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Thirst for change

Accelerating progress to a water secure future
in the pharmaceutical and healthcare sectors



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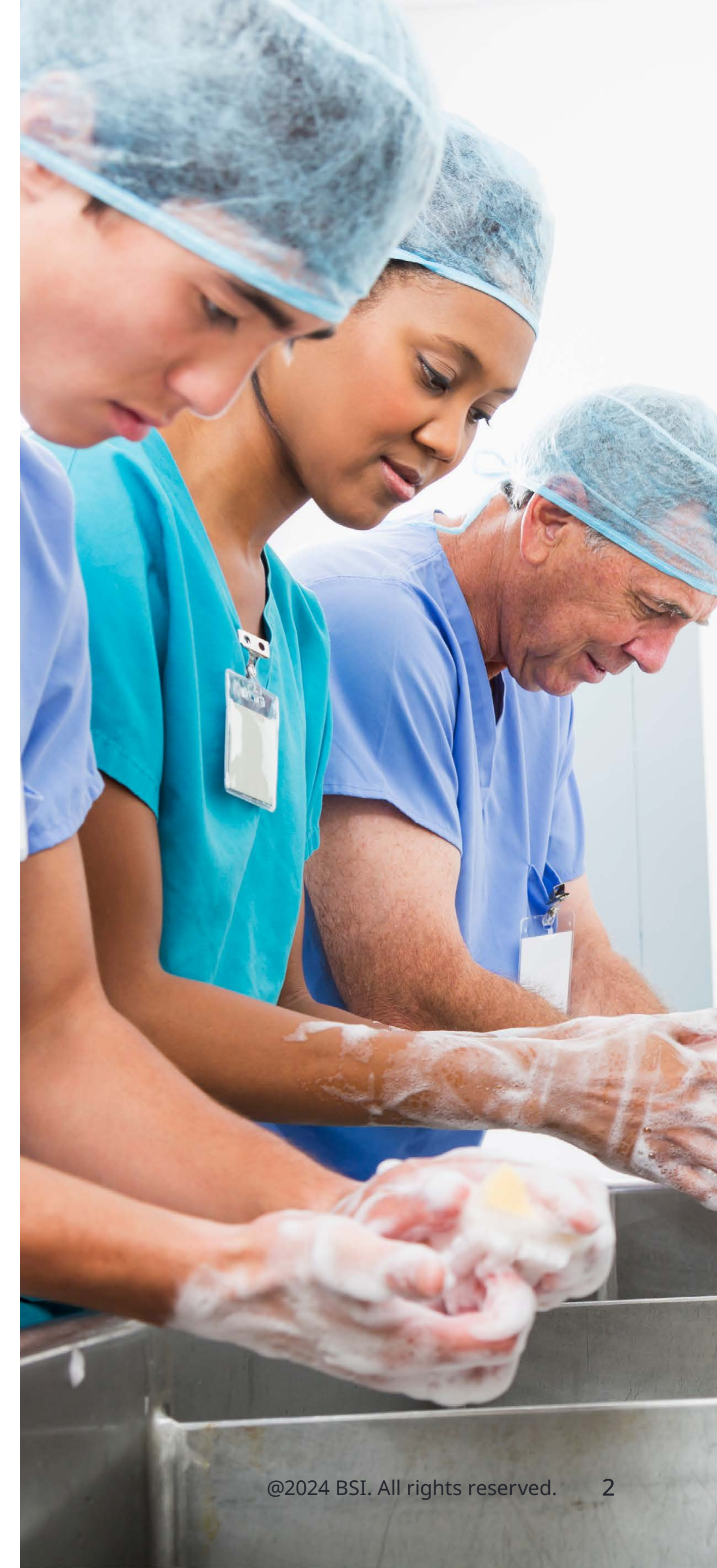
Addressing the challenge of water security is linked to the broader nature strategy within the pharmaceutical sector. Many organizations are tackling biodiversity, water security, deforestation, and waste as part of an overarching nature strategy.

A steady water supply is critical for the pharmaceutical industry to be able to maintain a sterile environment for manufacturing medicines and to carry out key steps in the manufacturing process such as distillation and fermentation. The pharmaceutical industry plays a key role in water security by controlling wastewater streams to ensure chemical pollution does not enter surrounding waterways.

An opportunity exists to anticipate future impacts of both water quality and availability, by working collaboratively in a pre-regulatory context. The challenge is three-fold for the pharmaceutical sector:

- 1 Local community stewardship to ensure accessibility and availability of high-quality water from the source in local environment
- 2 Water footprinting – reducing the use of water in the manufacturing of medicines
- 3 Water quality / wastewater – wastewater leaving a pharmaceutical facility needs to be controlled and treated so not to pollute the surrounding community and waterways.

With collaboration, engagement and a focus on creating solutions across the pharmaceutical industry, there is ample scope for positive change. Every aspect of society depends on high quality medicines from the pharmaceutical sector in one way or another, so the sector is uniquely placed to accelerate progress on water security for the benefit of our society and our planet.



Public understanding of attitudes towards pharmaceutical and healthcare sector water security solutions

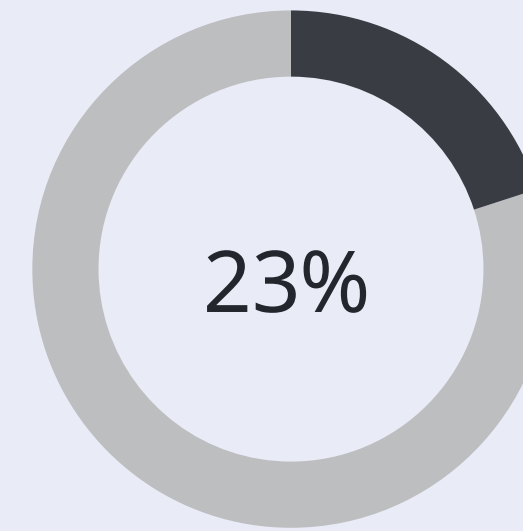
Estimates state that pharmaceutical sector water use accounts for 23% of global water supply¹, in comparison with healthcare sector where facilities in the US account for approximately 7% of total water use in commercial and institutions facilities², and the NHS in the UK uses approximately 50 billion liters of water per year³.

With global water use rising, maintaining a reliable water source is essential in the pharmaceutical sector for the manufacturing of life-saving medicines. Notably, three quarters of people say that medicines should be considered as a critical national security product and therefore governments should prioritize the pharmaceutical industry in the allocation of water supply.

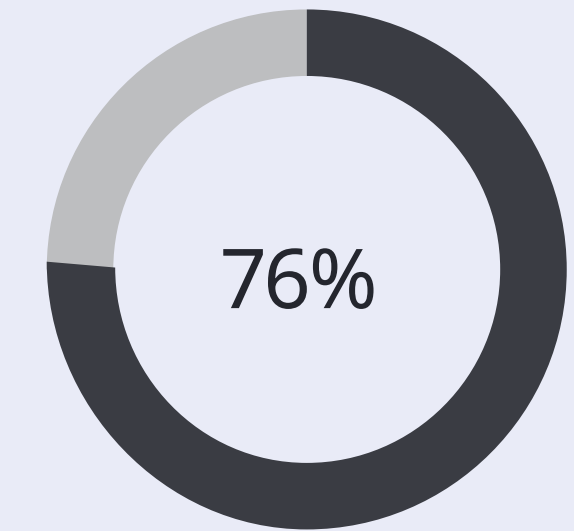
However, people also want to see the sector take responsibility for its wastewater to protect water quality. 82% of those surveyed said pharmaceutical manufacturers should have tight controls of wastewater discharge so chemicals don't enter the surrounding environment, and should incur fines if these are breached, even if this increases the cost of medicines.

Although a distinct ecosystem in its own right, water is equally critical to the healthcare sector. Here, the public also understand the importance of that sector embracing a water saving culture. Four fifths (89%) think hospitals and care facilities should closely manage their usage of water.

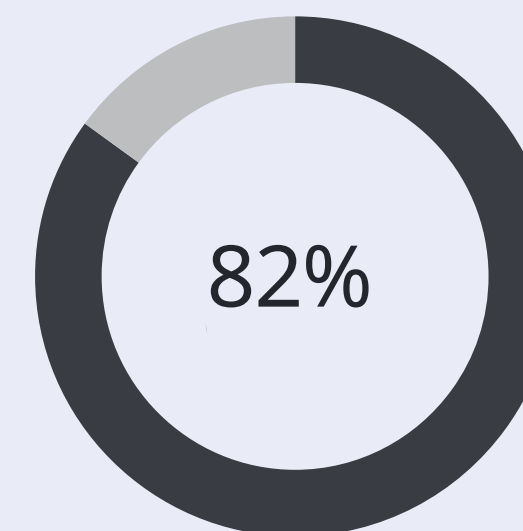
¹ [Water, water everywhere](#), Pharmaceutical Technology Europe, April 2008
² [Healthcare Water Efficiency and Program Management Toolkit](#), Better Buildings, accessed September 2024
³ [Efficient water delivery is vital for healthcare climate resilience](#), Hospital Times, December 2021



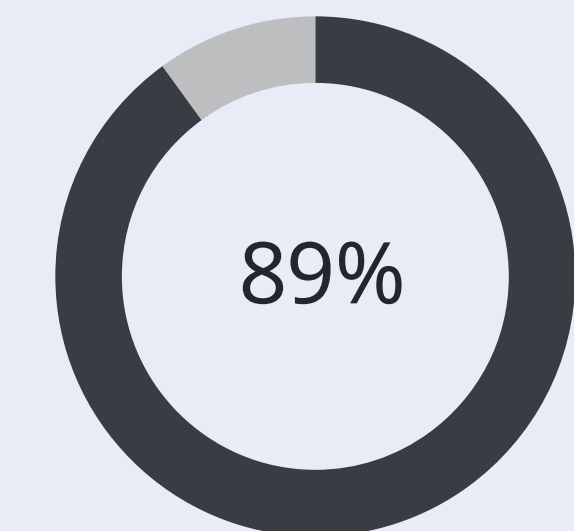
proportion of global water supply accounted for by the pharmaceutical sector of global water supply



say medicines should be considered as critical national security product and should have priority in allocation of water supply



say pharmaceutical manufacturers should have tight controls of wastewater discharge



think hospitals and care facilities should closely manage their usage of water

Water security solutions



Recommendations for the pharmaceutical sector from Courtney Soulsby, Sector Development Director, Global Healthcare, BSI.

Courtney has worked with the pharmaceutical and med tech industries and their supply chains for over ten years. She has a deep understanding of the issues with regulation, environment, security, compliance, quality, and other risk exposures when manufacturing and transporting medicines.

Adopt a circular mindset

This approach to wastewater can help the pharmaceutical sector to reduce water use, reduce carbon and generate commercial return on investment. Circular use of manufacturing wastewater discharge through the manufacturing site's cooling systems to cool boilers will ultimately save water and energy costs, and reduce GHG emissions.

Engagement

Proactively engage with local authorities and water infrastructure providers in high risk water basins to ensure the supply of high quality water is secured and maintained.

Plan ahead

To proactively identify and mitigate risk, the pharmaceutical sector can carry out water risk assessments and future scenario planning for adaptation strategies, to identify which sites may be high risk for water supply quality and availability.

Develop wastewater management processes

Develop systematic processes, through mass balance and/or chemical analysis and sampling, to measure and control the concentrations of wastewater and solid waste discharge from manufacturing of medicines in order to protect surrounding environment from pollution.

Collaborate

Collaborate across industry to standardize the way industry is carrying out water risk assessments and mitigation measures on the shared high risk local water basins. This can aid collaborative engagement of local government, water infrastructure authorities.

Minimizing the risk of aquatic toxicity in our waterways

Global attention around the presence and impact of pharmaceuticals in the environment is growing, as a result of manufacturing wastewater discharge. This can lead to public health concerns like Antimicrobial Resistance (AMR) where resistant pathogens are leaked into public waterways. Pharmaceuticals are designed to have a biological effect on humans, so when left untreated, have potential for effects on non-target animals and organisms in freshwater systems at low doses.

In 2022 BSI and the AMR Industry Alliance launched a new global standard for AMR, designed to promote and attest to the responsible manufacturing of antibiotics in the global supply chain, helping to minimize the risk of aquatic toxicity in the environment and the spread of AMR. Then in 2023

BSI launched a certification program for manufacturers to be independently assessed to validate compliance with the standard. This standard and the certification program are being incorporated into healthcare systems' procurement requirements for antibiotic environment impact, including NHS England. Last November Sandoz and Teva became the first organisations to qualify – and other big pharmaceutical names have since followed.

Ultimately, pharmaceuticals in the environment from manufacturing can lead to water quality concerns unless the wastewater is controlled and treated appropriately, and can also lead to environmental degradation and can be linked to public health challenges like AMR. Taking action to respond to this global challenge is key.





Find out more about sustainability in the **pharmaceutical and healthcare sectors**

Explore the **Thirst for Change** campaign

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