



# Safe Water Supply Reflects Justice and Health Issues

DAVID LEWELLEN

**E**very culture's stories begin with water and center around water. The river Jordan, the Nile, the Ganges, the Rhine, the mighty Mississippi, the Tiber — water has cultural meaning. But it is also indispensable to life. And it has no substitute.

Middle-class consumers rarely think much about clean, safe water, even though it is vital to their health and their communities. But for citizens of poorer nations, or for residents of cities such as Flint, Mich., worry about water becomes yet another stressor in their lives.

And though water overflows the Earth, the fresh, clean portion of it is minuscule. Allotting it fairly in places where water is scarce but people are plentiful is a fluid problem. Some thinkers see water as a basic human right — but can we put a price on a human right? Or, if we can't avoid it, what is a fair price, and how can water be distributed justly?

The issues are complicated and overlaid — where water comes from, how it is treated, how it is distributed, how it is paid for. “We see it as a throwaway resource, but that's not at all the case,” said Tamara Mix, PhD, a professor of sociology at Oklahoma State University. “Water access is to some degree a right.”

The question of water as a right “is a major source of ethical debate in global water policy and ethics at present,” said Christiana Zenner, PhD, associate professor of theology, science and ethics at Fordham University and author of *Just Water: Theology, Ethics and Fresh Water Crises*. “Many water and governance experts seem to concur that as a justice consideration, people need basic levels of water, in some

cases for free — that is, delivery and access paid for by other entities.” Others argue that the market can solve the problem, but “this is a contentious claim,” according to Zenner.

“If you pay disproportionately to what you can afford, there is inequity in that,” Mix said. Pricing water according to its actual cost and its actual value “is going to require big political, cultural and social shifts.” What if the price of water hypothetically doubled tomorrow in order to reflect its true value? There is a long pause before Mix answers: “Culturally rooted expectations are going to take some time to change. That would

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more likely result in a backlash.” And such a move would also fall hardest on low-income Americans.

Tracy Boyer, PhD, director of the Center for Water Policy at the University of Wisconsin-Milwaukee, explained water is a natural monopoly, because typically the municipality owns the production and distribution system, and it benefits

from economies of scale. But many cities' pipe systems are generations old, and "there's not a lot of will to raise the price." And rural areas, with just as much need for better infrastructure, do not have those same economies of scale.

In states such as California and Arizona, Boyer said, "The price of water becomes apparent when it's scarce." Regions that go through drought cycles have a harder time developing a consistent water policy.

Boyer said that block rate pricing, designed to discourage homeowners from watering their lawns, worked well in Oklahoma City during a drought. The same low rate applied to the first 5,000 gallons per month, enough for basic household needs, but a 10 percent surcharge kicked in for higher amounts. That increase did produce a 14 percent decline in water use – but it left the utility with less money. "How do you charge a price that gets us enough income to provide water?" she asked rhetorically.

Asking consumers politely to reduce their water use does not work in the long term, Boyer said. It can have an impact during a crisis, but

economists and water managers have learned that when the issue fades from headlines, residential use reverts to old patterns.

"We have a shared investment in protecting clean air and water," said Aparna Bole, MD, a pediatrician who is the director of community engagement at University Hospitals Rainbow Babies and Children's Hospital in Cleveland. "We all pay into a regulatory agency. If there is pollution, the cost of that ought to be assigned to the origin of the pollution, but that person usually isn't paying. There's a social cost to maintain (clean water), and we pay it directly or indirectly."

But how do cities and nations make those decisions about access and fairness and sustaining a safe water supply? One key is "the ability to have conversations rather than top-down policies and procedures," Mix said. If a community can create a water plan in advance, before a crisis of drought or disaster, "that's potentially a way to ameliorate some of the challenges."

"The question of whose voices are heard at the decision-making tables is of course a huge moral issue," Zenner said, citing the phrase "Nothing

## HEALTH CARE SYSTEMS TAKE STEPS TO SAFEGUARD WATER SUPPLY

**H**ealth care facilities need a safe, reliable supply of water, in good times and in bad. Sean Lawler, a project manager with Affiliated Engineers in Seattle, said that health care facilities are required by code to build in redundancies, so they will have a second connection to the municipal water system. In case the water supply is cut off, even with the redundant pipe, facilities store at least three days' supply of water onsite — a reasonable time for municipal pipelines to be restored. If not, most facilities' next plan is to truck in water.

Water systems have their own contingency plans and usually a hospital will be at the top of the list for service restoration, said Lawler, whose firm has

designed and built many health care facilities. Similarly, if pipes cannot be restored quickly, hospitals and other critical institutions should be first in line to get water truck service.

But hospital managers need to talk to their counterparts at all utility services and know what their contingency plans are. Preparations may be well thought out and transparent and available to anyone – or they may not. Neil Grigg, PhD, a professor of civil and environmental engineering at Colorado State University, suggested making an appointment with the water utility manager. Even if hospital administrators aren't in a position to judge the details of a plan, they can assess whether the utility is proactive and

whether the information is forthcoming, and press for details if necessary. The same advice also applies to providers of electricity, heat, telecommunications and other vital services.

The threats to water supply will vary in different regions. In Grigg's home state of Colorado, for instance, disaster preparation centers around wildfires and mudslides. Earthquakes are a threat on the West Coast; in the East, hurricanes could contaminate water supplies in reservoirs and rivers. "You can't do much about the likelihood that an event is going to happen," Grigg said. "But you can do a lot about your response. Do not assume that everything will be OK because someone else took care of it."



about us without us.” Pope Francis has spoken often about the need to listen honestly to indigenous communities about projects affecting them, she said. And at home, “examples of water infrastructure decisions made from on high in Flint, Michigan — and the devastating, racialized public health effects — demonstrate the point in a major American city.”

Zenner’s book points out that water use is 70 percent agricultural, 22 percent industrial and 8 percent residential. There is no consistent method, she said, for measuring usage in the commercial sector that includes businesses, schools, and health care facilities. But the percentages mean that agricultural and industrial users are “very loud voices” at the negotiating table, Mix said. Promoting responsible use, more efficient use and recycling of water “requires a certain kind of conversation among policymakers.”

And it is hard to have a national conversation, because water problems differ greatly from one area of the country to another. In some states that rely on surface water, “every drop of rain that comes down is state-owned,” Mix said. Areas that rely on groundwater have to think about conservation, now that they know their aquifers -- underground layers of rock saturated with water -- are finite; an expression that is beginning to take hold is “mining water.” “They will eventually run out,” Mix said. “The mindset in the past was that they wouldn’t.”

Different states take different attitudes, and even federal government policy can change, depending on the president. Current moves to roll back some of the protections of the Clean Water Act to allow further development “present challenges in terms of what we see as the value of water, if we’re not willing to put regulations in place,” Mix said.

“Demand-side management is a lot cheaper than moving water” from one region to another, Boyer said. “There’s a huge ecological cost, and California has suffered from that. The supply end is much more expensive.” States such as Nebraska and Texas, she said, are beginning to regulate the rights to water in the aquifers underneath private property, since individual landowners have little incentive to conserve it for the common good.

Water quality is another problem. Boyer cites long-running lawsuits between Oklahoma and

Arkansas over agricultural runoff, and there are many other examples throughout the West. Even along the Great Lakes, one of the world’s most abundant sources of fresh water, an algae bloom in Lake Erie jeopardized the city of Toledo’s water supply in 2014. But city water, she pointed out, is tested regularly. A rural homeowner with a well

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probably doesn’t know when the supply has gone bad.

Rural areas always have had a more tenuous connection to clean, safe, affordable water, Mix said, but the crisis of lead contamination in Flint for the last few years has brought more attention to the problems of urban water. In either case, the problems tend to be worse among the poor. One result of recent news stories, Boyer said, is that African-American consumers are less likely to trust local government when it says that the water supply is safe.

Although Flint has become a cautionary tale nationwide, “we have much less information than we need,” Bole said. She noted that in Cleveland, lead is a widespread problem from contaminated soil and old, flaking paint, but to check the water supply would require systematic testing of what comes out of home taps. “We probably underappreciate the scale of the problem.” But, she said, now that Flint has inspired people to ask about their own water supply, “that opens the door for me to talk about the other sources of lead.”

And the right to water access goes beyond what comes out of the faucet, Bole said. Near her home, untold numbers of low-income families rely on Lake Erie beaches for free recreation, and “if there are no-swim days, or poor water quality days — which there are, a lot — that disproportionately affects the most vulnerable families.”

But solutions, whether large or small, are plentiful, Bole said — plant-covered green roofs that catch rainwater and improve the atmosphere; gray-water systems with side-by-side pipes for potable water and for outdoor uses; more efficient agricultural practices. Health care organiza-

tions can move away from bottled water, install efficient fixtures and permeable pavements “if we want to live up to our mission.”

Hospitals have “massive potential for pioneering re-use strategies and closed-loop systems for things like sanitation, laundry, etc.,” Zenner said. Because they tend to have their own internal plumbing systems, they could create different streams and dedicated piping systems for water reuse. “That would be fantastic, both in terms of water stewardship and in terms of proof of concept,” she said. “It’s certainly not normalized at present, but I anticipate this is the way that building design will go ... I think health care-providing institutions have a real opportunity for leadership here.”

Another way hospitals can be a force for progress is to start collecting data on their water use, and partner with university water researchers and engineers to identify best practices. And from the social, moral point of view, health care organiza-

tions “are well poised to speak to the interrelationship between healthy land/water and healthy people.” Finally, Zenner said, “the disposal of medicines and the question of hormone-mimicking or altering compounds in water is a big one, and I think hospitals have a role to play in navigating this question.”

On the most basic level, concerned citizens, and concerned health care executives, need to be aware of water issues in their own communities. People are able to advocate for clean, safe water when they know the issues in a region and the reforms needed. “My students never know where their water comes from,” said Mix, the Oklahoma State professor. “But learn about your local infrastructure. Have conversations about access.”

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## QUESTIONS FOR DISCUSSION

David Lewellen raises important questions about use of water in terms of justice and rights to basic resources. Given the problem of drought in parts of the U.S. and recent instances of contaminated water in cities like Flint, Mich., he explores the sustainability of clean water as a natural resource and how access to water relates to a Christian understanding of the common good.

1. Health care facilities use a lot of water for the multiple functions they carry out, the many people who need hydration there and high standards of sanitation that need to be maintained. Can you think of ways your ministry can do a better job conserving its water resources? Planning for water recycling? And building a long-term water strategy within your community?

2. As anchor institutions, how can hospitals participate in partnerships to more equitably distribute healthy water for drinking, cleanliness and recreation? Does your ministry devote some of its advocacy efforts toward fair access to resources for people who are poor and often marginalized? If so, talk about those efforts; if not, what could it be doing? How does your ministry and community ensure that the voices of the poor and marginalized are part of the conversations about safe, accessible and affordable water so that “nothing about us without us” is followed?

3. Water is actually and symbolically associated with life itself. How does your ministry use signs, symbols, fountains and pools to reflect the spirit of healing to those who are ill, to the families and friends who love them and to the health professionals who care for them?

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