and programming

The qualitative analysis found that WASH services for health-care facilities were on the political agenda, and political leadership for ensuring WASH in health-care facilities was reported as present in the country. Political prioritization was also endorsed by inclusion of a dedicated indicator in the draft version of the

national targets defined under the framework of the Protocol on Water and Health for 2025–2027; this later translated into one dedicated target for health-care facilities addressing training on WASH-related capacities in the final version adopted in 2024 (18).

Actions to improve WASH provisions and related practices had also been planned in

Montenegro's national strategy for improvement of quality of care for 2019–2023 (19); however, implementation was hampered by the expiration of the strategy's action plan in 2021. At the time of the assessment, the action plan for implementation of the strategy beyond 2020 had not yet been extended nor newly developed.

One of the challenges in the country was the increasing number of private health-care facilities, which had not yet been fully integrated into health system planning and programming, including for WASH in health-care facilities.

## Regulatory framework

The assessment found that a strong legal framework for ensuring WASH in health-care facilities was in place in Montenegro, with legally binding and up-to-date policies and regulations, addressing all dimensions of WASH to various extents.

In the Constitution of Montenegro, a human right to WASH is implicitly recognized in Article 23 as "Everyone has the right to a healthy environment" (20). More than 15 laws, rulebooks and other legal acts outline requirements that oblige health-care facilities to ensure adequate WASH conditions to protect public health and provide high-quality health care. Annex 1 includes the relevant policies and standards identified addressing WASH, waste management and environmental cleaning.

Montenegro's Law on the protection of the population against communicable diseases and Law on sanitary inspection give general

obligatory provisions for health-care facilities "...to provide hygienic, sanitary and technical conditions, and implement professional, organizational and other prescribed measures to prevent the occurrence, as well as early detection and control of nosocomial infections" (21, 22). Overall, the legal framework addresses infrastructure, conditions and management of WASH services in health-care facilities. It specifies separate roles and responsibilities for ensuring such services at both the national and local levels:

- at the national level – the Ministry of Health; Ministry of Ecology, Spatial and Urban Planning; Ministry of Finances and Social Care; and Institute for Public Health; and
- at the subnational and local level – local self-government units, public utility companies and health-care facilities.

By comparing the national norms against relevant WHO guidelines (23–28), it emerged that most critical health-relevant requirements for medical waste management and hand hygiene were fully or satisfactorily covered, and requirements for drinking-water and sanitation were partly covered. For environmental cleaning, the largest gaps were observed in the legal framework. Aspects that were not yet sufficiently addressed or that were addressed but not specifically for health-care settings included provisions for good management of the water supply at the facility; mandatory training for all staff, including cleaning personnel; equitable access to toilets; and requirements on disposal and treatment of waste (Box 1).

## **Box 1. Gaps in the legal framework compared with relevant WHO guidelines**

While the analysis found that many legal provisions for **drinking-water** were addressed in Montenegro, there was a lack of supporting guidance documentation to enable implementation. Gaps in provisions included a lack of requirements for water safety plans (noting that the WHO guidelines for drinking-water quality state that “all health-care facilities should have specific water safety plans as part of their infection control programme ... [to] address issues such as water quality and treatment requirements, cleaning of specialized equipment and control of microbial growth in water systems and ancillary equipment”), measures to avoid the proliferation of bacteria in hot water systems (such as *Legionella* spp.), and minimum water quantities for all purposes and specific departments.

For **sanitation** provisions, almost all health-relevant requirements were covered, although gaps were observed in accessibility and equitable access to services. Definitions of the minimum number of toilets for patients were unclear, and provisions for sanitation facilities dedicated to patients with physical impairments in inpatient and secondary/tertiary health-care settings were lacking. Guidance on routine procedures for maintenance of sanitation infrastructure and for availability of water and soap in a private space for menstrual hygiene were also lacking (including a definition of what is considered a hygienic container for used menstrual products).

Requirements for performing adequate **hand hygiene** – including infrastructure, conditions, manner and promotion – were comprehensively addressed in national policies and guidelines, although challenges were observed that may affect the level and quality of hand hygiene performance. These included a lack of mandatory hand hygiene training and a lack of a defined minimum number of handwashing basins in health-care facilities.

**Waste management** provisions were addressed in a comprehensive manner, although limitations were observed that might affect waste segregation, storage and transport. Observed insufficiencies in the regulations were related to missing visual reminders for the type of waste and unclear formulation of the colour-coding system. Separate transportation of hazardous and non-hazardous waste was also not addressed explicitly.

A number of requirements for **cleaning and laundry** outlined in the WHO guidelines (23) had been addressed in national policies, although gaps were observed that might affect health-care procedures and patient safety. These included a lack of provisions for regular training of staff responsible for cleaning and/or laundry to comply with IPC; disinfection of areas contaminated with blood or body fluid; and equipping laundry facilities with soap, water, detergent and disinfectant.

## **Surveillance and accountability**

The assessment found that selected aspects of WASH and sanitary-technical conditions in health-care facilities were monitored by the Health-sanitary Inspection Unit under the Directorate for Inspection Affairs of the Ministry of Health. The inspections had been conducted using a checklist including the WASH requirements prescribed in Montenegrin

regulations and according to a predefined plan, but with limited coverage; they had not been evaluated at the national level or reported publicly. Important instruments for improving health-care performance – such as yearly situational analyses of health care (29), the accreditation system (30) and programmes monitoring quality of care (31) and patient safety – did not yet cover WASH provisions or did not address them sufficiently.

Roles and responsibilities for WASH implementation were clearly stated in the relevant laws. Experts consulted revealed that the health-sanitary inspections had been providing the only accountability system in place, although these inspections were insufficient to ensure enforcement owing to the gaps highlighted previously.

An internal control and evaluation mechanism was in place at the facility level for quality of health care, patient safety and satisfaction, and patient rights. This required each facility to have a committee for internal quality control and a person responsible for patients' rights. In addition, every health-care facility was required to have a book of complaints where patients could express their impressions and get feedback, accessible online. Internal control was designated by the regulations in place, with defined indicators specified for different levels of health care, type of facility and their activities. WASH aspects were not addressed among the indicators at the time of the assessment. Reporting on the evaluation of the internal control committee was only performed at the facility level, so a national overview of the situation had not yet been conducted, and these activities did not inform national or local policy and decision-makers. Furthermore, the experts commented that awareness of WASH in general and its relevance was low among health-care administration and IPC staff; this was also confirmed by data shown later in this report.

## Financing

Financing of health care in Montenegro is secured by a state budget and mandatory health insurance systems (31). The analysis found that several relevant but unspecific budget lines – particularly for drinking-water quality monitoring, medical waste management and hygiene (32) – were included in the national financial budget for health-care facilities. Nevertheless, experts commented that there was a general lack of awareness of

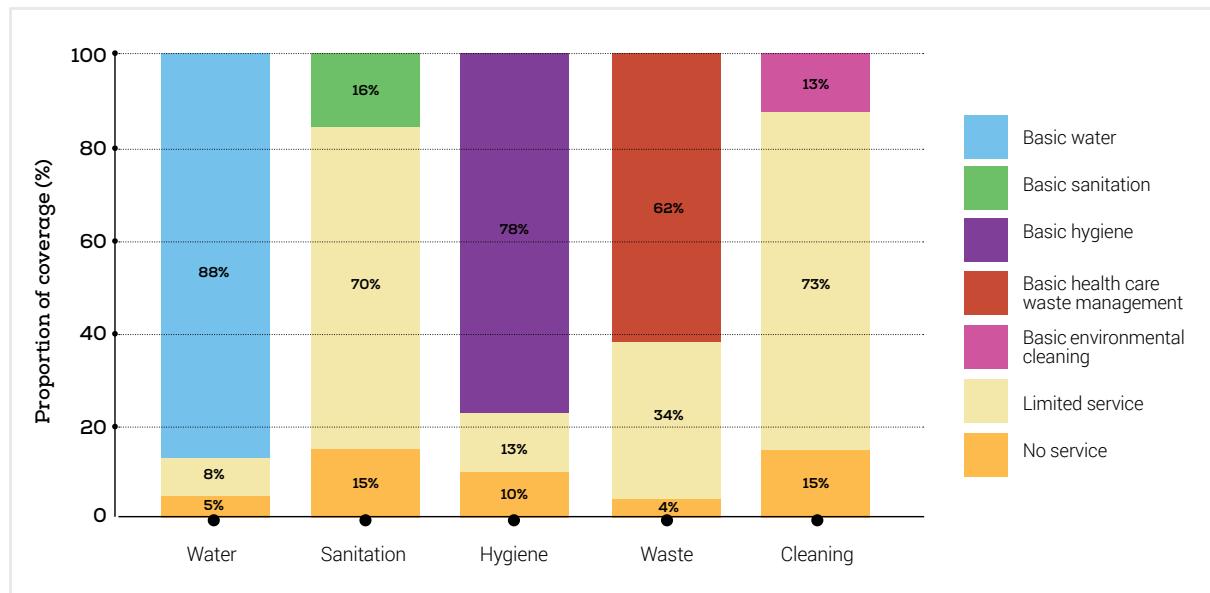
the importance of ensuring high-quality WASH services and financing their recurrent costs at the facility level and among management responsible for the annual facility financial plan. As they were not specifically defined, funds needed to ensure adequate WASH services could be thus spent on other purposes, and expenses for WASH were often deprioritized. An estimation of yearly expenditure on WASH in health care had not been systematically performed, and no overview was available of how much funding had been spent on infrastructure, operation and maintenance, capital investment, and capacity-building.

## Survey of conditions at the facility level

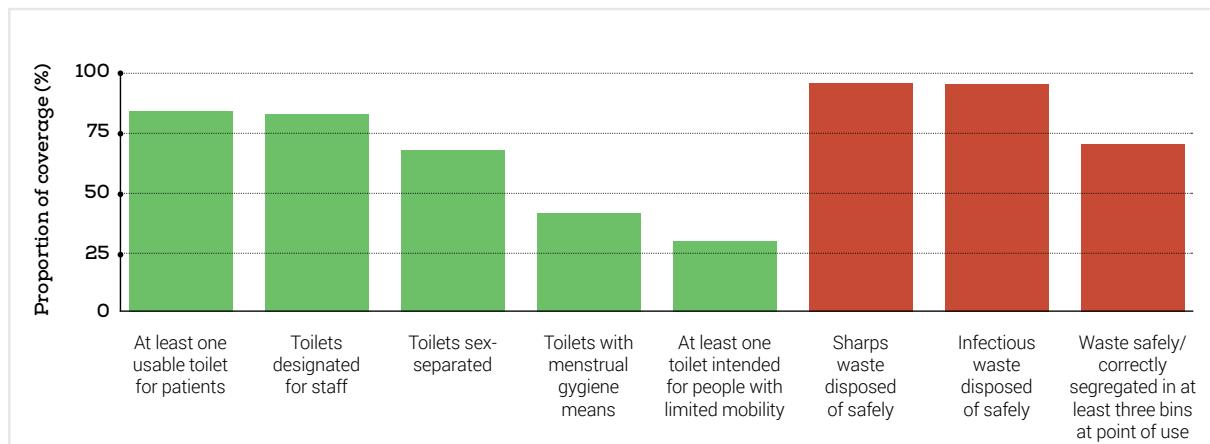
### Basic WASH services

Analysis of service provision according to the JMP core indicators for basic WASH services (Fig. 2) revealed positive outcomes from past efforts to ensure drinking-water provision and hand hygiene, in line with the strengths of the legal framework and existing political priorities described above. At the same time, it revealed the need for improvements in (in order of priority) environmental cleaning, sanitation and waste management. While environmental cleaning provisions were often not found, some provisions for sanitation and waste management could be observed. For example, safe and usable sanitation services were found in the majority of health-care facilities, and infectious and sharps waste were commonly treated and disposed of safely (Fig. 3). The data showed a need for increased attention to be paid to provisions for menstrual hygiene, ensuring accessibility of sanitation services for patients with impaired mobility, and improving safe segregation of waste at the point of use. Overall, the presence of facilities that did not meet any criteria for basic WASH services, and the low number of facilities meeting the basic level for all WASH dimensions suggested a general need for continued attention in all health-care facilities to ensure provision of such crucial services.

**Fig. 2. Coverage of provision of the five WASH services in all surveyed health-care facilities**



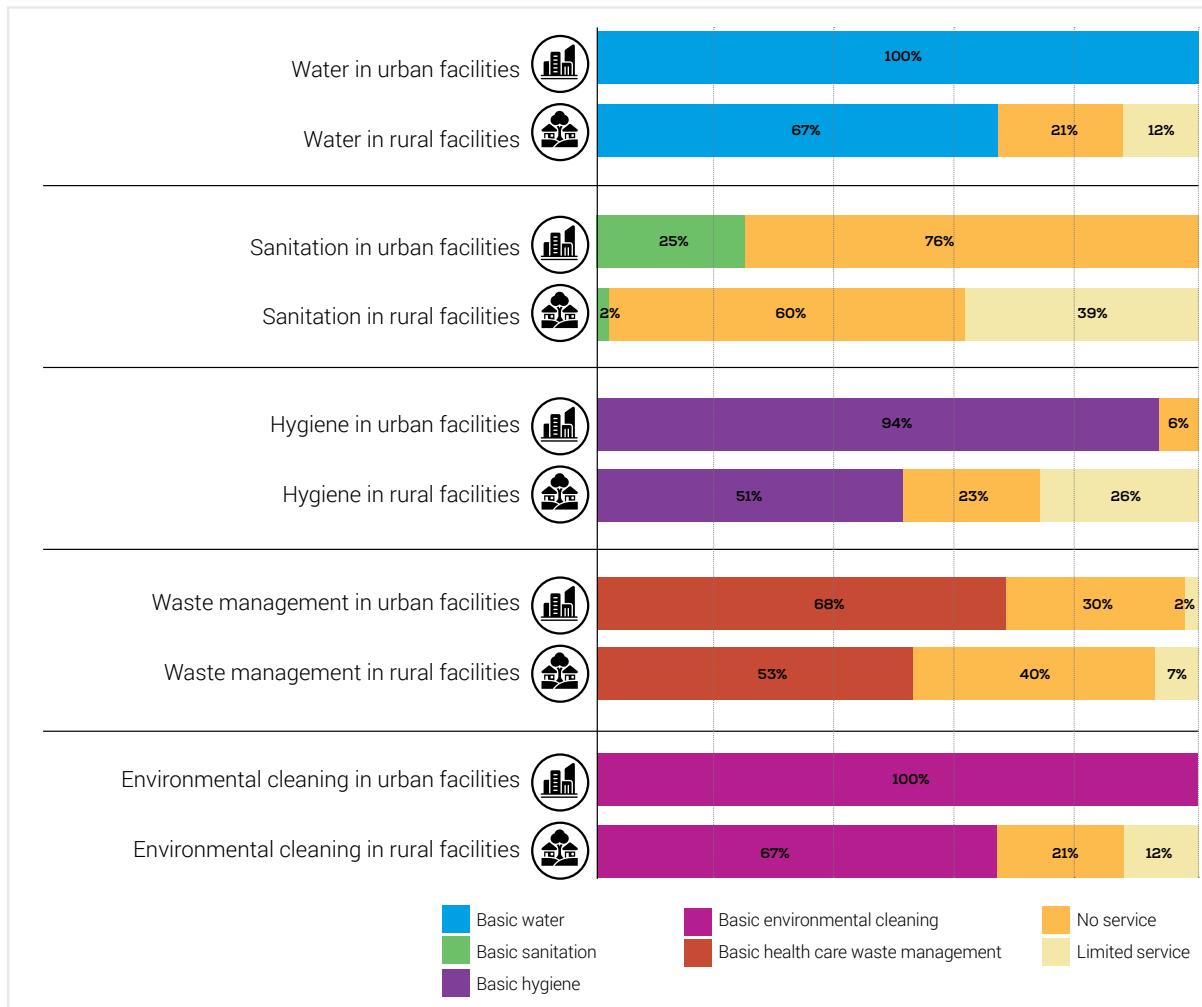
**Fig. 3. Individual estimates of the criteria for basic sanitation services and waste management, in line with JMP definitions of core indicators**



While no clear pattern was observed when comparing results between regions, significant disparities were found when comparing rural and urban settings (Fig. 4) and types of facility. Adequate services were more frequently present in urban areas. This rural–urban disparity could also be observed across levels of care: a significantly higher proportion of primary health-care services in urban settings had basic provisions for water, hand hygiene and waste management services than those in rural settings. WASH services in secondary

and tertiary health-care facilities also met the basic level criteria more frequently than those in primary health-care facilities, except for waste management. Lower compliance was found for basic waste management in facilities with higher levels of care: 56% of secondary and tertiary health-care facilities met the criteria compared to 65% of primary health-care facilities, mostly due to shortcomings in safe segregation observed in particular in private facilities, and possibly linked to the gaps found in the governance analysis.

**Fig. 4.** Coverage of provision of the five WASH services in all urban and rural health-care facilities



## Formulation of national advanced WASH service indicators

Ensuring basic WASH provisions in all health-care facilities should be the first priority. At the same time, it is recommended that countries optimize investments, identifying feasible multicomponent, stepwise interventions bringing together different WASH dimensions and complementing infrastructure with operation and maintenance measures. Table 3 presents suggested advanced indicators based on the analysis presented in this report. Additional definitions supporting these indicators are provided in Table 4. The indicators

are designed to set priority areas for short- and medium-term improvements and to strengthen the surveillance system to monitor progress. The suggested definitions and indicators were selected because they were considered priorities at the time of the assessment. They do not, however, eliminate the need for further stepwise improvements over time to ensure high-quality health care.

Some indicators and criteria for each WASH dimension were further defined to ensure targeted improvement interventions and harmonized surveillance across regions (Table 4).

**Table 3.** Suggested indicators for advanced WASH service levels

Water	Sanitation	Hygiene	Waste management	Environmental cleaning
<p>Staff are responsible for water hygiene and safety.<sup>a</sup></p> <p>Water hygiene protocols are in place.</p> <p>Drinking-water is microbiologically and chemically compliant with national drinking-water quality standards.<sup>b</sup></p>	<p>Staff are in charge of operation and maintenance of toilets.</p> <p>Toilets are visibly clean and provided with toilet paper.</p>	<p>All health-care staff<sup>c</sup> receive regular training on WASH and IPC.</p> <p>Promotion materials on hand hygiene are visible at key areas.</p> <p>Hand hygiene stations are present in common areas and/or at entrances.</p>	<p>Pharmaceutical waste is safely disposed of in line with national standards.</p> <p>Infectious waste is safely stored in a dedicated area.</p>	<p>There is staff in charge of IPC.</p> <p>Cleaning of toilets and critical surfaces is performed at least twice per day and whenever they are soiled.</p> <p>Hygienic practices in patient and examination rooms are performed with regard to bed covers and bed linen.</p>

<sup>a</sup> A protocol is a written document including instructions, procedures, responsibilities and frequency of specific procedures. It may be also called a plan, policy, documentation or standard operating procedures. WHO recommends implementing a water safety plan or any equivalent risk-based approach for safe management of drinking-water.

<sup>b</sup> This requires regular control of water quality by the responsible agency – the Institute for Public Health.

<sup>c</sup> The indicators are based on the existing regulation, that currently only covers health-care staff, but an extension to a broader group (including, for example, cleaning staff) is highly advisable.

**Table 4.** Complementary definitions of indicators for advanced WASH service levels

Indicator	Definitions
Staff in charge of water hygiene and safety	A team or person employed at the facility is nominated to be in charge of water hygiene and safety within every health-care facility, with clearly defined tasks and responsibilities.
Water hygiene protocol	<p>A protocol or plan may be dedicated to water only, or may address IPC procedures and include a specific section for WASH. To be considered comprehensive of water operation and maintenance, it should include the following key elements:</p> <ul style="list-style-type: none"> <li>• tasks and responsibilities for routine operation and maintenance of the building water supply system;</li> <li>• tasks and responsibilities for water supply system operation and maintenance in case of outbreaks;</li> <li>• tasks and responsibilities in case of breakdown of the water system;</li> <li>• tasks and responsibilities for control measures to prevent water contamination (such as water treatment, disinfection and temperature control);</li> <li>• tasks and responsibilities for regular monitoring of drinking-water quality in line with national requirements;</li> <li>• tasks and responsibilities for regular inspections of the facility's plumbing systems (for all facilities except small medical posts/primary care clinics);</li> <li>• a technical plan of the facility's plumbing system (for all facilities except small medical posts/primary care clinics); and</li> <li>• a system, including tasks and responsibilities, to verify implementation of operation, maintenance and monitoring procedures.</li> </ul>

**Table 4 (contd)**

<b>Indicator</b>	<b>Definitions</b>
Drinking-water chemically and microbiologically compliant with national regulations on water quality	<p>Drinking-water quality is present as defined by the Rulebook on parameters, verification of compliance, methods, manner, scope of analysis and implementation of monitoring of the safety of water intended for human consumption (33), including the following parameters:</p> <ul style="list-style-type: none"> <li>• microbiological parameters (<i>E. coli</i> 0 colony-forming units/100 ml, <i>Enterococcus</i> spp. 0 colony-forming units/ml);</li> <li>• physicochemical parameters (turbidity 1 nephelometric turbidity unit, pH value 6.5–9.5); and</li> <li>• chemical parameters (nitrate 50 mg/l, fluoride 1.5 mg/L, arsenic 10 µg/L, lead 10 µg/L, copper 2 mg/L, minimum level of free residual chlorine 0.2 mg/L, maximum level of free residual chlorine 0.5 mg/L).</li> </ul>
Toilet paper availability	Toilet paper is available in all toilets.
Cleanliness of toilets	Toilets (including urinals) are clean (without visible dirt).
Staff in charge for operation and maintenance of toilets	A team or person either employed at the facility or engaged from an outsourced service is nominated to be in charge of operation and maintenance of toilets within every health-care facility, with clearly defined tasks and responsibilities.
Regular training	Training is intended as continued education classes with a structured programme, led by a trainer or appropriately qualified supervisor. It should be implemented as mandatory training for all staff at commencement of employment, followed by annual training.
Promotion materials on hand hygiene in key areas	<p>Hand hygiene promotion materials include reminders of the five critical moments for hand hygiene and/or adequate techniques for hand washing.</p> <p>Key areas include hand hygiene stations, points of care, patients' rooms and sanitation facilities.</p>
Hand hygiene stations in common areas and/or at entrances	Common areas and entrances of health-care facilities are equipped with functional hand hygiene stations (any device that enables people to clean their hands effectively – this may consist of soap and running/poured water with a basin/pan for washing hands, or alcohol-based handrub).
Disposal of pharmaceutical waste	National requirements for disposal of pharmaceutical waste are implemented. Every health-care facility has waste management plans for all types of waste generated, in line with the Rulebook on conditions, manner and procedure of medical waste treatment (34), taking into account wastewater quality from health-care facilities according to the Rulebook on quality and sanitary and technical conditions for wastewater discharge, method and procedure of wastewater quality testing and content of the report on determined waste quality (35).
Safe storage of infectious waste in a dedicated area	<p>Infectious waste storage before treatment and/or disposal is considered safe when there is a dedicated space for it, separate from the general waste stream, and the storage areas are:</p> <ul style="list-style-type: none"> <li>• safe from flooding;</li> <li>• locked and enclosed with walls or a fence to prevent access for non-staff; and</li> <li>• far from and downstream of the local water source (intended as the original source of water and not the tap in the facility).</li> </ul>

**Table 4 (contd)**

<b>Indicator</b>	<b>Definitions</b>
There is staff in charge of IPC	A team or person is nominated to be in charge of IPC within every health-care facility, with defined tasks and responsibilities and the necessary expertise and competency to perform these tasks.
Cleaning of critical surfaces	Critical surfaces that require cleaning at least twice per day include toilets and high-touch surfaces such as taps, handwashing basins, call buttons, light switches, door handles, side or tray tables and bed rails.
Hygienic practices performed in patient and examination rooms with regard to bed covers and bed linen	Bed covers are used to cover the examination table at the point of care, made of paper or plastic (if disposable) or cotton or other synthetic cloth materials (if reusable). Bed linens are bed sheets that may be used to cover the mattress of the beds for patients who stay overnight at the facility. Bed covers used for medical inspection tables are changed between patients. If no bed covers are available, the medical inspection table is disinfected appropriately between patients or whenever soiled. Bed linens on patient beds are changed between patients or whenever soiled.

## Advanced WASH services

Further information on WASH provisions in health-care facilities and identified needs was gathered using expanded criteria for advanced WASH services, such as quality or maintenance procedures for the water supply and frequency of cleaning. Analysis of service provision adapted to the national definitions of advanced WASH services (Table 3) revealed that facilities in Montenegro varied in their provisions beyond the basic level. Only a small number met the suggested advanced WASH service level

indicators (Table 5). When observed individually, many expanded criteria were provided by at least one third of health-care facilities, with provisions for advanced hand hygiene, sanitation and environmental cleaning observed more frequently. This positive outcome could be linked to past policy and implementation efforts, as well as to increased awareness during the COVID-19 pandemic. However, results indicate a need for more targeted efforts to improve care quality and health system resilience, particularly in water management, hand hygiene education and safe infectious waste storage.

**Table 5. Data on coverage of WASH provisions in health-care facilities by level of service, including the advanced level based on suggested national definitions**

<b>Service level</b>	<b>All health-care facilities (n = 151)</b>	<b>Primary health-care facilities (n = 108)</b>	<b>Secondary/tertiary health-care facilities (n = 43)</b>
<b>Water</b>			
No service	5%	6%	0
Limited service	8%	11%	0
Basic service	85%	82%	95%
Advanced service	2%	1%	5%

**Table 5 (contd)**

Service level	All health-care facilities (n = 151)	Primary health-care facilities (n = 108)	Secondary/tertiary health-care facilities (n = 43)
<b>Sanitation</b>			
No service	15%	20%	0
Limited service	70%	69%	70%
Basic service	1%	1%	2%
Advanced service		could not be calculated <sup>i</sup>	
<b>Hygiene</b>			
No service	10%	13.9%	0
Limited service	13%	16%	5%
Basic service	74%	69%	86%
Advanced service	3%	1%	9%
<b>Waste management</b>			
No service	4%	5%	2%
Limited service	34%	31%	42%
Basic service	62%	65%	56%
Advanced service		could not be calculated <sup>i</sup>	
<b>Environmental cleaning</b>			
No service	10%	14%	0
Limited service	13%	16%	5%
Basic service	74%	69.4%	86%
Advanced service	3%	1%	9%

<sup>i</sup> The baseline for the advanced level could not be calculated because one of the criteria under the suggested national definition was not included in the 2021 survey. Data are missing on the number of health-care facilities with staff in charge of the operation and maintenance of toilets; and on the number of health-care facilities disposing of pharmaceutical waste in line with national standards.

## Water quality, quantity, and operation and maintenance

The data revealed the need for increased efforts to ensure continuous and safe water services in health-care facilities. Maintenance of infrastructure was generally good, but attention paid to risk-based and safe management of drinking-water at the facility seemed to be limited: about half of the facilities reported having a

person or team in charge, but not all had specified tasks for adequate operation and maintenance, and very few had written procedures or plans (5%). Observed noncompliance with the national standards (33) – for microbiological quality (10%) and for physicochemical quality (17%), including levels of residual chlorine found lower than the WHO-recommended level<sup>3</sup> (14%) – confirmed the need to strengthen capacity at the facility level for proper operation and maintenance and for

3 To ensure proper disinfection, the WHO guidelines for drinking-water quality (28) recommend a minimum of 0.2 mg/litre of residual chlorine at the point of use.

improved treatment, as recommended in WHO's guidelines for drinking-water quality (28).



This would guarantee specific quality standards to prevent, control and respond to possible issues and contamination.

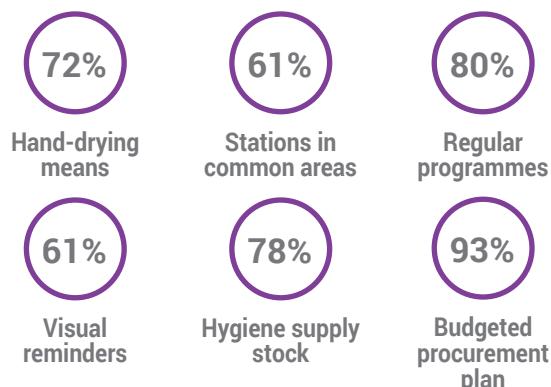
### Sanitation operation and maintenance, accessibility, wastewater collection and treatment

In contrast to the low coverage of basic services, advanced provisions for sanitation were found in the vast majority of health-care facilities. Toilets were commonly observed to be visibly clean (95%), with available toilet paper (92%), adequately lit (97%) and accessible within 30 metres from the point of care (98%). Provisions in line with two criteria identified for the national definition of advanced sanitation services (availability of toilet paper and cleanliness) were observed at the same time in a large number of health-care facilities in the country (78%). While urban and rural facilities had similar coverage on most provisions, toilet cleanliness coverage was observed to be significantly lower in rural facilities. The baseline for the number of facilities with staff in charge of the operation and maintenance of toilets could not be assessed, as this was not included in the 2021 survey.

A number of health-care facilities reported using septic tanks for faecal containment (19%) and for collection of greywater without onsite treatment (23%). Not all these facilities reported that septic tanks were emptied when they filled up. Further investigation is required to understand the possible health risks linked to management of this wastewater.

### Hygiene promotion, capacity and outbreak preparedness

Hand hygiene practices require systemic measures such as a supportive environment and continued education, alongside material and infrastructural provisions. As the study was conducted at the time of the COVID-19 pandemic, hand hygiene and IPC-related aspects of outbreak preparedness at the facilities and relevant WHO recommendations were also included in the analysis. Health-care facilities – especially secondary and tertiary facilities in urban settings – were observed to be well provided with both additional infrastructural measures and systemic measures. These included means for drying hands (72%); hand hygiene stations in common areas and at entrances (61%); regular hand hygiene promotion programmes (80%); visual reminders (61%); stocking of hygiene supplies (>78%); and procurement plans with a dedicated budget (93%).



Provisions in line with the criteria identified for the national definition of advanced hygiene services (training for all staff, hand hygiene promotion materials, hand hygiene stations at entrances and in common areas) were nevertheless observed at the same time in only a small number of health-care facilities (Table 5) owing to the lack of regular and structured training for all health workers. Significant disparities in advanced hand hygiene provisions were observed in rural facilities compared to urban facilities. These were also found between levels of care, but not as prominently.

## Waste management procedures and storage

In a large share of facilities, further means for safe management of waste were in place in line with national regulations, including sufficient dedicated containers for transport of infectious/sharps waste (78%) and written waste management protocols (70%). For the latter, lower coverage was observed in secondary/tertiary facilities, and the protocols were most commonly lacking in private facilities.



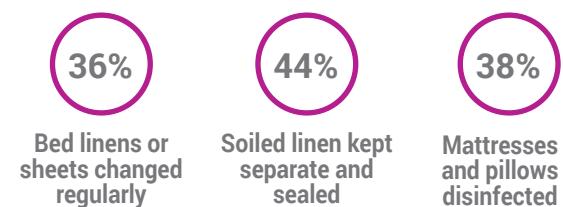
Shortcomings were observed with the length and safety of storage of infectious waste and with general waste management in primary and rural health-care facilities: 15% of all facilities reporting irregular pickup, piling of waste or open burning. Significant disparities for these provisions were present between urban and rural facilities, with rural facilities showing around 25% lower coverage. One criterion for the national advanced indicator – disposal of pharmaceutical waste in line with national standards – was not assessed in this study.

## Cleaning procedures, equipment, bed hygiene and laundry

Means for ensuring environmental cleaning and IPC beyond the minimum recommended provisions were observed in health-care facilities,

with higher coverage in urban areas. Adequate cleaning and maintenance practices and appropriate cleaning materials were generally observed for more than two thirds of the facilities. These included regular cleaning of surfaces and toilets (daily 90%; twice daily 61%), appropriate and sufficient cleaning equipment (88%), procurement plans for environmental cleaning and disinfection supplies in place and regularly implemented (88%), and sufficient stocking of environmental cleaning and disinfection supplies (83%). Despite the national requirements, only two fifths of facilities had a person or team in charge of managing IPC measures onsite (and no significant differences were observed between care levels and settings), and this person or team also covered tasks related to monitoring of water and sanitation services on a regular basis. Approximately one third of the facilities meeting the basic service level also ensured provisions at the advanced level.

A safe environment includes provisions for bed hygiene to prevent cross-contamination, which emerged as an area in need of increased attention and improvement efforts: beds were not commonly cleaned and/or disinfected regularly, and soiled linen was not safely managed in many facilities. Bed linens or sheets were reportedly changed regularly between patients and whenever soiled in 36% of facilities using them, and soiled linen was kept in sealed separate bags in 44% of facilities, with significant lower coverage in rural facilities. Mattresses and pillows were reported to be disinfected between patients in 38% of the eight facilities with patient beds available.



# Discussion and recommendations of the assessment team

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The results of the survey showed that basic WASH provisions were not yet a universal reality in Montenegro. While basic provisions for water and hand hygiene were in place in many health-care facilities, meeting the basic level of service for waste management, environmental cleaning and sanitation service remained a challenge across the country – particularly for facilities providing primary health services and those in rural areas. The results confirmed the high relevance of this topic in the country and the need for further efforts across all WASH domains to maintain coverage and foster improvements to reach universal access. Many provisions beyond the basic level were broadly observed, a number of which were the result of past policies and implementation efforts – some due to increased awareness during the COVID-19 pandemic. The results, however, suggest the need for more targeted and multifaced efforts to achieve better quality of care and resilient health systems by ensuring advanced service provision – in particular for water, hand hygiene and waste management.

The analysis revealed that many aspects of the enabling environment for provision of WASH in health-care facilities in Montenegro were already

in place, but with room for improvement – especially with respect to responsibilities within facilities, coordination between actors and across levels of implementation, and WASH-specific financing. National regulations and policies were available for many dimensions of WASH service provision in health care; however, gaps were observed – in some areas possibly linked with observed lower coverage of specific services. In addition, the scheme for surveillance defined in national regulations seems insufficient and/or ineffective; this may lead to low implementation or lack of provision of WASH conditions at the facility level – as observed, for example, for the requirement to establish IPC teams in facilities. Finally, the need to build capacity and awareness of health-care staff emerged as a key factor to help enable facilities to take responsibility for WASH conditions and improve WASH-related practices.

Table 6 summarizes Montenegro's progress based on the outcomes of this analysis and its completion of the WHO/UNICEF recommended steps for advancing WASH in health-care facilities at the national level (5), as underpinned by international resolutions.

**Table 6.** Progress on the WHO/UNICEF recommended practical steps to advance quality of care through adequate WASH services at the time of the analysis

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Situational analysis and assessment	National targets, roadmap & coordination	National standards	Infrastructure maintenance	Monitoring and review	Workforce development	Community engagement
						
Completed	Partially completed	Completed	Need identified	Partially completed	Partially completed	Partially completed
	Mechanisms are in place for coordination, but no programme is in place for implementation of WASH improvements in health-care facilities.		Existing roles and systems are in place, but do not yet give sufficient attention to WASH services.	National surveillance systems address WASH, but indicators are not comprehensive nor in line with SDGs, and data are not assessed and/or analysed systematically.	Continued education is recommended but not legally binding, and programmes for waste management have been conducted in public (but not in private) facilities.	A comprehensive system for the community to give feedback on quality of care is in place, but no specific attention is paid to WASH, and no national evaluation takes place.

## Recommendations at the national level

### Strengthening the legal framework for WASH in health-care facilities

As provisions with better coverage are generally underpinned by legal requirements, the assessment team recommends that the **existing legal framework should be expanded to cover the gaps identified** and drive progress towards equitable provisions for quality of care and a more resilient health system. Improved and additional provisions are necessary – especially related to risk-based management of WASH services (for example, through water safety plans, including considerations of climate resilience), adequate facilities and equitable access to WASH services (for example, for patients with impaired mobility, women menstruating or after birth and children). It should be noted that environmental

sustainability of health-care facilities and climate-resilient WASH services were not a focus of this assessment, but these were confirmed to be a highly relevant matters by the experts involved during the study.

The differences observed in service provision for vulnerable groups between facilities located in urban and rural areas, as well as the lower provision of basic services in primary compared to secondary/tertiary care facilities call for **targeted action to increase compliance with provisions in those disadvantaged facilities (rural and primary facilities)**.

While the legal framework formally applies to private facilities, **private facilities should be included at all levels of governance**, including national monitoring mechanisms, measures on public health planning and programming, capacity-building of health workers, and mechanisms for ensuring quality of health care.

Finalization of the draft national targets under the Protocol on Water and Health offered an opportunity to use the results of this study for informed policy developments (Box 2). The assessment team also recommends **formalizing the national definitions of advanced WASH services in health-care facilities** suggested in this report, to ensure uptake in the relevant mechanisms at the national level.

Finally, to facilitate cross-sectoral efforts and improve implementation, it is important to

**strengthen integration of WASH services into public health policies and health strategies** on the national agenda, including for quality of care and control of antimicrobial resistance, as these do not yet address such critical preconditions. One example is the strategic document on prevention of antimicrobial resistance, which covers aspects related to medical waste, wastewater and other WASH-related issues. This would also benefit the level of awareness of the relevance of the topic for policy-makers and practitioners alike.

## **Box 2. Prioritizing WASH in health-care facilities through national target setting**

The accession of Montenegro to the Protocol on Water and Health in 2020 initiated a range of activities to start its implementation. These included establishment of a multisectoral working group led by the Ministry of Health that conducted a baseline analysis and drafted national targets in line with the Protocol's provisions and programme of work, including on WASH in health-care facilities.

This situational analysis offered a solid foundation to inform finalization of the draft national targets, and could be of use in the process of their further revision. Based on the priorities that emerged, relevant targets could include plans for concrete improvements in coverage of or equitable access to WASH services; measures to address identified shortcomings in fulfilling criteria for the basic and advanced level of WASH services in all health-care facilities; and policy actions to cover gaps that emerged from the analysis of the governance.

Guided by the results in this report, specific priorities could be considered to address gaps within WASH dimensions (such as sanitation, performance of hand hygiene at the facility level and training for cleaning staff). The results also suggest action that could be taken for specific subgroups to enhance equitable access (in rural facilities and private facilities, and for vulnerable groups).

Since the conclusion of this study, Montenegro has adopted a set of national standards that includes one dedicated target for health-care facilities addressing training on WASH-related capacities (18).

It would be beneficial for national targets to be supported by a roadmap enabling comprehensive and sustainable incremental improvements of WASH in health-care facilities. Through its structure, a roadmap provides a useful framework for incremental improvement by defining short-, medium- and long-term goals and activities, and clarifying responsibilities, intervention areas and budgets for WASH improvements in health-care facilities over a defined period. It could facilitate securing funds for areas that have not yet been prioritized in the sectoral, local or national budget.

## **Integrating WASH services in national accountability and enforcement mechanisms and strengthen monitoring to ensure universal access**

In general, WASH service provisions should be **strengthened in existing programmes and monitored at the national level** to allow better enforcement of existing policies. This could also improve accountability of the government and different actors to ensure high-quality delivery of health care, including equitable and adequate WASH services. Different needs and gaps identified in geographical settings, levels of care and private and public providers should be reflected.

**Checklists currently used for sanitary surveillance could be revised to include a broader range of WASH indicators** – selecting from those employed in this study for basic and advanced service levels – to give a more complete overview of implementation of priority provisions and national requirements. Appraisal and evaluation of such information will enable progress against this study to be monitored, and could inform future reviews of plans and improvement efforts. Regular revision of the checklists is also recommended to reflect feedback from operational experience, changes in regulations and changing priorities for implementation. The WHO practical tool for situation assessment and improvement planning (15) was developed to support such endeavours.

WASH services should be better integrated into existing programmes and monitoring for accreditation of health-care facilities and high-quality health care, as well as in programming and monitoring of IPC, prevention of antimicrobial resistance, and patient safety and satisfaction. Appraisal of data through these systems and timely communication of developments and outcomes of such programmes at the national level would be highly beneficial for more efficient and coordinated action, to avoid competition over funding and human resources at the local level.

At the same time, **collation and dissemination of data on progress and needs for high-quality WASH services at the national level** are critical for uptake in the health system and related evaluation, reporting and performance reviews. The assessment team recommends that stakeholders work closely across departments and with the national statistics office to support creation and sustainable maintenance of a national database. This would benefit decision-making at the national level, and facilitate informed and up-to-date national reporting of implementation for SDG 6. Available data for public access and dissemination to health-care facilities and local authorities is also important for raising awareness on needs and priorities for improvements, and to encourage local actors to take action and report on issues and challenges with implementation.

In the long term, **creation of a dedicated and comprehensive monitoring programme for WASH in health-care facilities** could be considered under the provision that regular coordination and exchange with existing monitoring and surveillance systems, on IPC, high-quality health care, patient safety and satisfaction, is in place. This is considered important in the national context to facilitate formal recognition of this critical area of work and to justify the need for dedicated programmes and related funding.

While the recommended measures should contribute to **increasing awareness among facilities and public health actors on the relevance of WASH service for quality of care**, two additional measures could be targeted specifically towards this aim. The first is creation of a dedicated structured training programme for health workers, using tools created by WHO (36–9). The other is a dedicated programme for sensitization of specific stakeholders, building on existing guidance and tools from the fields of IPC (40) and behavioural and cultural insights (41).

## **Driving progress through closer collaboration, joint planning, dedicated financial streams and informed financial planning**

Through the results of this report, a clear need emerges for closer engagement of and communication with health-care facilities to support planning, implementation and financial improvements. **Establishment of a dialogue with local actors and stakeholders** – for example, through a roundtable – to communicate the outcome of this analysis and discuss future steps and priorities at different levels is recommended.

In Montenegro, there are clear separations in roles and capacity between programmes for quality of health care, IPC and WASH services. **Creation of a joint, cross-sectoral roadmap or strategic document** with a consolidated aim and vision would be beneficial to ensure recognition of WASH services as essential for the public system, and to enable coordination and integration across relevant areas, including IPC and antimicrobial resistance. Considering the challenges reported within the public system, to support improvements of WASH in health-care facilities – for example, with sanitary inspections – a joint assessment of available financial and human resources and a review of existing programmes could support establishment of an integrated, comprehensive mechanism for more efficient distribution and use.

## **Facilitating improvements through dedicated financial streams and informed financial planning**

Financing emerged as a significant building block in need of greater attention for enabling improvements to WASH in health-care facilities. Several concrete actions were discussed with national experts, based on the outcome of this study.

- Evaluating the costs and conducting a cost–benefit analysis for integration of IPC and WASH into national financial planning would be critical steps towards ensuring monitoring, implementation programmes and eventually adequate provisions at the local level.
- Conducting a systematic estimation of yearly expenditure on WASH in health-care facilities – disaggregated by WASH infrastructure, operation and maintenance, capital investment and capacity-building – is recommended to improve the current unspecific budget situation.
- Raising awareness of the breadth and importance of WASH services and the need for appropriate financing at the facility level was identified as one of the most critical measures to enable improved financing.
- Specifically addressing WASH aspects/budget lines in existing systems and evaluation exercises to track expenditure every year would enable sustainable and long-term investment in WASH in health-care facilities. Dedicated budget lines (going beyond operation and maintenance) and/or detailed budget breakdowns, together with regular evaluation of financial plans, would facilitate better budget planning and implementation of identified measures such as the monitoring programme and infrastructural improvements (listed below), while enabling reporting and accountability for WASH measures.
- An ad-hoc national review or assessment of WASH expenditure and financial needs at the local level would be of great benefit to inform revision and improvement of the budget lines, to evaluate the level of alignment between national and local priorities, and to detect possible gaps hindering compliance.
- Introducing a national programme for implementation of the WHO/UNICEF

Water and Sanitation for Health Facility Improvement Tool (WASH FIT)<sup>4</sup> could be especially helpful for identification of stepwise incremental improvements and for exploration of short-term or alternative solutions where funds are limited. The tool helps staff at the facility level identify and prioritize risks, develop improvement plans for WASH, and track progress.

## Recommendations at the facility level

### Improving provisions and risk-based management by defining and implementing protocols and plans for WASH services

Increased efforts are needed to establish and implement protocols and plans related to essential operations and management of WASH services, including waste management and environmental cleaning. While time and resource constraints may pose a challenge, it is critical to **create structured mechanisms for health-care facilities to maintain high-quality services efficiently, and to strengthen readiness, preparedness and response to health and other emergencies**, including those related to extreme weather events and a changing climate. Therefore, responsible staff, with the support of the public health authorities, should take the necessary steps to ensure that these plans are in place and provide concrete actions – including operation and maintenance procedures, IPC and emergency measures, among others – and that these are administered in all facilities, with particular attention paid to rural facilities. Specific plans include cleaning protocols; water and sanitation risk-based management plans; and waste management plans in health-care facilities. These efforts could be part of a comprehensive,

risk-based improvement and management process, such as through the implementation of WASH FIT (39).

### Planning structured training of health-care staff and implementation programmes as the backbone of quality WASH service provision

Low reported awareness and very low implementation of structured training at the facility level regarding cleaning, IPC and other important WASH areas may have significant negative consequences for patient safety and occupational health. It is recommended that facilities prioritize **regular training opportunities on WASH and IPC-related matters for all staff**, and integrate WASH and IPC provisions into relevant clinical training, in line with their integration into national legislation. Consideration should be given to **expanding the target group to include cleaners and janitors** in particular, as they also play an important role in IPC. Attention should be paid to including personnel from private health-care facilities, as the biggest gaps were observed there.

### Defining and formalizing tasks and responsibilities of staff to ensure safe WASH services and strengthen resilience

The study revealed room for improvement regarding responsible personnel for WASH service provision. Facilities should **identify staff in charge of management and monitoring of WASH services, and those responsible for implementation of procedures and practices for operation and maintenance**, with formally defined tasks and responsibilities. This is a critical aspect of implementing risk-based management

4 WASH FIT is a risk-based management tool for health-care facilities, covering key aspects of WASH services: water; sanitation; hand hygiene; environmental cleaning; health care waste management; and selected aspects of energy, building and facility management (38).

practices that contribute to provision of safe and adequate drinking-water, effective cleaning services and safe waste management. It also supports enhancement of climate resilience and strengthened readiness, preparedness and response to emergency situations. Once tasks are defined, **opportunities for capacity-building should be offered to ensure effective implementation.**

First steps to build on and strengthen capacity and ownership at the facility level for improved management of WASH services could consider **engaging existing actors at the facility level** (such as the staff responsible for patients' rights) and **building on national and local efforts to establish staff responsible for IPC in health-care facilities**. Future efforts to establish and/or expand teams responsible for IPC should include personnel with expertise in WASH and/or hygiene.

A practical guide for health-care facilities on WASH FIT (39) and several IPC tools have been developed by WHO and its partners to help facilities establish programmes and mechanisms for improvement, promotion and management of these critical services for improved quality of care. These resources can support application of risk-based approaches, and provide self-assessment tools, including dedicated instruments for facilities based on the level of care offered.

## Enabling improvements through enhanced awareness and financing for short-term and long-term interventions

Responsible bodies should **inform health-care facilities of gaps and shortcomings in their WASH services and encourage them to take action** or communicate their needs to drive implementation. This report identifies many areas that could be addressed at the local level with limited resources – such as training and low-cost hygiene provisions – with significant benefits for the health of patients and staff. For example, the analysis found a need for improvements in provision of hand hygiene stations in common areas and at entrances to health-care facilities. Hand hygiene stations may be provided with water and soap or alcohol-based handrub. Costs could be contained through local production of handrub solutions, following WHO guidance (42).

The gaps observed in the national assessment also include aspects related to major WASH supplies and infrastructure that require long-term planning and higher investments, such as facilities without a main water supply or with inadequate sanitation facilities. These investments are necessary to meet international recommendations and international commitments, and to provide a high quality of care. For this aim, **WASH services expenditure should be considered at the facility level by management and administrative staff and defined in the annual financial plan**. Reporting of expenditure and communication of financial gaps would facilitate improvements at the national level for better planning and informed calculations of the health sector budget. In the short term, facilities could be encouraged to estimate costs for human resources and infrastructural improvements required to meet the defined indicators based on the results of this assessment or in the context of similar exercises.

# Conclusions

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This situational analysis represents one of the first efforts of Montenegro to respond to World Health Assembly resolution WHA72.7 on WASH in health-care facilities by assessing the situation at the national level systematically, based on internationally recognized indicators. The results of the survey provide important insights into the prevailing conditions of WASH in health-care facilities in the country and into the strengths and gaps of the enabling environment to ensure these critical services for quality of care. Based on the analysis, a clear set of priorities and concrete actions for future improvements can be identified, together with a possible definition of

national advanced WASH service provisions to monitor access for patients and staff to a quality of services beyond the basic level. Since the conclusion of this study, Montenegro has already taken action on some of the recommendations presented here. For example, it has introduced water quality monitoring in health-care facilities, developed national standard operating procedures for WASH services and cleaning, and implemented WASH FIT as an advocacy and capacity-building tool in primary health-care facilities.

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# Annex 1. Relevant policies and standards

Table A1 presents the relevant policies and standards identified addressing WASH, waste management and environmental cleaning.

**Table A1. Relevant policies and standards addressing WASH, waste management and environmental cleaning**

Item	Title	Date	Responsible ministry
Law	Law on protection of the population from infectious diseases (Official Gazette of Montenegro No. 12/2018, 64/2020 and 59/2021)	2021	Ministry of Health
Law	Law on provision of healthy water for human consumption (Official Gazette of Montenegro No. 80/2017)	2017	Ministry of Health
Law	Law on waste management (Official Gazette of Montenegro No. 64/2011 and 39/2016)	2016	Ministry of Ecology, Spatial and Urban Planning
Law	Law on sanitary inspection (Official Gazette of Montenegro No. 14/2010)	2010	Ministry of Health
Law	Law on biocidal product (Official Gazette of Montenegro No. 54/2016)	2016	Ministry of Ecology, Spatial and Urban Planning
Law	Law on occupational health and safety (Official Gazette of Montenegro No. 34/2014)	2014	Ministry of Finances and Social Care
Law	Law on health care (Official Gazette of Montenegro No. 3/2016)	2016	Ministry of Health
Law	Law on municipal wastewater management (Official Gazette of Montenegro No. 2/2017)	2017	Ministry of Ecology, Spatial and Urban Planning
Law	Law on the environment (Official Gazette of Montenegro No. 52/2016)	2016	Ministry of Ecology, Spatial and Urban Planning
Rulebook	Rulebook on parameters, verification of conformity, methods, manner, scope of analysis and implementation of monitoring of health safety of water for human consumption (Official Gazette of Montenegro No. 64/2018 and 101/2021)	2018 2021	Ministry of Health
Rulebook	Rulebook on detailed conditions for performing health care activities in hospitals and natural health resorts (Official Gazette of Montenegro No. 32/2010)	2010	Ministry of Health

**Table A1 (contd)**

<b>Item</b>	<b>Title</b>	<b>Date</b>	<b>Responsible ministry</b>
Rulebook	Rulebook on sanitary-technical and hygienic conditions in facilities under sanitary supervision and other closed and open public places (Official Gazette of Montenegro No. 43/2019)	2019	Ministry of Health
Rulebook	Rulebook on the manner and procedure of implementing measures for the prevention and control of nosocomial infections (Official Gazette of Montenegro No. 46/2019)	2019	Ministry of Health
Rulebook	Rulebook on conditions, manner and procedure of medical waste treatment (Official Gazette of Montenegro No. 49/2012)	2012	Ministry of Health
Rulebook	Rulebook on the manner of collection, storage, processing and storage radioactive waste (Official Gazette of Montenegro No. 58/2011)	2011	Ministry of Ecology, Spatial and Urban Planning
Rulebook	Rulebook on detailed conditions regarding standards, standards and methods for achieving primary health care through the selected team doctor or elected doctor (Official Gazette of Montenegro No. 10/2008)	2008	Ministry of Health
Rulebook	Rulebook on waste classification and Waste Catalogue (Official Gazette of Montenegro No. 59/2013)	2013	Ministry of Ecology, Spatial and Urban Planning
Standard	Standard for testing water for haemodialysis and related therapies ISO 13959:2014	2014	Institute of Standardization
Guideline	Measures for infection prevention and control of spreading of infection in health facilities	2020	Ministry of Health, Institute for Public Health
Guideline	Preventive measures to reduce the risk of legionnaires' disease in catering (accommodation) facilities	2020	Ministry of Health, Institute for Public Health
Guideline	Hand hygiene national guidelines for good clinical practice	2012	Ministry of Health, Institute for Public Health
Plan	Medical waste management plan in Montenegro for the period 2016–2020	2016	Ministry of Health
Programme	Continuing medical education programme of the Ministry of Health (2017, 2021)	2021	Ministry of Health
Strategy	A draft national strategy for the control of bacteria resistance to antibiotics for 2022–2026	Planned for 2022	Ministry of Health

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