

Healthcare-acquired infections and the costs of inadequate water, sanitation and hygiene in healthcare facilities: Experience from 7 African countries

Key messages

- New WaterAid research shows that the current global situation where 1 in 5 healthcare facilities lack basic water and almost 4 billion people access facilities without basic hygiene, results in not only worsened health but also severe economic consequences for low and middle-income countries (LMICs).
- Inadequate water, sanitation, and hygiene (WASH) in healthcare facilities is leading to high rates of healthcare-associated infections (HAIs). The health impact is seen in recorded high preventable mortality and morbidity – a total of 277,160 excess deaths in 2022 in the countries in the study. It is also exacerbating the problem of anti-microbial resistance by increasing the burden of infections, including resistant infections, and its associated over-use of antimicrobials.
- Beyond the health implications, the economic cost of these infections across the 7 countries is also significant - amounting to between 0.4–2.9% of GDP, while the financial cost of treating these infections comes to between 2.5–10.9% of total annual health expenditure.
- The cost to these economies resulting from HAIs far outweighs the minimal investment of less than US\$1 per capita annually needed to provide basic WASH and waste management services in healthcare facilities. Even taking a conservative estimate of the number of these infections that could be prevented using better hygiene, this is an investment that would pay for itself even if only the healthcare budget savings are considered.
- **Investing in WASH in HCFs in these 7 countries would save lives and improve health in the immediate future; make healthcare budget more efficient to address additional important health issues; support countries' economies to grow and prosper; and help to safeguard global health security by strengthening health system resilience to future health threats and helping slow the threat of AMR.**

Recommendations

- Donors and development finance institutions should work with LMIC partners to increase targeted financing for WASH in HCFs and build momentum for these investments as an essential building block of future health and prosperity.
- Governments of low and middle-income countries must prioritise the development and implementation of national and district costed plans on WASH in healthcare facilities, with dedicated budget lines, to coordinate stakeholders and mobilise funding; and should prioritise this as an area for partnership with multilateral development banks and other sources of finance.
- Action on WASH in HCFs must be prioritised as part of global policy and financing commitments on AMR, and reflected in the pandemic instrument as a vital, primary intervention to prevent future pandemics.

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Context

Recent major health threats such as the COVID-19 pandemic, Ebola, and the ongoing rise of anti-microbial resistance (AMR) have highlighted the critical need for strong and resilient health systems with the essential tools in place to protect patients and healthcare workers. However, international discussions have tended to focus on aspects such as product development pipelines, including the development of new antibiotics, with much less emphasis on the critical importance that prevention of infections, including through improvements in water, sanitation and hygiene (WASH), can play in both lowering the overall burden of infections in the environment, and also reducing both the need for antibiotics and their rate of use.

Failure to recognise this and invest in basic health system functions, including WASH in healthcare facilities (HCFs), will hinder efforts to prevent and respond to future epidemics and pandemics. Despite the importance of these services, close to 4 billion people lack basic hygiene services at their HCF, while 1 in 5 lack basic water services, which are undermining the delivery of safe, quality care and the achievement of health for all.ⁱ Although global attention on WASH in HCF has risen in recent years, in part due to the first WHA resolution on the issue in 2019 and the WHO/UNICEF Global Report on WASH in HCF in 2020, national progress in many countries remains slow, hindered by both the insufficient quantity and quality of financing needed to deliver against national standards.

Cost of inaction on WASH in HCF

Lack of essential WASH services in HCFs pose significant health risks for patients, particularly women and children, and healthcare workers. Given that women represent 70% of the global health workforce and the majority of patients in LMICs, women are disproportionately affected by a lack of WASH in HCFs.^{ii,iii}

Healthcare-associated infections (HCAIs) are a major global health concern affecting every health system and country in the world, however rates are much higher in LMICs with an estimated **15.5% of all patients**

developing one or more infections during a healthcare facility stay, compared with 7.6% in high income countries (HICs).^{iv,v} HCAIs are an increasingly important area of focus in the prevention and control of AMR given that a growing proportion of HCAIs are becoming resistant.^{vi} Recent analysis found that **AMR was the leading cause of death globally, with 5 million deaths associated with bacterial AMR in 2019**, of which the majority of pathogens (five out of six) responsible for this burden are healthcare-associated.^{vii}

The major transmission pathway for HCAIs is lack of cleanliness and hygiene measures provided during the delivery of healthcare. Beyond the health impacts, poor WASH in HCF has additional negative consequences as it relates to other aspects of quality care, including patient satisfaction, dignified and respectful care, future healthcare seeking behaviours and healthcare worker morale, motivation and retention, all of which ultimately impact health outcomes.^{viii}

Analysis commissioned by WaterAid, using recent World Bank methodology^{ix} found that in seven African countries¹ (population: 472 million) an estimated **2.6 million cases of HCAIs occurred in 2022** (of which at least 50% are believed to be antimicrobial resistant) **resulting in 277,160 excess deaths**. The economic cost to society was at least \$8.4 billion, costing on average 1.1% of GDP and 4.6% of total health expenditure in these countries. Table 1 outlines the costs associated with HCAIs in these seven countries.

The estimated cost per capita needed to provide basic WASH, waste management and environmental cleaning in low-income countries from previous studies has been estimated at US\$0.3 per capita for capital cost each year and starting at US\$ 0.1 in 2021 to US\$0.39-0.60 in 2030 in recurrent cost. The less than US\$1 per capita needed to achieve basic WASH services in HCFs is minimal compared to the investment needed to achieve the health SDG estimated at US\$58 per capita by 2030.^x

This new analysis from seven countries highlights that the **costs of investing in basic WASH would be recovered from savings in medical costs associated with HCAIs**, given that at least 50% of these costs could be prevented through improvements in WASH, waste management and environmental cleaning in HCFs.

Table 1. Costs of Healthcare-Associated Infections in sub-Saharan Africa in 2022

Country	Total economic cost of HCAs (million)	Cost of HCAI as a percentage of GDP*	Cost of treating HCAs as a proportion of total health expenditure
Ethiopia	US\$ 762	0.68%	4.8%
Ghana	US\$ 1,570	1.98%	4.6%
Malawi	US\$ 246	2.92%	10.9%
Mali	US\$ 73	0.39%	2.5%
Nigeria	US\$ 4,500	0.94%	3.8%
Uganda	US\$ 580	1.43%	7.9%
Zambia	US\$ 674	2.3%	6.9%
Total: US\$ 8,405		Weighted average: 1.1%	Weighted average: 4.55%

* Monetary costs estimated from aggregation of direct healthcare costs, productivity losses and premature deaths.

Challenges to sustainable financing of WASH in HCF

Although WASH features in donor health and water strategies, there is a lack of specific programmes or financing indicators to track resource allocation and progress on WASH in HCFs. Without dedicated budget lines for WASH in HCF, it is more challenging to monitor, track and allocate resources effectively.

Despite growing recognition of the importance of WASH in HCF, financing from both donors and international financial institutions (IFIs) for WASH in HCF remains inadequate, and it is underprioritised in major health initiatives such as those on maternal health and health systems strengthening/UHC, and global health initiatives, resulting in missed opportunities to foster mutual benefits.

These challenges are compounded by inadequate prioritisation of WASH in HCF by national and local governments. As such this has not been

routinely monitored in health management information systems or facility assessments in most countries, nor has there been the development of dedicated budget lines on WASH in HCFs to ensure domestic financing and support resource mobilisation efforts at both local and national levels in these countries. It has also not been sufficiently prioritised in national development and investment plans, strategies, and frameworks. As a result, overall funding from both donors and domestic budgets remains insufficient to meet national targets.

Opportunities to close the funding gap

New analysis from the seven countries highlights the urgent need to mobilise additional financing to close the funding gap for WASH in HCFs. These include action by all stakeholders including donors, the private sector and national governments.

Recommendations for donors

- **Donors must better integrate WASH in HCF as part of health investments**, including on maternal and child health, AMR, UHC and pandemic preparedness and response, as well as incentivising government-led investments in WASH in HCF. Donor investments should align behind national WASH and health system strengthening priorities.
- **Multilateral development banks and other development finance institutions should recognise the strong return on investment offered by WASH in HCFs**, and its potential to lay the groundwork for future health and prosperity. These institutions should work with and support developing country governments to integrate these improvements into national development strategies and provide accessible finance that meets the needs of countries and does not contribute to indebtedness.
- The G7 must invest in **WASH as a primary intervention to tackle the global AMR crisis**, working with LMICs, many of whom have identified WASH in their AMR NAPs as crucial to curbing the spread of AMR in their contexts, to deliver the first pillar of WHO's people-centered approach to addressing AMR in human health: WASH as a tool for infection prevention and control.

Recommendations for national and local governments

- Governments and donors must **develop a dedicated budget line for WASH in healthcare facilities**. This is essential to monitor and track investments.
- **WASH in HCF should be integrated as part of health planning, financing, and monitoring**. This will require tracking and influencing the budget process at all levels and building ownership of WASH in HCF by the health sector including through the development of a dedicated budget line and tracking and influencing the health sector budgetary process.
- Additional financing could be mobilised through the promotion of WASH in HCF as a criterion for **performance-based financing** and advocating for **innovative financing and corporate social responsibility programmes** to focus on filling WASH in HCF funding gaps.
- Governments should **prioritise this as an area for collaboration with multilateral development banks** – including it in national strategies and taking advantage of both new and existing opportunities to access financing offered by MDBs and other IFIs.

Summary

Failure to invest in WASH in HCFs is having a catastrophic impact on the economies and the health systems of sub-Saharan African countries. The situation is only likely to worsen in the context of rising rates of AMR, climate change and future epidemic and pandemic threats, unless immediate priority and increased investment is directed towards these essential health system functions.

The impact of improvements in WASH in HCFs on HCAs alone provides a compelling economic case to invest in these services. Beyond HCAs, improvements in WASH in HCF have far-reaching benefits including patient satisfaction, patient safety, healthcare seeking behaviours and healthcare worker safety, morale, motivation and retention, all of which ultimately impact health outcomes and progress towards the achievement of UHC.

Notes

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