

One-third of hospitals in developing world lack running water

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A study of 430 hospitals in the developing world found that more than one-third lacked running water, a deficiency that can lead to unsanitary conditions for patients in general and dangerous conditions for those who need surgery.

The research, led by the Johns Hopkins Bloomberg School of Public Health and published online in the *Journal of Surgical Research*, points to larger deficiencies in the health care systems in many of the world's low- and middle-income countries and highlights the need to focus on basic infrastructure in order to prevent the spread of disease and improve health outcomes there.

"Running [water](#) is something we so take for granted and it doesn't exist in a third of hospitals in these countries," says one of the study's leaders, Adam L. Kushner, MD, MPH, an adjunct professor at the Bloomberg School. "Instead of water just being there, some hospitals truck in water or collect it in rain barrels, with no guarantee of its cleanliness. Without clean water, there is no way to clean surgeons' hands or instruments, wash gowns and sheets or clean wounds to prevent or reduce infections."

For their study, the researchers analyzed published research related to surgical capacity in low- and middle-income countries. They identified 19 surgical capacity studies undertaken between 2009 and 2015 that included information on water availability covering 430 hospitals in 19 nations. They found that 147 of the 430 hospitals lacked continuous running water (34 percent). These ranged from less than 20 percent with

running water in Liberia to more than 90 percent in Bangladesh and Ghana.

Many people in the world - an estimated 700 million - live without access to water; half of those without water live in sub-Saharan Africa. Lack of access to water and sanitation has a significant negative impact on health care provision, including surgical care, the researchers note.

Hospitals without running water often truck in water - at great expense - or use rainwater. While helpful in the rainy season, rain barrels often run dry during the dry season. This water is not only needed for surgery, it is needed to keep patients and rooms clean during other parts of their [hospital](#) stays. The study didn't address access to drinking water.

Without water, Kushner says, hospitals cannot conduct surgery, despite the large unmet surgical needs in these poor nations.

"Hopefully, people aren't operating in those conditions, but what do you do if a woman shows up in obstructed labor and needs an emergency C-section and it's the [dry season](#) and the rain barrel is empty," Kushner says. "You can't operate with dirty instruments, but if you don't she's going to die. This is the sort of dilemma that surgeons in these hospitals face."

Kushner says running water is but one element of ensuring that communities have access to good health care.

"In order to provide basic [health care](#), you need a functioning system and running water is part of that," he says. "It shows the deficiencies in the health systems in general in those countries."

Kushner says there needs to be a greater push for improving water access for people globally. He says that nations whose hospitals often lack

access to [running water](#) - such as Burundi with just under 32 percent - might be able to learn from strategies used by their neighbors, such as Rwanda with more than 83 percent, to build water infrastructure.

More information: Water Availability at Hospitals Low- and Middle-Income Countries: Implications for Improving Access to Safe Surgical Care, *Journal of Surgical Research*, DOI:

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