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Working Group on Water and Health

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Institutional water, sanitation and hygiene

Regional report on water, sanitation and hygiene in health care facilities
(draft publication)

Programme area 3 on Institutional water, sanitation and hygiene (WASH) aims at strengthening WASH services in schools, kindergartens and health-care facilities, in particular through improved monitoring and systematic assessment of the status of WASH services in institutional settings; and supporting translation of global and regional commitments on institutional WASH into national targets and action plans.

A review of evidence on WASH in health care facilities in the pan-European region is a planned activity under the Protocol's programme of work for 2020-2022. The report describes the policy framework and the evidence base for action on WASH in health care facilities, highlights data gaps, common and different improvement needs across the Region. The report also set the base for a call for accelerating action for ensuring delivery of universal quality of care in the pan-European Region through improved WASH services addressing priority areas identified in the presented analysis. It has been developed drawing upon available datasets from surveys and monitoring frameworks on WASH, IPC, AMR, a systematic review of the literature, desk reviews on global and regional policies, information collected at the first European regional expert meeting on WASH in health care facilities, and in-depth situational analyses in several countries in the Region. The draft report is planned to be reviewed by international experts in the areas of AMR, IPC, WASH, health service delivery, as well as national representatives.

The Working Group on Water and Health is requested to review the draft report and provide feedback on its technical content by **10 June 2022** to Valentina Grossi at grossiv@who.int.

Note: The draft document is for review by the Working Group on Water and Health only and not for wider distribution at this stage.

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Abbreviations

AMR	Antimicrobial resistance
CRE	Carbapenem-resistant Enterobacteriaceae
ECDC	European Centre for Disease Control
EEA	European Economic Area
EU	European Union
ESBL	<i>extended-spectrum β-lactamase-positive bacteria</i>
ICU	Intensive Care Units
IPC	Infection prevention and control
HAI	Healthcare associated infections
MHM	menstrual hygiene management
MDRKO	<i>multidrug-resistant IMP-8 producing Klebsiella oxytoca</i>
MRSA	methicillin-resistant Staphylococcus aureus
NHS	National Health Service
NSI	needlestick injury
UHC	Universal Health Coverage
WASH	Water, sanitation, hygiene and waste management

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Why we recommend health professionals to read this publication

Drinking-water, water for hand hygiene, toilets, wastewater collection, hygiene, cleaning and waste management, are important environmental aspects for anyone entering a medical post or a hospital, but also for the community and environment in the surrounding. Anyone within the health care system has a role in the provisions for water, sanitation and/or hygiene services in their tasks as a professional, as decision maker or even as patient.

Such services are the fundament to strengthen a health care system, regardless of the priority, being it quality care, infection prevention control, patient safety and satisfaction, climate resilience or outbreak preparedness. A doctor cannot provide good care without facilities for hand hygiene available. Hospital staff cannot comply with infection prevention control if there are insufficient containers for safe waste management. A health care facility cannot function efficiently during heat waves or flooding, if essential services are not equipped resiliently.

Regardless of your role in the healthcare system at the national or local level, you should be able to recognise the importance of such services. If you still wonder, here are some hints.

Have you ever been a patient?

No one likes having to wait in pain in a sterile room for care. What if this discomfort is worsened as you have to avoid the use of toilets because they are not functional or unhygienic? What if you have to leave the seat or bed and walk up and down stairs and go outside in the cold just to succeed in emptying the bladder?

You can have great influence on good treatment and care. How do you feel about asking the nurse or doctor if she has cleaned her hands before touching you? Through cooperation, this little question can change behaviour – and improve your satisfaction with the care delivered.

Do you work in the management of a health care facility?

The management of the healthcare facility puts a lot of efforts to ensure pleasant working conditions to attract and motivate qualified staff. How would you justify regular sharps injuries among staff due to the insufficient number and adequacy of sharp waste containers?

In some hospitals, the management has a limited budget which needs to be split up between buying medication, technical equipment or soap and disinfectant. How to distribute the limited money available? A fixed budget for WASH service contributes at reducing the number of infections – which may save costs on medications.

Are you a health care professional?

Providing good care to patients can be an exhausting but rewarding job. Knowing that you are helping people in recovering and in feeling better can be very fulfilling. But what would happen to your motivation, if you knew that your care could also make people sick – just because you do not have the opportunity to clean your hands regularly and sufficient?

The development of antibiotic drugs is a great achievement of research. Being able to cure patients with the right medication is a great accomplishment. However, this achievement is being threatened by the rise and spread of drug-resistant bugs. What if you would know that the proper hygiene of sinks and treatment of wastewater can reduce the spreading drug-resistant pathogens?

Do you have a role in keeping a health care facility running well?

A lack of safe water affects vulnerable patients in hospitals most of all. An outbreak of Legionella in a neonatal ward can lead to tragic losses of young lives. How would you feel, if you knew that the insufficient cleaning and maintenance of humidifiers and water taps was the cause?

Several patients in an ICU get infected by a drug-resistant pathogen. Revising the daily cleaning procedures and ensuring hand hygiene can help you hinder further patients becoming sick. Would you wait?

Small gestures make a change. The provision of delicious, fresh drinking-water from water dispensers can give a small moment of relaxation during a busy working day. Well-fortified, one can continue with the work with new energy.

Do you have any role in the work on strengthening health care at the local or national level?

Nowadays extreme storms and winds, followed by flooding are becoming common. Imagine how these can affect the health care facilities in your area while a greater number of people from the region seek help for their injuries. What if treatment cannot be provided because there is no running water at the health care point? Or because the sewage system is obstructed? What if you act today to make the hospital more climate resilient?

If the regional regulatory agency, while supervising the hospital performance, identifies one hospital with remarkably higher expenses than the others in their annual accounting. If you would know that these costs are linked to nosocomial infections like norovirus outbreaks could be prevented through provision of hand hygiene, sanitary facilities and environmental cleaning, what measures would you take?



Do you have
any say in
health care
financial
planning and
budgeting?

Being responsible for financing, you know that cost-effectiveness of interventions is important. You are surely investing in hand hygiene interventions, because you are well aware of the financial benefits of preventing disease outbreaks in hospitals. And isn't it great that this cost-effectiveness also saves lives?

Imagine a norovirus outbreak in a local healthcare facility forces the management to close several wards, because staff and patients are affected. The outbreak causes substantial direct and indirect financial losses due to prolonged hospital stay, increased staff needed, medical and technological equipment needed, as well as loss of productivity for the wider community. These types of outbreaks can be prevented or reduced by adequate hand hygiene, sanitary facilities, environmental cleaning and efficient management. Do you think these can be included in the budget planning for next year?

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1. Introduction

Adequate water, sanitation and hygiene (WASH) as well as waste management in health-care facilities are a cornerstone for the delivery of quality health care services (REF). They are indispensable in preventing all people, patients and health-care workers alike, from health risks. Safe provision of WASH contributes to infection prevention and reduction of disease spread, particular for vulnerable populations like new-born children and their mothers. A lack of WASH services is cause of a high burden of disease worldwide, mainly from hospital-acquired infections, including from resistant pathogens, and their consequences (REF). Additional burden may arise from women being discouraged to give birth in health-care facilities due to a lack of drinking water or an inadequate provision of sanitary services (REF).

Because of the strong link with health, accessible and acceptable WASH services are a key provision for a well-maintained infrastructure and a key constituent of quality improvement. Thus, ensuring safety and contributing to the quality of service delivery and workforce performance, qualitative and equitable WASH access is a foundation for strong and prepared health systems that aim at reaching universal health coverage and people-centred care.

Adequate and environmentally sustainable WASH services, including safe health care waste and wastewater management, are also of critical importance for protecting the environment and contributing to a climate resilience environmentally friendly community (REF). Ecosystems and communities have mutual interdependences and the topic of WASH present an explicit example that- if addressed properly - in this context may bring numerous benefits to communities at several levels, including to the environmental sustainability. At the same time, WASH services should come hands in hands with critical infrastructure, including sustainable energy services.

As briefly described above and described more in detailed in the Chapter 4, the provision of safe WASH Services in healthcare facilities is strongly linked with a number of other health care dimensions and working areas (Fig. 1) which cannot be achieved without and would benefit from national and local WASH efforts in these settings.

Fig. 1



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2. Call for action

*“Today, I {...} make a global **call to action** for water, sanitation and hygiene in all health care facilities... We must work to prevent the spread of disease. Improved water, sanitation and hygiene in health facilities is critical to this effort.”* UN Secretary General Antonio Guterres, March 22, 2018.

At the global level, the 2019 WHA Resolution on WASH in health care facilities set the way for responding to the call of the UN Secretary General and WHO&UNICEF have proposed 8 steps (Fig. X) to fulfil the commitments of the resolution and achieve universal health care.

Fig. 2 practical steps to strengthen WASH provision in health care facilities and achieve universal access



Source: WHO, 2019

Action is needed also in countries of the WHO European Region. Every country may face different challenges and see different priorities, but services for water, sanitation, hygiene, waste management and cleaning remain of high relevance regardless the economy and status of the country. The Covid-19 pandemic stressed even more the importance of such services for outbreak preparedness and response across the region.

Experts and country representatives who contributed to this publication have developed a list of action points - elaborated on the base of the evidence and the data evaluated in this report – aimed at guiding policy makers in the region towards achieving the global and regional targets and in their implementation of the WHA Resolution on WASH in health care facilities. Action points are grouped by practical areas or steps suggested at the global level considered of higher priority at the regional level.

Action points for countries in the pan-European Region

[Preliminary examples -to be refined after review].

<p>Step 1 Situational analysis and assessment</p>	<p>TEXT</p>
<p>Step 2 Targets and roadmaps</p>	<p>Review country status against the 8 steps to implement the WHA resolution on WASH in healthcare facilities and monitor progress towards the SDGs.</p> <p>Strengthen partnership between health care programmes and departments, including: AMR, hygiene, environmental health, epidemiology, IPC, patient safety and quality health care.</p> <ul style="list-style-type: none"> • Ensure that every AMR action plan has a component on WASH in healthcare facilities as a means for prevention and control of the spread of resistant pathogens. • Ensure that IPC programmes and responsibilities address WASH services in HCFs (including drinking-water provision, waste management, environmental cleaning and sanitation) • Ensure that quality and accessibility of WASH services are considered in national plans and strategies for quality of care, strengthening health systems and people-centred care as the key precondition and basic infrastructure to build upon a strong health care meeting patients' needs
<p>Step 3 National standards and accountability mechanisms</p>	<p>Develop dedicated standards and guidelines comprehensive of different WASH dimensions and specific for health care settings</p>
<p>Step 4</p>	<p>TEXT</p>
<p>Step 5 monitor and review data</p>	<p>Integrate WASH indicators into existing surveillance and compliance programmes, including for patient safety, IPC, performance evaluation, as well as in accountability systems. In many countries of the European region there are well-networked and/or efficient systems to monitor health care facilities.</p> <p>Define health-relevant indicators of priority at the national level beyond the basic level of WASH services, to aspire towards an advanced level of service provisions in all health care facilities, to foster health and well-being and ensure quality of care.</p> <p>Improve collection, collation of data from existing at the regional and national level to enable the evaluation and use of data for driving improvement and policy-update.</p> <p>Strengthen dissemination and communication of data across governing, regulatory and implementation bodies to ensure update of the outcome of the surveillance and use of data for decision-making</p>
<p>Step 6</p>	<p>TEXT</p>

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3. Commitments to ensure universal quality health care through improving WASH in healthcare facilities

{Aim: build on the number of high-level calls and commitments that set WASH in HCF as a priority for quality and universal health care globally and regionally.}

Access to safe water and sanitation are of fundamental nature and considered basic human rights (REF). The 2030 Agenda for Sustainable Development adopted in 2015 by the United Nations (UN) calls on countries to address WASH in institutional settings explicitly under goal 3 for good health and well-being – addressing the need for quality essential health-care services (Target 3.8) – as well as goal 6 for clean water and sanitation – calling for universal and equitable access to safe WASH services in all settings, with special attention to women and girls and those in vulnerable situations.

On World Water Day 2018, the United Nations Secretary-General made a global call for action for WASH in all health care facilities. WHO together with UNICEF formulated a joint response strategy. The response includes a vision, measurable targets, and a set of metrics to track progress (Box X).

Box 1 WHO/UNICEF global vision on wash in health care facilities

Global targets

- Basic services: By 2022, 60% of all health care facilities globally and in each SDG region have at least basic WASH services; by 2025, 80% have basic WASH services, and by 2030, 100% have basic WASH services.
- Higher service levels: By 2022, higher levels of service are defined and monitored in countries where universal basic WASH services have been achieved already. By 2030, higher levels of WASH services are achieved universally in 80% of those countries.

Source: WHO; 2019.

In direct link to the global call and international response strategy, countries made a commitment and a World Health Assembly (WHA) resolution on WASH in health care facilities was adopted at the 72nd session of the WHA in May 2019 (3). The resolution stresses the fundamental importance of adequate WASH services in achieving universal health care (UHC) and re-emphasizes attainment of the WASH-related commitments, such as expressed by SDGs. The resolution calls upon the Member States to improve WASH in health care facilities through conducting, among others, comprehensive assessments of the WASH conditions according to the national context, on the base of which follow-up actions should be identified and prioritised (Box X). Such actions include, inter alia, the development of roadmaps for implementation, the adoption of standards for quality WASH in healthcare facilities and integration of WASH indicators in monitoring and accreditation systems.

Box 2

Under the *WHA 2019 Resolution* Member States have committed to take the following actions on WASH in health care facilities and IPC :

- Conduct comprehensive assessments
- Set targets within health policies
- Integrate indicators for safe WASH and IPC into national monitoring mechanisms
- Develop and strengthen national roadmaps of action
- Develop and strengthen national standards
- Strengthen integration across relevant topics and health programs
- Address inequities, addressing first facilities with higher priority and poorest conditions
- Secure funding, investing in trained health care staff
- Strengthen education and raise awareness
- Strengthen multisectoral coordination
- Develop and strengthen a safe working environment

Source: WHO, 2019

2020 has been strongly marked by the spread of a global pandemic of COVID-19. Through the development of the pandemic and the efforts to control it, WASH services in health care facilities have been recognised as a critical measure to control the spread of the pandemic. Countries committed under the WHA resolution 73.1 on COVID-19, in particular by strengthening access to safe WASH, and infection prevention and control, (Source: COVID-19 response. Geneva: World Health Organization; 2020 (WHA73.1 https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R1-en.pdf)). This was also reflected in the recent WHO Manifesto for a healthy recovery from COVID-19 and led to the WHO and UNICEF campaign for all to ensure all people have access to and can practice hand hygiene: the “Hand Hygiene for All (HH4A) Global Initiative”. This campaign calls to action through increasing investments and defining comprehensive roadmaps that bridge national emergency pandemic plans with mid- and long-term national development to ensure WASH and IPC efforts are implemented sustainably to stay beyond the pandemic. (Hand hygiene for all. Geneva: World Health Organization/United Nations Children’s Fund; 2020 (<https://www.unicef.org/reports/hand-hygiene-for-all-2020>, accessed 20 November 2020).)

Helpfully, many several global frameworks, initiatives and strategies focusing on the health-care context are linked to the provision of WASH services – as described above and in Fig. X – and create a good opportunity to integrate WASH in related health system strengthening, health promoting and environment safeguarding efforts. These allow for sectors at the national and local level to join efforts and make efficient use of resources. Examples of such frameworks and initiative existing at the global level are listed in the table below.

Table 1 Explicit or suggested links with WASH from global commitments and strategies for improving health services and strengthening health systems [to be completed]

Frameworks and strategies	Link with WASH in healthcare facilities
MATERNAL, NEWBORN AND CHILD HEALTH	
<ul style="list-style-type: none"> Partnership for maternal, newborn and child health (PMNCH) initiative (2005) Every Woman Every Child (2010) Every Newborn Action Plan (Resolution WHA67.10,2014) Global Strategy for Women's, Children's and Adolescents Health 2016-2030 Global Accelerated Action for the Health of Adolescents (AA-HA!) 	<p>equitable access to functioning and safe WASH in all sectors as enabling environments for high-quality health care that meet patients’ needs to end all preventable deaths of women, children and adolescents calling for government commitment and funding to ensure</p>
<ul style="list-style-type: none"> Every Child Alive campaign (2018) 	<p>urgent, global plea to invest in the “four P’s”: Places, People, Products and Power to fulfil the promise of universal health coverage and keeping every child alive</p> <p>. Places intending clean, functional health facilities with access to clean, running water, sanitation facilities and electricity.</p>
<ul style="list-style-type: none"> Network for Improving Quality of Care for Maternal, Newborn and Child Health 	<p>WASH services as one of the eight standards to deliver quality care, including aspects of provision and experience of care, as well as infrastructure and services needed.</p>
QUALITY OF CARE	
<ul style="list-style-type: none"> Framework on Integrated, People-centred Health Services 	<p>WASH as a key quality provision for a supportive environment that helps caregivers practising and ensuring</p>

	the safety of patients in any healthcare setting so that “all people have equal access to quality health services that are co-produced in a way that meets their life course needs”
<ul style="list-style-type: none"> • <i>Declaration of Astana (2018)</i> 	WASH as an efficient measure to improving and maintaining physical infrastructure, workforce, and a fundamental component of systems for improving the quality of care and monitoring and evaluation; all actions required to strengthen primary health care for accelerated progress on UHC and the SDGs.
<ul style="list-style-type: none"> • <i>The Global patient safety action plan 2020–30 (2020)</i> 	WASH in health care facilities as an enabler of safe clinical processes and for a safe and dignified workspace

INFECTION PREVENTION AND CONTROL

<ul style="list-style-type: none"> • <i>SAVE LIVES: Clean hands</i> 	
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PREVENTION OF (RESISTANT) INFECTIOUS DISEASES AND OUTBREAKS

<ul style="list-style-type: none"> • <i>global action plan against pneumonia and diarrhoea (2009)</i> 	
<ul style="list-style-type: none"> • <i>Global strategy 2015-2020 on water, sanitation and hygiene for accelerating and sustaining progress on neglected tropical diseases</i> 	
<ul style="list-style-type: none"> • <i>global action plan on antimicrobial resistance (2015)</i> 	
<ul style="list-style-type: none"> • <i>WHO Manifesto for a healthy recovery from COVID-19 (2020)</i> • <i>Actionables for a healthy recovery from COVID-19 (2020)</i> 	essential services, from water and sanitation to clean energy in healthcare facilities (health care facilities be equipped with water and sanitation services, including the soap and water) ensuring that adequate attention is paid to the promotion of personal hygienic measures in all settings, including humanitarian settings, and particularly in health facilities

SUSTAINABLE DEVELOPMENT AND ENVIRONMENT PROTECTION

<ul style="list-style-type: none"> • <i>International Decade 2018-2028 for Action – Water for Sustainable Development (2018)</i> 	emphasizing the critical need for water for sustainable development including in healthcare settings
<ul style="list-style-type: none"> • <i>Stockholm Convention (2007)</i> 	safe health care waste management practices to protect health and reduce harm to the environment - prioritizing steam-based or other non-incineration methods of disinfection over incineration to decontaminate infectious waste.
<ul style="list-style-type: none"> • <i>Global strategy on health, environment and climate change (YEAR)</i> 	effective and financially sustainable implementation of universal health coverage is based on a resilient and responsive health system and encourages countries to take concrete actions to integrate climate-resilient and sustainable WASH services as a core component into health systems strengthening and in other health programmes

At the regional level, the Protocol on Water and Health and the Ostrava Declaration on Environment and Health are key political frameworks. In Ostrava in 2017, health and environment ministers of the Member States of the WHO European Region committed to develop national portfolios of action for selected priority areas including WASH in health-care facilities. The declaration also calls on Member States to use the legally binding agreement of the Protocol on Water and Health to reach their WASH commitments. The Protocol links sustainable water management with the prevention, control and reduction of water-related diseases and has been ratified by about half of all Member States. A cross-cutting priority area within these frameworks is WASH in institutional settings, in particular in health-care facilities. Also, in the 2011 European countries anticipated the global commitment and adopted the European strategic action plan on antibiotic resistance, setting as a key objectives to improve awareness and understanding of antimicrobial resistance, addressing the promotion of stringent hand hygiene and other IPC practices which require access to WASH services. Commitments and frameworks at the regional level focusing on dimensions linked to the provision of WASH services in health care facilities that create a good opportunity for integration and efficient resource investment are listed in the table below.

Table 2 Explicit or suggested links with WASH from regional commitments and strategies for improving health services and strengthening health systems

<i>Frameworks and strategies</i>	<i>Link with WASH in healthcare facilities</i>
QUALITY OF CARE	
<i>Framework for action on integrated health services delivery (EFFA IHSD) (2016)</i>	Monitoring WASH services and access for health care staff to continued adjustment and improvement to ensure up-to-date and quality performance WASH and IPC continued education for medical and non-medical staff in line with the latest standards and state of the science to ensure a competent health workforce
SUSTAINABLE DEVELOPMENT AND ENVIRONMENT PROTECTION	
<i>Tallinn Charter: "Health Systems for Health and Wealth" (2008)</i>	WASH services for ensuring functioning and quality health care provision for all, particularly for vulnerable groups and meeting patients' needs to which policy makers strive to
<i>WHO small countries initiative - Ensuring safe and climate-resilient water and sanitation: the iceland statement (2018)</i>	Strengthening disaster risk reduction, preparedness and response from climate-induced and water-related disasters to ensure universal and equitable access to water, sanitation and hygiene in all settings, including in schools, health care facilities and workplaces, as well as in urban and rural areas
PREVENTION OF (RESISTANT) INFECTIOUS DISEASES AND OUTBREAKS	
<i>European strategic action plan on antibiotic resistance (2011)</i>	WASH to prevent hospital-acquired infections by enabling strengthening hand hygiene practices and IPC measures
<i>Immunization Agenda 2030¹ (2020)</i>	WASH as a key sector to strengthen partnership with for increasing efficiency and reach of immunization efforts

¹ Immunization Agenda 2030: A global strategy to leave no one behind. Geneva: World Health Organization; 2020 (https://www.who.int/immunization/immunization_agenda_2030/en/, accessed

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4. A healthcare facility without WASH is not a healthcare facility

{ Aim: provide key-messages on the relevance of WASH supported by a brief outline of the supporting evidence. }

The provision and management of water, sanitation, hygiene and waste management (WASH) services that are safe, affordable and accessible are essential for a functioning health system. Faulty, inadequate or missing services have negative consequences in terms of additional disease burden for patients and staff, as well as extra costs for the healthcare system. Furthermore, the surrounding regions and beyond, from people to the environment, can be negatively affected. The following chapter outlines different topics which are emerging or of long-lasting importance for healthcare facilities and are closely interlinked with WASH. The role of different WASH aspects is highlighted and linked to examples from the WHO European Region.

Key areas relevant for health care provision

In the provision of good quality care, a safe, clean environment with supplies of clean water, sanitation and safe waste disposal are critical

Poor quality of care in health services causes worldwide more deaths than the lack of access to health care (1). Quality health care services should be effective, safe and people centred (2), and are dependent on the provision of WASH services as these present the minimum threshold for quality of care (3). WASH services ensure that quality care is delivered in a dignified, clean and respectful environment. However, there are still major gaps across the WHO European Region. While in general the acute care in most OECD countries improved for different life-threatening conditions, great disparities remain between hospitals and countries (4). An assessment in Kyrgyzstan identified a lack of running water in healthcare posts, with about 60% of the interviewed rural healthcare worker noting that their facility does not have any running water (5). Finding from an assessment in Tajikistan support these findings, with a majority of rural medical institution lacking adequate sanitation and water services (6). In primary health care facilities in Armenia, a lack of drinking-water and adequate sanitary services was reported, with toilets missing locks and adequate hand hygiene facilities (7, 8).

The provision of adequate hand hygiene, environmental cleaning and maintenance of water systems are essential for the reduction of health care associated infections.

Healthcare associated infections (HAIs) are one of the most common adverse events in healthcare settings (9). They are estimated to affect at least 7% of all patients admitted to a hospital in high-income countries and 15.5% in low-income countries (10). Around half of all sepsis cases in Intensive Care Units (ICU) have a hospital origin (11). More than 8.9 million HAIs are estimated to occur every year in the countries of the European Union, with around 4.5 in hospitals and 4.4 in long-term care facilities. More than half of these infections are considered to be preventable (12). These infections lead to human health losses, and are also cause of prolonged hospital stay, disability, high risk of mortality, as well as additional financial burden (13). Infection Prevention Control (IPC) in healthcare settings is closely interlinked with the provision of WASH services, in particular to ensure adequate environmental cleaning, compliance with hand hygiene practices, hygienic and accessible sanitation, safe water and waste management.

Failure to adhere to good hand hygiene practices has been identified as the leading cause of the occurrence of HAIs (14). Hand hygiene practices are particularly important for settings and departments with patients that are vulnerable for infections, such as neonatal units, ICUs and post-operative wards (15-18). The implementation of hygiene measures (including provision of hand hygiene education, supervision of hygiene measures, provision of clean delivery kits) in patient wards show a meaningful reduction in mortality (13). A hand hygiene promotion campaign in a Swiss

hospital increased the compliance with hand hygiene measures from 48% to 66 % (19). A multimodal approach, including elements to increase adherence to hand hygiene and usage of sterile water to rinse reusable equipment, as well as other measures, was associated with a reduction of ventilator-associated pneumonia in ICUs in Turkey (20).

Handwashing and wastewater infrastructure (sinks and drains) have been found to be possible environmental reservoirs for pathogens and have been implicated in numerous clinical outbreaks (21). In an ICU in a hospital in the Netherlands, the introduction of self-disinfecting sinks stopped a colonization of patients with *extended-spectrum β -lactamase-positive bacteria* (ESBLs) from sinks, which has led to one death before the introduction (22). Data from France also suggest that sinks were relevant, but underestimated sources of ESBLs, with 31% of all sinks in 13 ICUs being contaminated (23). The wastewater drainage system of an ICU in Spain was identified as a reservoir for a *multidrug-resistant IMP-8 producing Klebsiella oxytoca* (MDRKO) which affected in total 42 patients (24). Thorough and regular environmental cleaning in healthcare facilities is critical to reduce the spread of infectious pathogens in general (25), and can also reduce the spread from contaminated sinks (23). Waste from healthcare facilities can act as reservoirs for pathogens and mishandling of infectious waste can lead to direct or indirect germ transmission (26).

Safe water, access to sanitation and good hygiene practices uplift maternal and child health, reducing avoidable infections and deaths

Globally, unclean deliveries are associated with more than 1 million deaths of mothers and new-borns each year, with infections being responsible for 26% of neonatal deaths and 11% of maternal deaths in total (27-29). In the WHO European Region the maternal mortality rate is constantly going down, however enormous differences between countries exist, with the highest rate exceeding 25 times the lowest (30). A cross-sectional study on healthcare associated infections in children found a prevalence of 4.2%, with the highest prevalence in paediatric and neonatal ICUs (31). Lack of access to essential WASH services such as water and sanitation in healthcare facilities compromise safe births and may be responsible for delays in care-seeking (27). Another consequence of inadequate WASH services in some countries is the application of prophylactic antibiotics after birth to up to 90% of women (32), which can raise the risk for antimicrobial resistances. Two main patterns have been identified through which WASH services affect maternal and reproductive health. These are related to 1) what is in the water and 2) what interaction or behaviour have patients related to WASH infrastructure (Figure 1) (33).

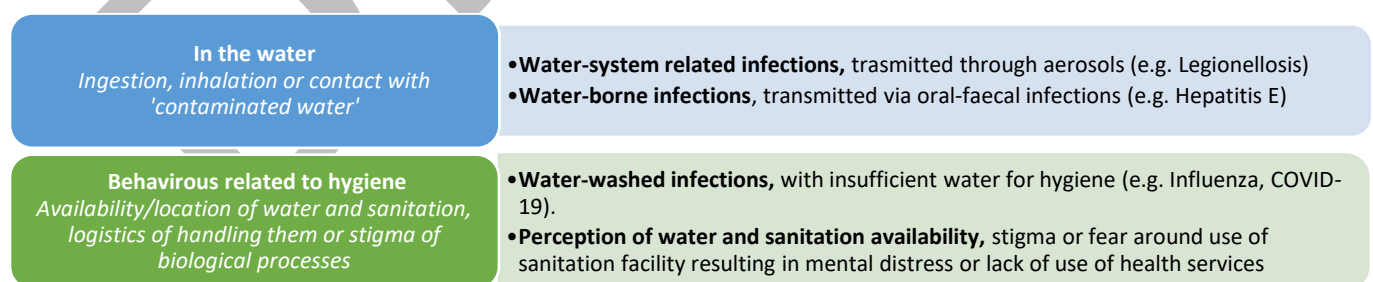


Figure 1. Health effects linking water, sanitation and hygiene with maternal and reproductive health. Adapted from Campbell et al. (33)

The risk of infections, sepsis and death for children and mothers can be reduced by up to 25% through simple measures such as hand washing and clean birthing surfaces. This is evident for all stages of maternal and new-born care and in particular during the management of complications such as caesarean sections (34). Multimodal hygiene interventions have been shown to increase the compliance with hygiene regulations of health care workers in Swedish departments of gynaecology and obstetrics effectively (35). Another study from a paediatric and neonatal intensive care unit in

Germany confirmed the positive effect of these interventions, with higher compliance rate of hand hygiene for nurses compared to physicians (36).

The provision of appropriate sanitary facilities in maternal health is important to avert infections, but also to preserve dignity of patients. A study from East Kazakhstan investigating the perceived quality of maternity care revealed a lack of bathrooms and shower cabins in maternity wards (37), which may lead to mental distress and a lack of use of health services.

The need for adequate water provision in new-born care includes also reducing contamination and minimizing risk for susceptible patients. In hospitals in Northern Ireland a number of neonates died from *Pseudomonas aeruginosa* bacteraemia, presumably due to contaminated water outlets in taps from neonatal units (38).

Gender equity can be achieved also through sensible provision of accessible water and decent sanitation services reflecting the needs of all patients

Providing people centred quality of care has to respond to individual preferences, needs and values. Therefore, ensuring equity is essential to achieve a good quality of care in healthcare facilities (2). Women and girls are disproportionately affected by the limited access to drinking-water, decent sanitation and hygiene facilities (that are accessible, clean and private), affecting their well-being, mental health and care-seeking behaviours (33). This ranges from maternal and reproductive health to menstrual hygiene management (39). As women account for around 70% of healthcare workers worldwide (40), gender considerations are also important for maintaining good occupational health.

A survey of 1 million women in 114 countries on quality reproductive and maternal health care revealed that water, sanitation and hygiene was the second most requested need, after respectful and dignified care (41). Menstrual hygiene management is a largely overlooked issue within healthcare facilities of the WHO European Region, but evidence from other settings suggest that it remains a challenge for girls and women in resource-constraint settings leading to negative health and social effects (42).

Active involvement in good hand hygiene practices and assessing patients' needs for water and sanitation services enhances patient empowerment

Efficient and effective health services are ensured when health care facilities provide integrated people-centred services, empowering patients as well as meeting and respecting their life course needs and respecting their preferences – individuals at different ages, families and communities, are participants as well as beneficiaries of trusted health systems (43). People-centred services lead to an improved experience of healthcare quality and equity. The uptake of hand hygiene practices is an aspect that can be strongly influenced by patient empowerment. Various approaches have been tested to increase empowerment, involvement, and encouragement of patients to participate in hand hygiene promotion (44). Programmes for patient empowerment can be divided into three categories: Education (including information provision), motivation (including visual reminders) and role modelling by peers or superiors (14). An NGO in the United Kingdom encouraged patients to ask healthcare workers if they have washed their hands. This approach empowered patients with responsibility for their own care in a cost-efficient way (45). Findings from a German hospital also suggested that patients find active inclusion on hygiene measures very important and that they are willing to contribute to an improved infection prevention control (46).

Occupational health requires protecting health workers through safe management of waste, adequate sanitation, provision of drinking-water and good cleaning procedures.

As healthcare workers are the backbone of every healthcare system, their health and well-being are pivotal for its function. However, they face the highest risk from unsafe procedures within healthcare facilities, in especially in the area of hygiene and waste management.

Sharp injuries of healthcare workers carry the risk of transmitting blood-borne pathogens such as hepatitis B, hepatitis C, HIV or others. In Europe, an annual average of 0.64 needlestick injury (NSI) per healthcare worker was estimated (47). A Polish study calculated that around 13,567 NSIs occur each year among healthcare worker, with a higher rate for nurses compared to doctors (48). A study from Italy found that even healthcare students were at high risk for NSIs (49). There is alarming evidence from both studies, that the number of unrecorded cases was even higher than the officially reported number (48, 49).

Another important aspect of occupational health are measures to avoid possible adverse effects of frequent hand washing, such as hand eczema. Hand eczema is a skin irritation that has negative impact on the quality of life of the affected person and a poor long-term prognosis. Findings from The Netherlands reported that nearly half of all interviewed healthcare workers reported symptoms related to hand eczema (50). There are indications, that the COVID-19 pandemic in Germany has led to a worsening in symptoms (51). These adverse effects can be prevented by using evidence-based hand hygiene protocols favouring the usage of alcohol-based hand rubs over water and soap (52).

Adequate sanitation is also relevant for healthcare workers as a lack of these services may lead to discomfort and a reduced performance at work, but also an increased risk of acquiring infections. One aspect of this is the guarantee of separate toilets for staff and patients, however reality falls short of the claim. An assessment from Azerbaijan found that the majority of toilets available in public healthcare facilities are shared by staff and patients and lack soap, as well as water for flushing (53).

Assurance of adequate hydration throughout the working day is important for everyone, in particular for professions with a high physical activity, which may include healthcare workers. Lack of hydration leads to discomfort and reduced working performance, including lack of concentration, and in severe cases to major adverse health outcomes (54). Therefore, provision of safe and palatable drinking-water should be ensured to increase productivity and well-being.

Staff working in healthcare facilities are exposed to chemical hazards, one of which are cleaning agents (55, 56). These may cause skin burn and respiratory effects when not used properly (57). Secure handling based on protocols can reduce the negative health effects of this.

WASH interventions are cost-effective and reduce the high-cost impact of HAIs

Every dollar invested in WASH services in general yields a return of 5 Dollar, because of reduced healthcare costs and greater productivity (58). In contrast, not investing in WASH can cause high costs. A modelling study estimating the *methicillin-resistant Staphylococcus aureus* (MRSA)-related costs indicated that noncompliance with hand hygiene was associated with significant attributional cost for the hospital and healthcare system, with around 52.53 USD per noncompliant event (59). Studies from England, France and The Netherlands calculated high additional costs from nosocomial outbreaks due to extended hospital stays, extra medical costs, staff working hours and other cost items (60-62). Projections on the current trend of AMR expect that around 1.1 billion Euro will be spent yearly between 2015 and 2050 across European Economic Area (EEA) countries because of AMR.

Implementing different WASH aspects in healthcare facilities has been proven to be cost-effective. A review of economics studies on alcohol-based hand hygiene products concluded that the potential benefits most likely outweigh costs (14). And there are other measures that may bring a high return-of-investment. An evaluation of waste management in Irish healthcare facilities estimated that hospitals can save up to 27,000 € per year if non-hazardous waste is segregated from hazardous waste streams (63). A new national waste system implemented in rural hospitals in Kyrgyzstan brought cost-savings of around 33% compared to the previous system (64).

Emerging challenges and priorities

Since the healthcare facilities have existed infectious diseases and their management, which include WASH services, have been affecting the quality of care delivered. However, there are (re-)emerging challenges: AMR, Legionella and Pseudomonas and outbreaks of infectious diseases and their connection to WASH services are introduced in the following paragraphs.

Good hygiene and safe disposal of wastewater are prerequisite for addressing the rising threat from antimicrobial resistance.

Antimicrobial resistance (AMR) is an emerging problem in the WHO European Region and worldwide (65). With the high rate of antibiotics used and high rate of infections present, healthcare facilities play an important role in the development, but also in the prevention and response to AMR. Resistance development in this setting can be triggered by several factors, such as poor hygiene conditions and practices or inappropriate use of antibiotics. Of the annual 8.9 million HAIs, multi-drug resistant bacteria are a leading cause in the EU/EAA (12), with around 75% of infections with AMR in EEA being classified as HAIs. Each year, around 670.000 infections occur due to AMR in the European Region, that are associated with 33.000 deaths (65).

One example of AMR pathogens are *carbapenem-resistant Enterobacteriaceae* (CRE) that are difficult to treat and associated with high mortality. The European Centre for Disease Control (ECDC) reported an estimated mortality between 30-70% in bloodstream infections with CRE (66). Several large hospital outbreaks occurred in Europe, for example in healthcare facilities in the Czech Republic, France, Germany, Greece, Italy, Spain and the United Kingdom (66). These outbreaks were also very costly, with an estimated additional cost of around 1.1 million € over 10 months during an outbreak across five hospitals in the UK (9).

Reducing antibiotic residues in wastewater can be important in reducing the development of AMR. In sanitary units of patients wards in Germany high amounts of residues were found, suggesting that antibiotics persist in biofilms (67). Drug-resistant bacteria are not only a problem within healthcare facilities, but also outside and the transmission from hospitals to the municipality may occur via persons or wastewater. Several studies have investigated the role of multidrug resistant bacteria in hospital wastewater. A study from Portugal explored the role of *vancomycin resistant enterococci* in hospital wastewater, finding that the community environment was continuously contaminated with these microbes and that further action should be taken to avoid the spread of AMR. Findings of drug-resistant and hospital associated *Enterococcus* species in wastewater treatment plants in Poland (68) and in hospital sewage in Portugal (69) underpinned this need for action.

Safe provision and operation and management of water services in health care facilities reduce the occurrence of common waterborne infections from Legionella and Pseudomonas. Legionella pneumophila and Pseudomonas aeruginosa belong to the group of bacteria that commonly cause healthcare associated infection. They may originate from the water distribution system and are acquired mainly by inhalation of water vapor. A large number of legionella outbreaks documented took place in healthcare facilities (70). In 2017, *Pseudomonas aeruginosa* was the most frequently isolated microorganism in ICU-acquired pneumonia in the EU (71). The history of

Pseudomonas occurrence in hospitals goes far back, with studies from 1974 already highlighting the importance of prophylactic measures in water dispensers in the United Kingdom (72). In some occasions contamination of several pathogens occurred in the same setting, as one example of tap contamination with *Pseudomonas aeruginosa* and *Stenotrophomonas maltophilia* in a French hospital showed (73). Most at risk for contamination are water supplies that are rarely used, thereby enabling the growth of biofilms which may harbour different bacteria, including *Legionella* species (74). A water temperature below 65°C has been associated with higher *Legionella* contamination in hospitals in Russia (74). This colonisation poses a threat to all people in contact with healthcare facilities, patients, staff, but also visitors. In Cyprus, an outbreak of *Legionella* from cold-mist humidifiers for neonates led to an overall mortality of 33.3% in a private hospital (75).

Outbreaks of infectious diseases (including COVID-19) can be prevented by prioritizing hygiene practices, safe waste management and risk-based environmental cleaning. Hygiene, in particular hand hygiene, has been at the forefront of defence against the COVID-19 pandemic. Environmental cleaning, safe management of excreta, as well as safe management of waste, were recommended in healthcare facilities to reduce transmission of SARS-CoV-2 (76). Besides infection prevention, proper waste handling should target sustainable recycling procedures, given the high amount of waste occurring during outbreaks (77). As healthcare workers are disproportionately affected by COVID-19 infections, accounting for around 14% of all infections, measures to protect them should be prioritized. This includes hand hygiene, appropriate protective equipment, masking and adequate IPC (78).

But COVID-19 can also be seen as an opportunity – a moment to prioritize hygiene and to start behaviour change towards best hand hygiene practices of everyone working in a hospital.

Environment and WASH

WASH services and the environment are closely connected. The following three paragraphs on climate change, natural disasters and pollution, serve as examples for the interdependences of those areas and the need to reconsider WASH services in each one of them.

Improved waste management in healthcare facilities are key areas of action to mitigate climate change

Climate change and health are closely interlinked and dependent on each other, with the healthcare sector being responsible for around 4.4% of global greenhouse gas emissions (79), while health risks and losses are exacerbated through global warming and its direct and indirect consequences (80). Additionally, extreme weather events resulting from climate change threaten the infrastructure and performance of healthcare facilities. Therefore, it is essential that healthcare facilities take up their role in adapting to the consequences of climate change and take over responsibility to mitigate their environmental impact, with waste management being a priority area for action. The National Health Service (NHS) in the United Kingdom produces one in every 100 tonnes of domestic waste. These are largely disposed on landfills or incinerators and thereby adding to the GHG emission. Recycling of this waste could reduce the GHG impact on the atmosphere and reduce the demand for primary material (81). A reduction of the ecological footprint can also lead to cost-savings. An environmental programme at a hospital in Iceland reduced the usage of disposable plastic of 10 tons/year, with cost-savings of approximately 47,830 € annually (82).

Healthcare facilities can become resilient to climate change and natural disasters through specific interventions to improve waste management, water provision and sanitation. The number of natural disasters has been rising in the past years in Europe (83). Natural disasters are highly disruptive events that threaten lives and livelihoods. The protection and maintenance of public

services within healthcare facilities should be a priority in these situations to avoid further health losses. Water provision and waste management is explicitly mentioned under the *Hospital Safety Index* for emergency and disaster preparedness (84). Waste management is at risk for collapsing in emergency situations, while an accumulation of hazardous waste due to a malfunctioning infrastructure is a threat to human and environmental health (85). Floods may negatively affect sanitation systems and water provision, depending on the local infrastructure (86). In coastal regions, sea-level rise may flood sewage systems or increase the salinity of local water aquifers (86). An assessment on Greek islands, which are prone to different natural disasters and water shortage, identified a higher preparedness in hospitals compared to healthcare centres and health posts in terms of water and energy reservoirs (87). Hence, targeted intervention adapted to the local settings and capacities are needed to ensure the maintenance of essential WASH services within healthcare facilities.

Adequate waste and wastewater management of healthcare facilities can avoid pollution of air, land and water

The impact of health care waste, both fluid and solid, on water, land and air depend on the method of disposal. Waste disposal through incineration is often considered to be less damaging to the environment compared to other measures. However, proper handling and modern technology is important, because otherwise it can cause severe harm to human health and environmental sustainability (88). In Greece and Poland the ash of incinerators was found to contain high levels of heavy metals (89, 90) and in Turkey other harmful pollutants such as absorbable organic halogens were found (91). As some of these metals have a high leachability value, adequate measures needs to be taken to avoid a contamination of the surrounding (89).

Wastewater from healthcare facilities may contain harmful matters such as pathogens, medical residues, chemicals or radionuclide agents. Some of these pollutants have adverse effects on human and animal life and well-being, as well as the integrity of the ecosystem. Data from a Turkish study showed that hospital wastewaters pose an environmental and toxicological risk and that advanced treatment processes should be applied (92). However, a recognizable amount of pharmaceutical residues is disposed via urban wastewater, leading to a generally higher pharmaceutical load to the environment from urban wastewater when compared to hospital wastewater (93). The implementation of measures to decrease pharmaceuticals in wastewater from hospitals was shown to be accepted among relevant stakeholder in Swiss study (94). Therefore, proper treatment of healthcare wastewater should be established before it is combined with the public sewage system.

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5. Status of WASH services in health care facilities in the European Region

This chapter presents an overview of the situation in the Region with respect to:

- existing conditions and provisions for WASH services at the facility level across countries; as well as
- governance elements in place for ensuring an enabling environment for implementation and improvement of WASH services in health care facilities.

The overview is not meant to comprehensively address the status of WASH in health care facilities for the entire Region, but depicts priorities, strengths and gaps on the basis of available data, in particular from global assessments and data collections on WASH, WASH in health care facilities, IPC, AMR and sustainable health care services, such as JMP or GLAAS and others as referred in the text. The overview is also complemented with details and examples from:

- systematic reviews of scientific literature on WASH in health care facilities in the European Region conducted in 2018 and 2019 in English and Russian and national systematic reviews of scientific and grey literature in English national languages for Georgia, Hungary and Tajikistan conducted between 2016 and 2020 (unpublished data, in the text referred to as “systematic reviews”);
- a rapid review of information collected from 19 countries at a regional meeting on WASH in health care facilities in 2017² (in the text referred to as “rapid review of information collected at the regional meeting”);
- and data from deep-dive such as situational analysis on conditions and governance (see Annex) or pilot and representative data collection supported by the WHO Regional Office for Europe between 2016 and 2021 following a standardised methodology^{3,4} in Georgia, Hungary, Kazakhstan, Montenegro, Moldova, Serbia, Tajikistan^{5,6} (in the text referred to as “country deep dives”).

Data on WASH provisions in health care facilities

In the WHO European Region there are not sufficient data on minimum provisions for water in healthcare facilities or any of the other WASH dimensions to calculate regional averages⁷. According to 2020 JMP reporting⁷, only a few countries (4-10, depending on the WASH dimension) had recent national data on basic WASH service provision available from empiric data collections or surveillance inspections, covering only 1 or 2% of the population in the Region. The majority of these assessments have addressed mainly water, hand hygiene or waste management, while aspects related to basic provisions of sanitation services and environmental cleaning are rarely addressed (Fig. 1). Additional

² Improving water, sanitation and hygiene in health care facilities: Meeting report, 27–28 September 2017, Bonn, Germany. Copenhagen: WHO Regional Office for Europe, 2019 (<https://www.euro.who.int/en/health-topics/environment-and-health/water-and-sanitation/publications/2019/improving-water,-sanitation-and-hygiene-in-health-care-facilities-2019>)

³ *ADD REFERENCE TO CHECKLIST* Copenhagen: WHO Regional Office for Europe, 2022

⁴ Understanding barriers to quality of care: an approach for conducting a situational analysis of water, sanitation and hygiene (WASH) and quality in health care facilities. World Health Organization. (<https://apps.who.int/iris/handle/10665/340297>)

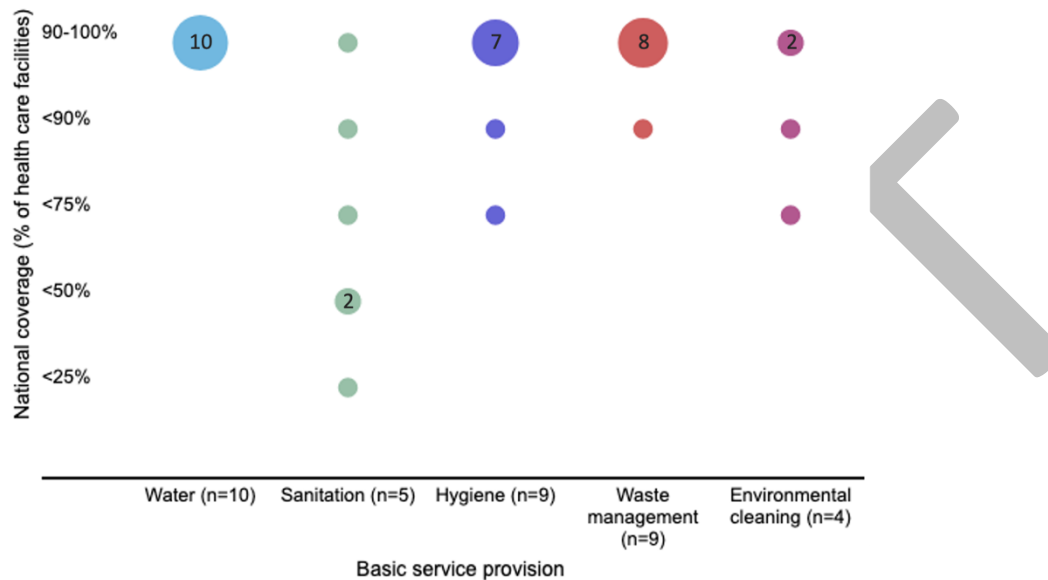
⁵ National situational analysis of water, sanitation and hygiene in health care facilities in Serbia. Copenhagen: WHO Regional Office for Europe; 2020. <https://www.euro.who.int/en/health-topics/environment-and-health/water-and-sanitation/publications/2020/national-situational-analysis-of-water,-sanitation-and-hygiene-in-health-care-facilities-in-serbia.-summary-report-2020>

⁶ *ADD REFERENCE TO SUMMARY REPORTS AS AVAILABLE*

⁷ WHO/UNICEF Joint Monitoring Programme, washdata.org (Accessed: 12/2020)

countries (a total of 9-19, depending on the WASH dimension considered) have data available for a specific area, either focusing on a certain type of healthcare facilities (often hospitals) or setting (often urban areas). The most commonly available data behind national coverage relate to the provision of basic WASH services in hospitals.

Fig. 3 Available data on national coverage of basic WASH service provision in health care facilities in countries of the WHO European Region



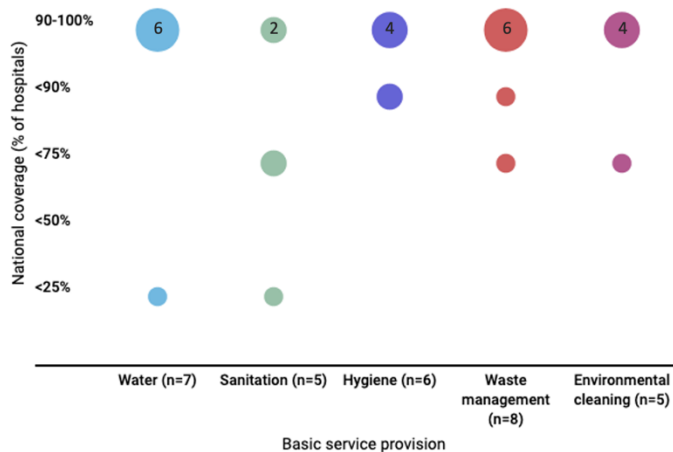
Besides the limited number of countries with data on minimum provisions available at the national level (national datasets and figures from statistical bodies or the Ministry of Health), scientific research and published scientific articles rarely describe basic conditions related to WASH aspects in healthcare facilities or compliance with national requirements in countries in the Region. The conducted systematic reviews of the literature did not add significantly to the figures available at the national level and provided only limited additional information on basic provisions.

In countries of the WHO European Region where data for basic WASH services are available at the national level⁷, similar patterns are observed. Basic water provision is generally observed with very high coverage, indicating that almost all healthcare facilities are provided with water on premises that is available at all times and comes from a potentially safe (improved) source. This indicator does not provide information on the quality of drinking-water available or the actual accessibility of drinking-water for staff and patients throughout their daily activities or their stay⁸. Basic (hand) hygiene and healthcare waste management are also observed predominantly with high coverage across the region, indicating that many healthcare facilities maintain minimum provisions to practice hand hygiene and segregate and dispose of sharp and infectious waste in a way that is considered safe for protecting the health of patients and staff. Coverages lower than 90% for hygiene do not automatically translate into the need for infrastructural improvement but may indicate the need for higher attention on continuous provision of consumables such as soap and/or alcohol-based hand rub. The limited data on basic environmental cleaning show a tendency of high coverage for appropriate capacities through protocols or standard operating procedures in place and staff receiving structured trainings. Cleaning practices or the number of cleaning staff are not considered in such indicators. In comparison, aspects related to sanitation appeared to have received less

⁸ Core questions and indicators for monitoring WASH in health care facilities in the Sustainable Development Goals. Geneva: World Health Organization and the United Nations Children's Fund (UNICEF), 2018. <https://www.who.int/publications/i/item/9789241514545>

attention in healthcare facilities, not only in data collection, but also with respect to implementation, as lower coverage for basic services was observed. For those countries where data was available, the low coverage does not show the mere presence of toilets or latrines, which are commonly available, but indicates that sanitation facilities in healthcare facilities have issues related to availability, privacy or functionality or do not meet the needs of women and girls on menstruation or after giving birth and/or the needs for people with impaired mobility. Additional datasets focusing on hospitals-only show similar patterns (Fig.4), while also presenting some gaps in provisions for basic water or healthcare waste management.

Fig. 4 Available national coverage data from countries of the WHO European Region on basic service provision in hospitals for water, sanitation, hygiene, waste management and environmental cleaning



Data and assessment often address public health care services, except for those countries where health care services are prevalently private. Non-representative data from Portugal and Montenegro shed a light on private (specialised) outpatient facilities hinting to the need for these facilities to be included in capacity building and programmes to increase compliance with the law in particular for health care waste management. While private facilities in Portugal had a high coverage of basic provision with respect to appropriate segregation of waste (Bothelo, 2012), shortcomings in segregation practices were observed in private facilities in Montenegro (unpublished data from country deep-dives). Additional shortcomings in implementation of protocols and national standards, including on the safe storage of infectious and hazardous waste, could also be observed in both countries.

Evidence from across the Region obtained through the systematic reviews stressed the relevance of continued education for healthcare workers – with recurrent structured education programmes, short-term courses, guidelines and legislative definitions – as risks remain high especially with respect for infections and injuries that can be prevented through hand hygiene and IPC practices and health care waste management (Angelillo et al., 2001; Emir Yüzbasıoğlu, 2009; Ferreira et al., 2010; Lindberg et al., 2011; Tamburlini, 2011; Botelho, 2012). Staff in different countries and health care settings may be observed with relatively low risk perception due to the lack of knowledge of the importance of preventive measures and low understanding of the importance and their own responsibilities for adherence to these measures and their role in cross-contaminations.

Data from country deep dives in the Region show that across countries more than 80% of healthcare facilities meet the criteria for basic water services (water from improved sources, on-premises, and available at the time of the study). This is in line with the high coverage of basic water services observed in national JMP estimates (Fig 3). An exception to this is one country where as low as one-third of healthcare facilities provide basic water services. Health care facilities not meeting the basic water level either lack any type of water supply (neither centralized nor individual) or use potentially

unsafe water sources (unprotected dug wells or springs or surface water). From in-depth surveys, it can be seen that primary health care facilities face most challenges satisfying basic water standards, especially facilities located in rural settings.

More than three-fourths of the healthcare facilities across the pan-European region meet the criteria for basic hygiene services, i.e., they have functional hand hygiene stations at points of care and functional hand washing facilities at toilets for patients, as shown by the country deep-dives. This is in line with the high coverage of basic hygiene services observed in national JMP estimates (Fig. 3). In general, hand hygiene stations at points of care (examination rooms, patient rooms, intervention rooms, etc.) provide adequate means for hand hygiene, such as water and soap or alcohol-based hand rub. However, universal access to basic hygiene services is hindered by the lack of toilets for patients with an adjacent hand-washing facility and the lack of running water and soap at hand hygiene facilities.

Data from country deep dives have shown that sanitation and cleaning are the areas in need of attention, suggesting a situation of higher concern compared to JMP data. For sanitation, in several countries less than 20% of surveyed healthcare facilities met all JMP criteria for basic sanitation. Health care facilities in the Region not meeting the basic sanitation level lack improved toilets for patients, toilets designated for women meeting their menstrual hygiene needs, or toilets for patients with reduced mobility. Less commonly, health care facilities have no separate toilets for staff or have unimproved toilets designated for staff. While the majority of health care facilities are provided with improved toilets for patients (flush/pour-flush toilets or pit latrines with slabs), problems with the toilets' usability are observed (availability, functionality, and privacy) across countries. This is in line with the low coverage of basic sanitation services observed in national JMP estimates (Fig 3). The low coverage of sanitation services in countries should be considered in line with the existing national regulations and sanitation standards as it may be related to the gaps in the existing policies on accessibility and inclusive services.

Basic environmental cleaning services remain a challenge across the country deep dives, unlike the coverage of basic cleaning services observed in national JMP estimates (Fig 3). The primary reason for the low coverage is the lack of regular structured training for the cleaning staff. Another critical issue is that healthcare facilities seldom possess cleaning protocols. Surveys reported that even when available, these protocols lack important aspects, such as step-by-step cleaning techniques, cleaning frequencies, and / or roles and responsibilities for cleaning tasks.

Waste management was observed to be broadly implemented across healthcare facilities in the Region, with the coverage ranging from less than 50% of the surveyed healthcare facilities in some countries to up to 100% of facilities in others. This finding is not in line with the high coverage of basic waste services observed in national JMP estimates (Fig 3). The main aspects where countries strive to reach basic waste management conditions include the adequate segregation of waste. In general, the separation of waste is conducted correctly into at least three bins for sharps, infectious waste, and non-infectious waste. However, facilities may struggle with the criteria for the correct segregation of waste, as waste bins are observed not to be appropriate to the type of waste, without lids, inadequately labelled and/or colour-coded, and with mixed waste inside. When it comes to the treatment or disposal of the infectious waste and sharps, the coverage of safe treatment options is generally high. The majority of countries have contracts with dedicated companies for off-site treatment or disposal of medical waste or practice incineration and autoclaving as safe treatment procedures. For example, in Serbia, one in five surveyed healthcare facilities reported treating sharps and infectious waste in autoclaves; typically, separated medical waste from health stations and ambulances accumulates at larger healthcare institutions with operating autoclaves (clinical centres, clinics, primary health centres, etc.). In Tajikistan, one in three healthcare facilities in urban and rural areas treats sharps and infectious waste in incinerators, either two-chamber or one-chamber types.

However, unsafe disposal options, such as open burning, open burying, or adding infectious waste to general waste, remain a challenge in primary care facilities in rural areas in specific geographical areas in the Region.

Data on WASH services beyond basic level of provisions

Additional challenges that may be faced in health care facilities in the Region, according to the rapid review of information collected at the regional meeting, also include: water shortages in winter times, lack of hand hygiene stations for staff, issues with cleanliness, difficulties in the supply of cold and hot water and a general lack of shower cabins.

Data from deep-dive on aspects beyond the basic level for drinking water include the coverage of the improved and continuous water supply, drinking-water quality control, and water operation and maintenance. Drinking-water quality at point of use is not extensively assessed or monitored (not in many countries and not in all health care facilities) and where data are available, country- and geographical-specific conditions are observed with respect to compliance with the national standards for chemical and microbiological quality, with microbiological quality being more often but not everywhere observed. Again, water quality controls are reported to be more frequent in secondary and tertiary health care facilities located in urban areas than in primary healthcare facilities in rural areas.

A major challenge across the surveyed countries in the provision of water services is the lack of water safety / water management plans, which are rarely in place.

For drinking-water provisions beyond the basic level, many health care facilities in the national surveys had improved and continuous water supply (or the presence of an alternative water source in case of shortages), with some differences between the individual regions within the countries, the types of healthcare facilities (better in secondary/tertiary facilities than in primary), and the location of healthcare facilities (better in facilities in urban compared to rural areas). Drinking-water in health care facilities across the Region was generally observed to be available at all times, either from the main water supply, or from the use of improved alternative water sources including packaged water. Healthcare facilities facing water shortages are those with individual water supply especially in rural areas. Water shortages may come about as the result of climate changes, hydro-geological characteristics of aquifers, or have seasonal character (more often reported in summer months).

Further areas observed with low coverage in health care facilities across the Region are accessibility of drinking water, operation and maintenance, and water safety plans. Drinking water is infrequently observed to be accessible outside the toilets, and hardly accessible to patients with reduced mobility. Water operation and maintenance (having a well-maintained main water supply and staff in charge with specific tasks assigned for operation and maintenance at the facility level) is (?) depended on the type of the main water supply. Unlike facilities with centralized water supply, those supplied from individual water sources in rural areas typically lack technical staff in charge of the building's water network, which may affect water supply and quality. During the surveys it emerged that the healthcare staff experienced difficulties to understand the technical issues related to water accessibility, technical requirements, and operation and maintenance. This highlights the need to employ qualified staff in charge of WASH so that medical professionals do not have to deal with these issues while providing health services.

Water quality control is yet another essential issue beyond basic water provision. In countries where water quality was assessed on purpose during the survey (independently from the regular surveillance programmes by the national public health authorities), water samples complied well with the national drinking-water quality standards. The exception is one country (survey conducted

on only 20 healthcare facilities), where most water samples did not comply with national requirements, either because of chemical or microbiological contamination, but staff in many facilities reported that packaged water is usually preferred for drinking. Healthcare facilities in many countries are not obliged by the law to treat drinking water on-premises. Although not explicitly obliged by the law, some health care facilities regularly treat water on-premises by filtration (Hungary, Kazakhstan, Serbia), boiling (Hungary, Georgia), or chlorination (Georgia, Kazakhstan, Serbia, Tajikistan).

Hygiene elements for outbreak preparedness are of prime importance in times of pandemics. In three surveys conducted at the time of the Covid-19 pandemic, many healthcare facilities had sufficient risk-appropriate personal protective equipment for the healthcare staff, sufficient stocking of hand hygiene supplies, cleaning and disinfection supplies for at least two weeks, and procurement plans with a budget for the continuous provision of hand hygiene supplies. Differences were observed regarding the type and the location of facilities, with the highest coverage reported in secondary facilities in urban areas (such as hospitals, clinical centres, specialized outpatient facilities) and the lowest in primary health care facilities in rural areas. The greatest obstacle to ensuring outbreak preparedness is the lack of procurement plans and budget.

Healthcare facilities across the Region have high coverage of waste management services beyond the basic standards. Waste indicators with high coverage across the surveyed countries include properly storing of infectious waste in dedicated containers in designated areas for a specified time (up to three days without cooling). Gaps have been observed in smaller primary healthcare facilities in rural areas, especially concerning the length of storage of infectious waste before treatment or disposal and the safety of the dedicated storage areas. On the other hand, waste management protocols – often regulated by law - have overall low coverage among facilities in the Region, especially in primary healthcare facilities.

Environmental cleaning services beyond basic standards include the frequency of cleaning, bed hygiene practices (changing of bed linen or bed covers), and the management of soiled linen, mattresses, and pillows. Most visited healthcare facilities were well-maintained, visibly clean, without dust, soil, clutter, and damage during the nationwide surveys. In addition, facility floors, surfaces, and toilets are regularly cleaned – at least once per day and whenever soiled. In one country, low coverage of the provision of cleaning services may be related to the lack of appropriate and sufficient cleaning equipment in some countries.

The coverage of adequate services for bed hygiene and laundry across the surveyed countries is low. While most facilities use any bed linens, reusable or disposable bed covers (made of plastic or paper if disposable, or cotton or synthetic materials if reusable), and practice changing them between patients and whenever soiled, soiled linen is not adequately stored, transported or disinfected before washing. However, in facilities with patients' beds available, pillows and mattresses are generally disinfected between patients and whenever soiled. Low coverage of bed laundry may be related to lack of cleaning staff or their inadequate training regarding cleaning procedures and bed linen hygiene.

Hand hygiene

Besides basic provisions, ensuring hand hygiene practice requires an enabling climate, adequate environment, continued training and reminders. Data from country deep dives highlighted that hand hygiene infrastructure at critical points is often present, but there is need for increased efforts for ensuring also other enabling factors that facilitate maintaining good hand hygiene practice. These include, but are not limited to: hygienic means for drying hands, antiseptic soap or hand sanitizers, means for hand hygiene at the entrance and common areas (also for visitors and patients), as well as

continued training of staff on IPC. While reminders and posters are used across countries, there is need to ensure their presence at all critical points of care or in toilets and it would be beneficial to keep them updated.

Thanks to the data collected through the WHO *Hand hygiene self-assessment framework survey* (HHSAF), it emerged that a high number of hospitals⁹ have staff (on average more than one nurse and a doctor) responsible for infection prevention and control and a high involvement in hand hygiene promotion with good levels of compliance with WHO hand hygiene recommendations improving over time, with a positive improvement observed especially in the implementation of hand hygiene evaluations and of a favourable institutional safety climate.¹⁰ According to the scoring system of the survey, the median overall score for health care facilities in the pan-European region is above 350, third in the ranking by regions and lower than the global median score. These data may present a bias, as they were reported voluntarily by healthcare facilities, meaning that they represent mainly facilities interested in the topic¹⁰. A recent pilot study of 40 health care facilities in Georgia showed that XXXX.

Regulations, policies and programmes

Many countries in the Region have a legal framework in place for ensuring many aspects of WASH in health care facilities. According to a rapid review of information collected at the regional meeting, all participating countries (19) reported having legally binding regulations and/or standards targeting water, sanitation, hygiene or waste management in health-care facilities (laws, ordinances and other legally binding documents). Usually WASH requirements are addressed in legally binding documents, while detailed guidelines may be also available, reported by one country at the 2017 meeting- although it is likely that other countries had them in place - and often observed in country deep dives. A review of the reported legal references from these countries revealed a great variation between the countries, ranging from the minimum of two legislations up to more than ten per country, the majority addressing one specific dimension or aspect related to WASH. Identifying relevant policy documents is not always easy as they are not always explicitly addressing health care settings and because responsibilities for regulating such services may be spread across several ministries (health, environment, water, agriculture, energy, etc.): many of the included documents relate to sanitary conditions, which mainly address hygiene and cleaning, or in fewer cases to water and/or sanitation. From in-depth policy reviews and interviews (?) conducted in countries in the Region (e.g. in Georgia, Hungary, Serbia, Tajikistan), it emerged that additional provisions for WASH services can be included in standards for IPC, specific standards for health care waste management or for the prevention of nosocomial infections, and standards for accreditation.

According to a recent WHO policy survey on sexual, reproductive, maternal, newborn, child and adolescent health¹¹, a high number of countries in the region have national policies and/or guidelines

⁹ Data from the European Region was reported from 29 countries, included a sample of 246 respondent health care facilities, 17% located in middle income countries. Source: Summary Report: Hand Hygiene Self-Assessment Framework Survey 2015/2016
<https://www.who.int/gpsc/5may/hand-hygiene-report.pdf?ua=1>

¹⁰ Kilpatrick, C., Tartari, E., Gayet-Ageron, A., Storr, J., Tomczyk, S., Allegranzi, B., & Pittet, D. (2018). Global hand hygiene improvement progress: two surveys using the WHO Hand Hygiene Self-Assessment Framework. *Journal of Hospital Infection*. doi:10.1016/j.jhin.2018.07.036

¹¹ Sexual, reproductive, maternal, newborn, child and adolescent health policy survey, 2018-2019: summary report. Geneva: World Health Organization; 2020. Annex 1: Reproductive, Maternal,

on reproductive health (92% of 39 responding countries). A closer look highlighted that in 82% of the reporting countries these policies include requirements on availability of clean water and sanitation in facilities where births take place.

The rapid review of information collected at the regional meeting also revealed that many of the legal references considered relevant or applicable for WASH in health care settings are not specific for health care facilities, but rather cover WASH dimensions in general with varying level of detail. The deficit of explicit focus on WASH in health-care facilities denotes a probable negligence of additional requirements, which are highly needed in this particular setting with a high vulnerability of patients meeting a high burden of pathogens. Yet, the dimensions of water and sanitation are generally represented, but without the focus on health-care facilities. An analysis of a number of original documents showed, that in those documents specifically targeting at health-care facilities important aspects of water and sanitation are underrepresented.

Available data from country deep dives showed how existing national standards and norms address many aspects related to WASH in healthcare facilities, but further efforts are needed to address gaps and update requirements that are not reflecting the latest recommendations by WHO for health and environmental protection. The in-depth review showed, that the countries had a strong policy framework in place that was legally binding, although not always comprehensive for all WASH dimensions. In Hungary and Serbia, the policies and regulations explicitly embed the human rights to water and sanitation. National targets for WASH in health care facilities were only adopted to date in one country (Tajikistan) but other countries are developing them. Political leadership on the topic of WASH in health care facilities was present in three out of four countries, with a political commitment to accelerate improved WASH services.

Gaps observed in several countries include the lack of attention on quality of services (e.g. means for privacy, operation and maintenance), ensuring inclusive and accessible WASH services, including the provisions for hygienic menstrual management of mothers and women.

Regarding sanitation, wastewater management is less often addressed in health-related regulations and showed relevant gaps, possibly because often under the exclusive responsibility of the environment sector. Also, lower attention is given to bed hygiene and laundry requirements in health care settings, with very few countries having some regulations in place on the change of bed linens/bed covers.

Aspects related to hand hygiene and often to environmental cleaning are covered to a very high extent and detail by the national laws and regulations for IPC. at the same time, training and continued education on WASH specific aspects, including on hand hygiene, environmental cleaning and waste management, was a commonly observed challenge, with needs for a clear definition on the target group, including non-medical staff, and legally binding requirements of recurrency and structure of the training. Also, dedicated guidelines or standard operating procedures to allow implementation of the law, in particular of relevance for IPC and environmental cleaning are not always observed. Waste management is broadly regulated at the national level across the region, but it showed different challenges in different countries, ranging from a lack of definition of adequate storage areas, conflicting recommendations not in line with latest WHO standards, to limitation of

applicability of requirements only for some levels of care. For environmental cleaning, there are legislation in place in most of the countries,

The country deep dives confirmed the need for standards that are specific for health care settings, and also the need for more inclusive or dedicated requirements explicitly targeting smaller, rural and/or outpatient facilities. For example, Regulation on drinking water quality are observed in place, though these regulations are not always specific for health care settings and they thus miss to provide specific requirements for measures to ensure water safety at the facility level or for water used for vulnerable patients. In some countries, policies are not inclusive of rural facilities or outpatient facilities which may require decentralised systems and ad-hoc measures for autonomous/smaller scale systems – a matter of particular importance for countries with remote rural areas.

From the analysis of the policy framework in the countries across the Region, it is possible to observe that for some of those aspects observed with lower coverage in the health care facilities, corresponding weaknesses and gaps are observed in the existing regulations. This applies in particular to aspects related to accessibility of WASH service for people with limited mobility, but also services for other vulnerable groups such as menstrual hygiene management for women, adequate facilities for children or specific service provision for vulnerable/high-risk patients, such as water used for medical purposes.

Table XX – Overview on legal framework and political leadership from the country deep-dives.

Dimension	Situation in the countries from the in-depth review		
Legal framework	In all countries a policy framework exists, is approved and is legally binding.		
Comprehensiveness	One country did not include key elements of WASH in HCFs in their legislation.	In one country policies and regulations did not include water quantity.	In three countries policies and regulations are comprehensive of all dimensions of WASH.
Inclusiveness and accessibility	In three countries most, but not all aspects related to inclusiveness were found in national policies and regulations. Main gaps were found on accessibility for people with limited mobility.		In two countries policies and regulations include the human right to water and sanitation and address accessibility.
	No country considers essential provisions for menstrual hygiene management		
WHO essential standards*	In two countries most aspects of the WHO Essential standards are addressed, but in some areas there is either unclarity or the recommendations are not aligned.		In two countries national standards are in line with the latest recommendations by WHO.
Targets defined under the protocol on WASH in HCF*	Two countries do not have any targets defined.	One country has targets defined but not implemented.	One country has targets defined.
Political leadership*	In one country was only partially observed.	In three countries political leaders promote and commit to accelerate improved WASH services.	

*n=4 as there was no information from one country provided.

Implementation programmes and activities

Programmes on WASH in health-care facilities are or have been conducted in several of the countries (15 out of 19 countries reporting at the 2017 regional meeting on WASH in healthcare facilities). For example, the Lithuanian national waste management plan by the government sets clear goals for improving waste management including medical waste until 2020. A review of these programmes, however, revealed that alike the legislative documents, implementation programmes may not always specifically target health care settings or address only partially one or more aspects such as waste management or water. Yet, WASH aspects are often secondary objectives of the reported programmes and the impact of these programmes for consistent improvement of WASH in health-care facilities remains unclear.

To be added: Data on AMR action plans and coverage of WASH in them

Sources of data: Monitoring and Evaluation of the Global Action Plan on Antimicrobial Resistance, Global Database for the Tripartite Antimicrobial Resistance (AMR) Country Self-assessment Survey (TrACSS) <http://amrcountryprogress.org/>

2019 WHO Global Report WASHinHCF

Policy effectiveness and financing

To be added: GLAAS data focusing on effectiveness (human resources, adoption, etc): and financing of national targets and policies, integrating examples of financing mechanisms and budget lines from deep dives

Responsibilities

National and local authorities, as well as local actors or the facility itself are named as responsible bodies for provision and/or enforcement of WASH services in health care facilities¹². However, the information on responsibility allocation for provision, licensing, maintenance, funding, monitoring and surveillance for WASH in health-care facilities is very low and differs significantly between the countries.

The country deep dives showed that in general the Ministries at the national level are responsible for the legal frameworks, while the local administrations may provide the services for water and sanitation at the facility level.

For example, in one country the government is legally bound to guarantee for the provision of water to the population, but the implementation of the provision at the facility levels lies within the communal services, e.g. for water, sewage and electricity upon financial reimbursement. These procedures are regulated and supervised by the Ministry of Energy and Water Resources.

The responsibility for the provision of WASH services in other countries is more broadly distributed between the different ministries. For example, in another country, the main actors for the provision of WASH in health care facilities at the national level are the Ministry of health, Ministry of Ecology, Spatial and Urban Planning, Ministry of Finances and Social Care, Institute of Public Health of Montenegro; and at the sub-national and local level the local self-government units, public utility companies as well as the healthcare facilities. The level of cooperation and of intersectoral working groups also differs from country to country, however no country reported a continuous multisectoral

¹² Regional meeting report

coordination mechanism for WASH in health care facilities. One country reported that ministerial working groups for policy development and project implementation are often implemented ad-hoc between the the Ministry of Health and the Ministry of Environmental Protection.

In rural facilities in most countries different regulations and cooperation are in place. In one country, in rural facilities without centralized system the head of facility is legally responsible for the provision of water. In another country it was also identified that, in rural facilities without staff with expertise on WASH (e.g. epidemiologist or hygienist) general collaboration between public health authorities and facility is rare.

With respect to monitoring and surveillance, in many countries the state authorities, namely the Ministries of Health and their respective Public Health Institute are the responsible actors for monitoring, and often conduct routine and ad hoc inspections. Only in few cases the hospitals are responsible for surveillance. Definitions and indicators of surveillance differ significantly between the countries.

(KARIN) To be added:

- not-systematic general summary of responsibilities and institutional structures for WASH in HCFs from deep dives (TJK, SRB, GEO, HUN, MNE) to complement information already there present common situations and exceptions and check if specific examples need to be mentioned for particular differences observed across groups of countries – see example in policy sub-chapter

Surveillance

Many countries have a surveillance system in place (reported by 17 out of 19 countries participating in the 2017 Regional meeting), mainly for enforcement purposes or even monitoring systems for data collection. Whereas only a few countries can provide empirically collected figures and numbers on the coverage of services related to WASH, while the majority have some data on hygiene (12 out of 15 reporting countries). The data reported from these countries often comes from one-off assessments like a study or a project in half of the cases, and in the other half from regular, national monitoring. These findings are supported by the outcomes from the country deep dives: The surveillance system for WASH in health care facilities differs from country to country and range from routine annual surveillance with national coverage to one-off assessment on specific conditions. A summary of the results can be found in the table below. In several countries, there are two or more surveillance systems in place for assessing data regarding the quality of care in health care facilities, including on WASH aspects. In one country, for example, the main surveillance system collects general data on the quality of health care. This is supported by additional data collection for thematic-specific or service-specific data from the facilities, such as on patient safety, or patient and staff satisfaction. These systems address only some elements of WASH, such as general hygiene and the presence of toilets, without reflecting their usability or accessibility. At the same time, a dedicated surveillance system is in place to monitor the provisions for basic WASH services in health care facilities, aiming at decreasing hospital-acquired infections, as regulated by the law. In contrast, in another country, the annual situation analysis on the status of health care, an integral part of the health care planning and programming process and one of the most important instruments for improving the development of health care and increase its efficiencies, does not consider any WASH related aspects. WASH aspects are being partially surveyed under sanitary-technical conditions in health care facilities by the Ministry of Health, according to predefined plan and structured checklists, but with limited coverage. In addition, an on-off inspection of the medical waste management system in several institutions in this country was conducted, through which main shortcomings in the system were identified. All plans have been updated, and based on the shortcomings identified in the inspection, it was possible to adapt the respective Medical Waste

Management plan. Results from the surveillance are commonly not publicly published, but may have regulatory consequences, e.g. lead to a release of a permit/license for the health care facility for newly built or renovated facilities, or a repetitive violation of rules can lead to a withdrawal of licenses/permits such as for inpatient facilities.

The coverage of existing surveillance mechanisms differs between countries: rarely covering all facilities, but often focusing on hospitals and/or urban areas and covering up to two-thirds of health care facilities in the country or even more limited. Due to the different natures of the surveillance systems, and sometimes multiple systems in place, it is challenging to identify the real coverage of facilities even within one country.

Table XX - Table XX – Overview on monitoring and surveillance from the country deep-dives

Dimension	Situation in the countries from the in-depth review		
Monitoring systems are in place	In all countries some kind of monitoring system was in place. This ranged from dedicated surveillance systems for WASH in health care facilities, monitoring of certain aspects (e.g. drinking-water quality, wastewater from HCFs, IPC programmes) to surveillance systems on the quality of health care covering some WASH indicators.		
Monitoring comprehensive of all WASH dimensions*	One country had several gaps in the surveillance system for WASH in health care facilities.	Two countries did not have surveillance systems that are comprehensive of all WASH dimensions.	In one country monitoring was comprehensive of all WASH dimensions.
Monitoring conducted systematically using surveillance checklists*	One country conducted monitoring through individual inspection without checklist.	Three countries used surveillance checklists for their monitoring.	
Monitoring reflecting international indicators and definitions*	In two countries the monitoring did not reflect international indicators.	One country international indicators were only partially reflected, with the sanitary inspection list lacking critical aspects.	In one country international indicators were reflected in the standards.
Monitoring with national coverage*	In three countries the national monitoring system had gaps, for example with regards to rural or outpatient facilities, or sometimes the information relies only on self-reporting.		In one country the monitoring system had a national coverage.
Results used to develop, review and implement policies and targets*	In one country data are not further used.	In two countries data are not regularly used for measuring implementation of policies.	One country used the outcomes to assess

			performance of facilities.
National overview on data from WASH in healthcare facilities available*	In one country no national overview was available.	In two countries the national overview was currently under development or the data was not published.	In one country a national overview was available

*n=4 as there was no information from one country provided.

Beside these official mechanisms under the responsibility of governmental agents, committees for internal control of the quality of health care or patient satisfactory are established at the facility level, for example in Montenegro and Serbia. In Kyrgyzstan, according to the law, everyone has the right to submit an appeal regarding conditions in health care facilities.

Besides routine surveillance, a number of countries in the Region have conducted ad-hoc assessments and one-shot surveys to create a baseline, or an in-depth picture of the conditions of WASH services in health care facilities at the national and local level. These assessments have been conducted for example in form of pilot surveys or comprehensive data collections. In Moldova, for example, a pilot survey was used to gain a quick insight on possible gaps of the routine surveillance and shed a light on the priorities for action to inform follow-up improvement projects. In Kazakhstan, a pilot survey has been conducted in the context of a broad environment and health development project, to gain information specifically on the conditions in two priority regions considered as underdeveloped compared to the rest of the country. In other countries, national data collections have been conducted with different methods and means depending on the resources available and the objective of the assessment. In Hungary, for example, a self-assessment questionnaire has been collected from inpatient facilities on a comprehensive set of indicators related to environment and health and on IPC, where WASH indicators in line with national recommendations have been integrated. In Georgia, Montenegro, Serbia, Tajikistan, because of the lack of a comprehensive database on WASH conditions in health care facilities, nationally representative surveys of facilities at all health care level have been conducted through inspections and structured interviews. In Albania, a self-reported questionnaire was used to collect data on core indicators from facilities at all health care levels.

6. The windows of opportunity to strengthen WASH in health care facilities at the national level

Health-care related policies and programmes already in place may serve as possible point of entrance and open a window of opportunity for further strengthening of WASH.

Many countries have implemented or are implementing WASH-related programmes in place, as well as programmes targeting at environmental sustainability of health-care facilities, antimicrobial resistance control, quality of health care, as well as disaster preparedness. Even though explicit reference or action for WASH is not commonly observed, these topics are recognised as having a close interconnection to WASH in health-care facilities. The benefits of having inter-disciplinary programmes and policies is manifold: for example, implementation of water, sanitation, and health care waste policies and programmes taking into consideration climate variability and change, and environmental sustainability, will contribute to ensuring the health and the safety of health care workers, patients and the communities around the health care facilities. Existing programmes and national priorities open a window of opportunity for further strengthening WASH topics in health-care facilities.

For example, in Tajikistan plans are in place for strengthening primary health care. Also, significant implementation programmes are undergoing for strengthening vaccination, which can be an entry point for promoting hand hygiene and safe management of waste.

Another example, is the programme for improving environmental sustainability of health-care facilities Sweden, including goals of managing and minimizing waste and hazardous chemicals, as well as reduction of emissions of air pollutants and greenhouse gases. These examples show the potential of waste management as a strong interconnector between WASH services and other relevant areas of work in healthcare settings.

Also, ongoing and past efforts done to strengthen programmes and implementation of measures for IPC (and control of nosocomial infections) have proven successful and could be an efficient entry point for improving provisions for quality WASH services, especially related to water and wastewater systems operation and maintenance, environmental cleaning and waste management.

Integration of WASH in health care facilities into already existing regulations or policies provide an opportunity to enforce implementation of basic service provision

Policy frameworks and rules and regulations set the legal basis for the provision of health care services in all countries. Rules and regulations on topics closely connected to WASH in health care facilities, for example on IPC, already exist and are enforced in several countries in the Region. These regulations can serve as an entry point for integrating requirements on WASH in health care facilities and to ensure at the same time that their implementation is imposed. In addition, policy frameworks on health system strengthening provide an opportunity to feature WASH requirements at a high-level.

While WASH in health care facilities has not been a priority in several of the countries in the Region, a minimum legal basis is generally in place and many existing mechanisms at the policy and institutional level can support strengthening efforts on ensuring quality provisions of WASH services in health care facilities.

Many countries report of surveillance systems and accreditation mechanisms that do at least in part address WASH services or highly interconnected topics such as IPC. A number of regulations and programmes on linked thematic areas are already in place that could be useful to prioritize and mainstream WASH in health care facilities. For example, in Serbia, as in other countries, various

structures and programmes dedicated to quality of health care and IPC exist, which can be used as an entry point for efficient strengthening of operation and maintenance of water and sanitation services at the facility level as well as cleaning procedures and safe waste management.

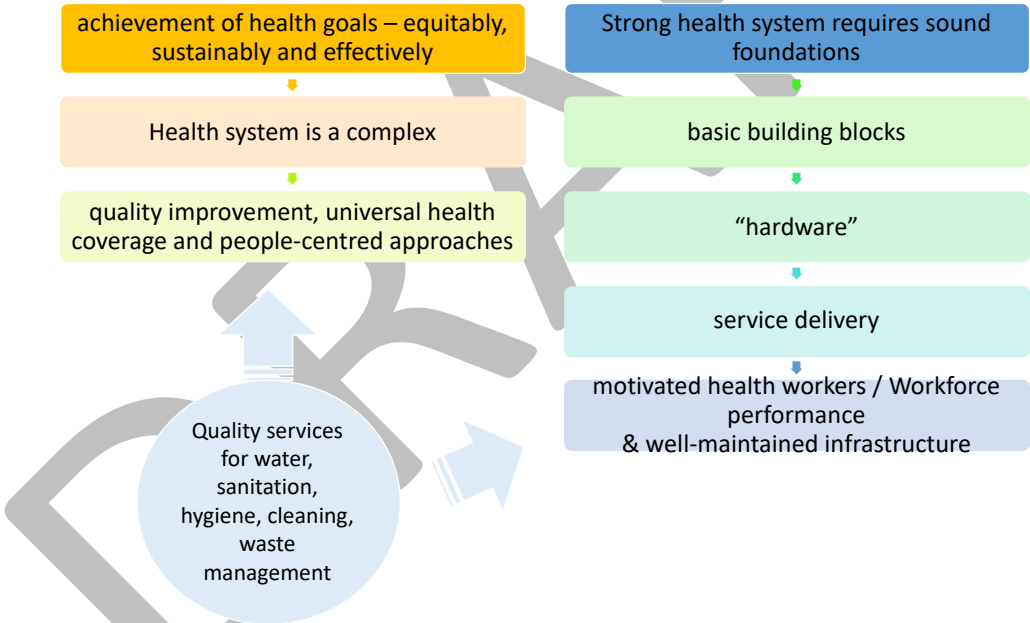
The European network to promote infection prevention for patient safety (EUNETIPS) is a good example of collaboration between several countries in order to promote and coordinate infection prevention control and safety programmes among the European region and consists of members from scientific and professional societies.

The work on health system strengthening, could integrate WASH considerations as an essential component of a functioning healthcare system.

The health-related SDGs cannot be achieved through reliance on disease-specific achievements or financial reforms alone. It requires a strong commitment to creating people-centred, high-quality health services. Achieving universal health coverage built on a firm foundation of safe, high-quality care, together with all that is necessary to sustain it, is the imperative facing policy-makers today.

To achieve global health goals, countries need to focus on health system strengthening, which is a great opportunity for countries to increase attention on and prioritization of WASH services as a first step towards implementation (Figure X).

Fig. 5 strengthening WASH as the foundation of strengthening health systems



Systems thinking can help countries to understand the constraints and areas of weakness within the health system, including those related to WASH provisions, and to apply this understanding to design and evaluate targeted, context-specific interventions. Improving WASH services will serve at building strong foundations upon which health systems can expand and enhance their medical skills and technologies, while ensuring at the same time equity, sustainability, efficiency, safety and patients’ satisfaction.

Systemic improvement of WASH services in the context of quality improvement, universal health coverage and people-centered approaches within the health systems is needed to support the achievement of health goals – equitably, sustainably and effectively.

Financial investments in WASH in healthcare facilities have the potential to yield a high return on investment when applying particular approaches such as setting-up dedicated budget lines.

In the Region, only one fifth of all countries have sufficient funding for more than 75% of financial requirements for WASH in health care facilities in the particular country. This alarming finding highlights the vulnerability and dependence of WASH funding when no secure funding is available. It is clear that the finance sector shares a great part of the responsibility for ensuring good WASH services in healthcare facilities and can have a positive impact.

It is essential that more resources are mobilized into the sector by different means, for example by incentivizing sector performance, subsidy targeting and promoting better sector planning and management to maximize value from existing public funding (REF).

The work on strengthening maternal healthcare and reduction of antimicrobial resistance may not neglect basic WASH provisions for the protection of the health of mothers and newborns.

The majority of countries in the region have policies for maternal and newborn health and at least 10 countries in the have national standards for delivery of health services specifically for young people (10-24 years of age)¹³. As many of these policies already address at least the availability of clean water, institutional bodies and professionals working in these areas could be easily encouraged to give more attention to other environmental aspects related to the provisions of WASH of critical importance for the health and well-being of the patients in these groups. Also, in some countries, increased efforts have been put for strengthening this care services. For example, in Tajikistan, the Ministry of Health and Social Protection, with the support of partner agencies, is working on rehabilitating maternal houses and departments, also addressing the provisions of basic services for water, sanitation, hygiene, waste management, among others.

Targeted assessments and situational analysis on WASH in health care facilities can be a drive for improvement while providing essential insights on the situation in the countries, including gaps in service provision, processes in place at the national and facility levels as well as on the priorities for a national definition of advanced service level

One-shot surveys or targeted assessments are useful to gain a comprehensive overview of WASH conditions in health care facilities. The objective information gained can be used for informed policy-making, assessing quality, completeness and consistency of data collected by existing surveillance systems, establishing national and subnational baselines for target-setting, programming and planning, for advocacy purposes, or to initiate a dialogue with relevant stakeholders.

For example, the government in Hungary conducted 2019 a situational assessment in 206 health care facilities including an analysis of the regulatory environment and review of national standards and guidance, a systematic review of published scientific and grey literature; and a self-reporting survey

¹³ Information from countries that responded to the Global Maternal, Newborn, Child and Adolescent Health Policy Indicator Surveys (2009–10; 2011–12; 2013–14; 2016) undertaken by the Department of Maternal, Newborn, Child and Adolescent Health; World Health Organization (274)

of WASH and environmental conditions. The results indicated that while regulation covers most aspects of WASH (i.e. infrastructure, legal requirements and operational guidelines), certain elements are overlooked, including menstrual hygiene, environmental aspects of IPC, wastewater management and monitoring. The survey revealed existing inequities in access to WASH services including for people with limited mobility and lack of menstrual hygiene management (MHM) facilities.

In Tajikistan, an assessment conducted in XXX, highlighted main gaps for WASH in health care facilities in legal framework, coordination and data availability. These findings set the starting point for an integration of WASH in health care related policies (i.e. on AMR and in the national health strategy), thereby strengthening coordination of partners and donors working in the field. The findings also showed the need for further assessment and led to the conduction of the first nationally representative survey.

Serbia conducted a nationwide assessment in 2019 and led to strengthening in collaboration between the Ministry of Health and the Ministry of Environment for waste and wastewater management, but also within the different departments with responsibilities for WASH services and environmental cleaning in the Ministry of Health. In addition, the formulation of advanced WASH service level indicators was initiated which will be integrated into routine surveillance and monitoring of WASH and for reporting progress towards implementation of SDG 6.

To be added: more examples from countries

Annex

Annex 1 Goals and countries commitments at the global and regional levels for WASH in health care settings

Call/Comittment	Targets and actions
Global	
Sustainable Development Goals (SDGs)	Target(s)
SDG 3 Ensure healthy lives and promote well-being for all at all ages	3.8 Achieve universal health coverage, including ... access to quality essential health-care services...
SDG 6 Ensure availability and sustainable management of water and sanitation for all	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all ... paying special attention to the needs of women and girls and those in vulnerable situations
World Water Day 2018, the United Nations Secretary-General made a global call for action for WASH in all health care facilities Secretary-General, at launch of International Decade for Action, supports new approaches for better managing fresh water scarcity [Internet]. UN Press Release: 22 March 2018 [cited 25 February 2019]. -	Global Call to Action to elevate the importance of and prioritize action on WASH in all health care facilities, including primary, secondary and tertiary facilities in both the public and private sectors. The call recognises the important role WASH plays in preventing infections, saving lives, and improving quality of care. As such, all UN agencies, Member States, and partners are now being asked to invest more in this critical component for health and wellbeing.
Water, sanitation and hygiene in health care facilities. Geneva: World Health Organization; 2019 <i>World Health Assembly (WHA) resolution on WASH in health care facilities adopted at its 72nd session.</i>	The resolution stresses the fundamental importance of adequate WASH services in achieving universal health coverage (UHC) and re-emphasizes attainment of the WASH related commitments, such as expressed by SDGs 3 and 6. The resolution calls upon Member States to improve WASH in health care facilities through conducting, among others, comprehensive assessments of the WASH conditions according to the national context, on the base of which follow-up actions should be identified and prioritised.
COVID-19 response. Geneva: World Health Organization; 2020 <i>WHA resolution 73.1 on COVID-19</i>	urges countries to take measures to support access to safe WASH, and infection prevention and control,

	ensuring that adequate attention is paid to the promotion of personal hygienic measures in all settings, including humanitarian settings, and particularly in health facilities
<p>WHO Manifesto for a healthy recovery from COVID-19: Prescriptions for a healthy and green recovery from COVID-19. (26 May 2020)</p> <p>Actionables for a healthy recovery from COVID-19: Actionables to the prescriptions of the WHO Manifesto (23 July 2020)</p>	Invest in essential services, from water and sanitation to clean energy in healthcare facilities (health care facilities be equipped with water and sanitation services, including the soap and water)
WHO European Region	
<p>Declaration of the Sixth Ministerial Conference on Environment and Health. Copenhagen: WHO Regional Office for Europe; 2017</p> <p>Annex 1. Compendium of possible actions to advance the implementation of the Ostrava Declaration. In: Declaration of the Sixth Ministerial Conference on Environment and Health. Copenhagen: WHO Regional Office for Europe; 2017</p>	commitment for action on environment and health priorities, In particular, the compendium of possible actions to the Ostrava Declaration defines that ensuring and sustaining the provision of adequate WASH services in schools and health care facilities should be pursued through systematic situation assessments and by setting national targets and action plans towards progressive improvement.
<p>Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Geneva: United Nations Economic Commission for Europe and WHO Regional Office for Europe; 2006</p>	<p>prioritize action on WASH in health care facilities, as expressed by the programmes of work for the periods 2017–2019 and 2020–2022</p> <p>as the only multilateral agreement in the WASH domain for the Region it is the primary instrument to implement the global and regional goals on water and health, providing a practical platform for policy dialogue and facilitates the development of integrated policies and targets to achieve universal access to WASH in institutions.</p> <p>Source: Water, sanitation and hygiene in health care facilities. [Webpage] WHO Regional Office for Europe. (accessed 12/2020; https://www.euro.who.int/en/health-topics/environment-and-health/water-and-sanitation/schools-and-health-facilities/water,-sanitation-and-hygiene-in-health-care-facilities)</p>

Annex 2 Outcome of in-depth analysis of the policy framework in selected countries of the pan-European region

<i>Dimensions</i>	<i>Indicators</i>	<i>TJK</i>	<i>SRB</i>	<i>HUN</i>	<i>GEO</i>
	A legal framework exists	+	+	+	

Legal framework and political leadership	Policy and Regulations, containing national service norms, is approved	+	+	+	
	Policy and Regulations are comprehensive of all dimensions of WASH	-	+	+	
	Policy and Regulations include the human right to water and sanitation and are inclusive	O	+	+	
	Requirements are in line with the WHO Essential standards	O	+	NA	
	Requirements are legally binding	+	+	+	
	Requirements are in line with emerging issues (e.g. Legionella, AMR, HAIs and sepsis)	O	+	O	
	Targets under the protocol on WASH in HCFs are drafted or approved	+	-	NA	
	Accountability mechanisms are clearly defined	O	+	NA	
	There is an ongoing national or sub-national plan/programme targeted at implementing and improving compliance with the law for WASH in health care facilities	O	O	+	
	WASH is reflected as a component in programmes targeted at quality health care, health care sustainability, etc.	O	O	O	
	Political leaders promote and commit to accelerate improved WASH services	+	O	NA	
	WASH in healthcare facilities are prioritized	O	O	NA	