

## **Patient safety**

### **Water, sanitation and hygiene in health care facilities**

#### **Report by the Director-General**

#### **BACKGROUND**

1. Water and sanitation should be accessible in all settings, particularly in health care facilities, where people are at their most vulnerable.<sup>1</sup> Yet the first ever global assessment conducted by WHO and UNICEF in 2015 found that nearly 40% of facilities lacked water, 19% were without adequate sanitation and 35% did not have materials for hand hygiene. Furthermore, just over 40% did not safely manage health care waste.<sup>2</sup> Access to water, sanitation and hygiene (WASH) services in birthing settings and primary health care facilities are even lower than in other service areas or types of facilities, highlighting important inequities. These failings undermine the promise of universal health coverage and renewed efforts on primary health care and adversely affect quality care and infection prevention and control. Lack of WASH in health care facilities also contributes to the unnecessary use of antibiotics and the spread of antimicrobial resistance. To call attention to this issue of fundamental importance to health and development, the United Nations Secretary-General issued a global call to action on WASH in health care facilities in March 2018.

#### **IMPACTS OF INADEQUATE WASH IN HEALTH CARE FACILITIES**

2. Limited access to WASH impedes the ability to maintain hygienic environments and prevent health care acquired infections. An estimated 15% of patients develop one or more infections during a hospital stay.<sup>3</sup> The risks associated with sepsis are 34 times greater in low-resource settings.<sup>4</sup> The costs of health care acquired infections are high and preventable. In the United States of America alone, in 2007 the overall direct inpatient medical cost of health care associated infections was between US\$

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<sup>1</sup> The United Nations General Assembly recognized the right to safe and clean drinking water and sanitation as a human right that is essential for the full enjoyment of life and all human rights (resolution 64/292).

<sup>2</sup> As stated later in the report, WHO and UNICEF will release new figures on WASH in health care facilities in early 2019. These will be based on updated indicators and reflect data from significantly more countries and facilities.

<sup>3</sup> Allegranzi B, et al., 2011. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *Lancet*, 377: 228-241.

<sup>4</sup> Oza S, et al., 2015. Neonatal cause-of-death estimates for the early and late neonatal periods for 194 countries: 2000-2013. *Bulletin of the World Health Organization*, 93:19–28.

35.7 and 45 billion,<sup>1</sup> while in 2008 the European Centre for Disease Prevention and Control estimated that the annual economic impact in Europe was as high as €7 billion.<sup>2</sup>

3. More than 1 million deaths each year are associated with unclean births, while infections account for 26% of neonatal deaths and 11% of maternal mortality.<sup>3</sup> Lack of access to water and sanitation in health care facilities may significantly compromise safe birth and cause delays in care-seeking.<sup>4</sup> Furthermore, lack of access to WASH services, which are especially absent in maternity and primary care settings, undermines core universal health care aspects of upholding dignity and equity and the fundamental premise that all individuals deserve quality care.

4. While inadequate WASH enables infections – and by extension the spread of antimicrobial resistance – evidence suggests that poor WASH in health care facilities also leads to increased prophylactic use of antibiotics before birth, which may be an important contributor to antimicrobial resistance. Antimicrobial resistance is a major factor determining clinical unresponsiveness to treatment and rapid evolution to sepsis and septic shock. Almost one third of the 670 000 neonatal deaths due to sepsis worldwide each year may be attributable to resistant pathogens.<sup>5</sup> Finally, unsafe disposal of wastewater from health care facilities contributes to the spread of antimicrobial resistance in the environment.

5. Unsafe management of health care waste presents specific health risks. Unsafe disposal of needles and syringes increases risk of injury and opportunities for reuse. In 2010, unsafe injections were responsible for as many as 33 900 new HIV infections, 1.7 million hepatitis B infections and 315 000 hepatitis C infections.<sup>6</sup> Release of pathogens and toxic pollutants, including dioxins and furans, into the environment through inadequate incineration presents additional health risks worldwide (WHO, 2014).<sup>7</sup>

## CHALLENGES

6. Many countries have incomplete WASH in health care facility standards, while if they do exist there is limited financing or action to drive implementation. While approximately 80% of 78 countries who participated in the WHO-led Global Analysis and Assessment of Sanitation and Water survey

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<sup>1</sup> Scott II R. The direct medical costs of health-care associated infections in U.S. hospitals and the benefits of prevention. Atlanta: Centers for Disease Control and Prevention; 2009.

<sup>2</sup> Annual epidemiological report on communicable diseases in Europe. Report on the state of communicable diseases in the EU and EEA/EFTA countries. Stockholm: European Center for Disease Prevention and Control; 2008. ([https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0812\\_SUR\\_Annual\\_Epidemiological\\_Report\\_2008.pdf](https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0812_SUR_Annual_Epidemiological_Report_2008.pdf), page 27; accessed 12 November 2018).

<sup>3</sup> Say, L., et al., Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health*, 2014. 2(6): p. e323-33.

<sup>4</sup> Velleman Y, et al., 2014. From joint thinking to joint action: a call to action on improving water, sanitation, and hygiene for maternal and newborn Health. *PLoS Medicine*; 11(12): e1001771.

<sup>5</sup> Laxminarayan R, Matsuoka P, Pant S, et al. Access to effective antimicrobials: a worldwide challenge. *Lancet* 2016; 387: 168–175.

<sup>6</sup> Pépin J, et al., 2014. Evolution of the global burden of viral infections from unsafe medical injections, 2000-2010. *PLoS One* 9;9(6):e99677.

<sup>7</sup> Safe management of wastes from health care facilities. Geneva: World Health Organization; 2014 ([https://www.who.int/water\\_sanitation\\_health/publications/wastemanag/en/](https://www.who.int/water_sanitation_health/publications/wastemanag/en/), accessed 2 November 2018).

have a policy for WASH or infection prevention and control, less than 25% reported that these policies are fully funded and being implemented.<sup>1</sup> In addition, climate change threatens the safety and sustainability of WASH services in health care facilities, which are the very institutions that need to be prepared to deliver services in response to climate events and disease outbreaks.

7. Staff in health care facilities are usually overburdened and often have neither the incentives nor the training to improve and manage WASH services. Facility administrators, health care providers and patients alike often consider that problems of inadequate WASH are intractable, particularly if needed improvements are thought to require costly basic infrastructure.

8. While health management information systems require facility administrators to report on key inputs for delivering safe, quality and effective care, few national health management information systems collect meaningful information on WASH in health care facilities. The 2015 review by WHO and UNICEF highlighted the lack of data in most countries on WASH in health care facilities. In that review, nationally representative data could only be accessed for 20 countries. In most cases, the only available data are from facility assessments since WASH information is rarely collected in health management information systems databases. Without reliable data on the quality of WASH services, disaggregated by facility type and location, it is difficult to develop and cost plans for improvements.

9. Often WASH in health care facilities is dealt with in an isolated compartment within the Ministry of Health that is heavily under-resourced. Furthermore, environmental health is often disconnected from other key health programmes, resulting in a lack of inclusion of WASH in health care facilities standards and a lack of development of costed WASH elements in other areas of health services, such as quality of care, maternal and child health, and outbreak preparedness and response. Similar concerns exist for other issues linked to basic environmental infrastructure in health care facilities, notably in the area of sustainable and clean energy.

10. Many national health budgets are organized and prioritized around diseases and fixed costs, such as workforce, rather than on delivering core health systems functions. This contributes to a lack of funds for infrastructure and repair and for the human resources needed to operate, maintain and perform regular functions such as cleaning. And while many countries have decentralized budgeting responsibilities, there are often few local or sufficient revenue schemes to generate funds for WASH in health care facilities, especially in rural areas. This is compounded by the fact that many primary health care services (immunizations, antenatal care, etc.) are provided free of charge and thus do not generate revenue to cover recurrent costs or handling of wastes, such as safe disposal of sharps waste.

11. Furthermore, most low-income countries and parts of many middle-income countries lack fully functioning, safely managed municipal water and sanitation services. Ensuring safe WASH services in health care facilities may require large capital investments that are beyond the financial means of health budgets. Investing in such infrastructure will require effective intersectoral collaboration and as countries incrementally work towards providing universal global access to WASH, the health care facility setting requires particular attention.

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<sup>1</sup> UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) 2017 report. Geneva: World Health Organization; 2017 ([http://www.who.int/water\\_sanitation\\_health/publications/glaas-report-2017/en/](http://www.who.int/water_sanitation_health/publications/glaas-report-2017/en/), accessed 2 November 2018).

## LESSONS LEARNED

12. Provision of WASH services and practicing safe hygiene behaviours in health care facilities is achievable. Incremental improvements, such as the installation of simple hand hygiene stations, coloured waste bins and hygiene training and mentorship, are measures that are relatively inexpensive and can be implemented rapidly while longer-term efforts to improve infrastructure are being planned. Such improvements may also have positive ripple effects on WASH practices in communities. Experiences from several countries have shown that simple and low-cost measures, such as improving the cleanliness of toilets or installing handwashing stations and water treatment systems, can improve the quality of care, increase the uptake of services and encourage community members to change WASH practices at home, such as regular handwashing with soap at critical moments.

13. Clean and hygienic health care facilities that provide patients and their caregivers with necessities, such as safe drinking water and functional toilets, can help establish trust in health services and encourage mothers to seek prenatal care and deliver in facilities rather than at home – two important elements of the strategy to reduce maternal and newborn mortality.<sup>1</sup> A recent systematic review of WASH and quality care found correlations between adequate WASH services in health care facilities and care-seeking and patient satisfaction, which in turn had a positive impact on health outcomes.<sup>2</sup> Similarly, staff morale and performance suffer when there is a lack of WASH services. For example, a lack of water for handwashing not only inhibits the ability of staff to provide quality care but also undermines staff dignity and their own safety.

14. Among countries for which data on the provision of water and national plans are available, there is a greater proportion of facilities with access to water services, suggesting that national policies are an important element of improving services.<sup>3</sup>

15. Implementation efforts have consistently highlighted the importance of leadership. The WHO/UNICEF Water and Sanitation for Health Facility Improvement Tool (WASH FIT) recognizes leadership as essential for improving WASH in health care facilities.<sup>4</sup> In Ethiopia, the Vice Prime Minister's leadership role in the Clean and Safe Hospitals (CASH) programme helped catalyse action. The engagement of facility leaders, sensitizing all staff to the importance of WASH and cleanliness and empowering cleaners, contributed significantly. In the Democratic Republic of the Congo and Haiti, an increased uptake and ownership of WASH in health care facility programming was noted once health care leadership was trained on how WASH contributes to quality of care. A number of other examples exist from countries such as Cambodia, Ghana, India, Tajikistan and the United

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<sup>1</sup> Russo ET, et al., 2012. Water treatment and handwashing behaviors among non-pregnant friends and relatives of participants in an antenatal hygiene promotion program in Malawi. *American Journal of Tropical Medicine and Hygiene*, 86:860-865.

<sup>2</sup> Bouzid M and Hunter P, 2018. What is the impact of water, sanitation and hygiene in healthcare facilities on care seeking behaviour and patient satisfaction? A systematic review of evidence from low- and middle-income countries. *BMJ Global Health*. 3;3 (<https://gh.bmj.com/content/3/3/e000648>, accessed 2 November 2018).

<sup>3</sup> Water, sanitation and hygiene in health care facilities: status in low- and middle-income countries and way forward. Geneva: World Health Organization/UNICEF; 2015 ([https://www.who.int/water\\_sanitation\\_health/publications/wash-health-care-facilities/en/](https://www.who.int/water_sanitation_health/publications/wash-health-care-facilities/en/), accessed 2 November 2018).

<sup>4</sup> Water and sanitation health facility improvement tool. Geneva: World Health Organization/UNICEF; 2018 ([https://www.who.int/water\\_sanitation\\_health/publications/water-and-sanitation-for-health-facility-improvement-tool/en/](https://www.who.int/water_sanitation_health/publications/water-and-sanitation-for-health-facility-improvement-tool/en/), accessed 2 November 2018).

Republic of Tanzania, where leadership and system-wide efforts to improve quality of care have driven action and investments in WASH in health care facilities.

## **WHO ACTIVITIES**

16. WHO and UNICEF have been coordinating a number of activities to accelerate advocacy, monitoring, national standards and joint WASH and health implementation. Global harmonized indicators have been developed, leading to significantly more precise and comparable country data, which now makes this issue amenable to target setting and measurement.

17. Through a coordinated headquarters, regional and country approach, WHO is providing technical and financial support to more than 20 countries to establish and strengthen intersectoral leadership and coordination. WHO is also supporting ministries of health in countries such as Cambodia, Liberia, the United Republic of Tanzania and Zambia to develop and implement WASH in health care facility standards and specific standards on health care waste. Implementation of these standards occurs by delivering training and providing ongoing mentoring support on the above-mentioned WASH FIT process. Technical support drawing on WHO's standards and tools, delivered through partners, has benefited many more countries.

18. Strong cross-departmental collaborations have allowed for WASH in health care facilities standards to be embedded in WHO global initiatives in the areas of infection prevention and control, national quality strategies and policies, maternal, newborn and child health, and antimicrobial resistance and emergencies. Joint country missions and implementation efforts are under way in several countries.

19. Regional offices are involved in a number of important regional efforts. The Regional Offices for the Eastern Mediterranean and the Western Pacific have both developed regional strategies, which are embedded in universal health care efforts and take into consideration emergencies and climate resilience. In the Regional Offices for Africa and South-East Asia, where quality of care is a priority among most countries, efforts to establish WASH in health care facilities are being integrated into relevant training, monitoring and implementation packages. The Regional Offices for the Americas and Europe have led efforts to conduct national surveys and to organize forums to discuss results and priority actions. A number of WHO regional offices, including the Regional Offices for Africa, Europe and the Western Pacific, have been engaged in "deep dive" analyses to examine linkages with WASH in health care facilities and quality universal health care and opportunities to further embed and support WASH efforts in health. Finally, in the European Region, multilateral instruments, such as the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the Ostrava Declaration of the Sixth Ministerial Conference on Environment and Health, put due emphasis on WASH in health care facilities and encourage European Member States to set and track targets on WASH in health care facilities and work towards progressive improvements.

## **WAY FORWARD**

20. WHO and UNICEF, in collaboration with over 30 partners and all regions, have developed a global work plan and architecture on WASH in health care facilities to respond to the Secretary

General's call to action,<sup>1</sup> promoting a vision in which every health care facility has functional WASH services and practices that enable essential, quality health services for everyone, everywhere. Global targets and metrics for progress have been proposed and will be verified through monitoring of Sustainable Development Goals 3 (health) and 6 (safe water and sanitation). Specifically, the global targets call for at least 50% of all health care facilities globally and in each region to have basic WASH services by 2022, 80% by 2025 and 100% by 2030. Improvements should focus on inequities across geographic (rural and urban) areas and among primary, secondary and tertiary facilities. In addition, countries are encouraged to set national targets and develop costed plans to incrementally meet such targets. Where universal basic service targets have been met, countries are challenged to define and achieve more advanced levels of service, taking into consideration specific issues relating to antimicrobial resistance, climate and infection prevention and control.

21. The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene will regularly report on progress, with the first global baseline report to be launched in early 2019 in time to inform World Health Assembly discussions in the same year. An advisory group is being established to provide strategic direction and review to WHO, UNICEF and the partners committed to the global workplan on WASH in health care facilities. A UN-Water expert group is dedicated to this issue and will offer technical and implementation support. Actions will focus on five thematic areas: good practice in leadership and governance; improving monitoring and accountability; providing technical assistance and training; empowering civil society, the community and the workforce; and acting on evidence. Internal and external consultation is currently under way to ensure the wide uptake and ownership of the global response, national packages and specific targets on WASH in health care facilities. Finally, a multistakeholder global campaign is planned for supporting countries in conducting national assessments, establishing and implementing standards, securing necessary financing and accelerating fruitful action. The goal is for ministries of health to demonstrate leadership and ownership and coordinate with relevant water, sanitation and infrastructure ministries to ensure and sustain WASH services in all health care facilities.

## **ACTION BY THE EXECUTIVE BOARD**

22. The Board is invited to note this report and to focus its discussions on providing guidance in respect of:

- future action by the Organization in respect of water, sanitation and hygiene in health care facilities; and
- the process of mainstreaming WASH in health care facilities into health programming and monitoring, to ensure that it is sufficiently addressed by health ministries.

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<sup>1</sup> Meeting the challenge: responding to the UN Secretary General's Call on WASH in health care facilities. Meeting report. Geneva: World Health Organization/UNICEF; 2018 ([https://www.who.int/water\\_sanitation\\_health/facilities/en/](https://www.who.int/water_sanitation_health/facilities/en/), accessed 2 November 2018).