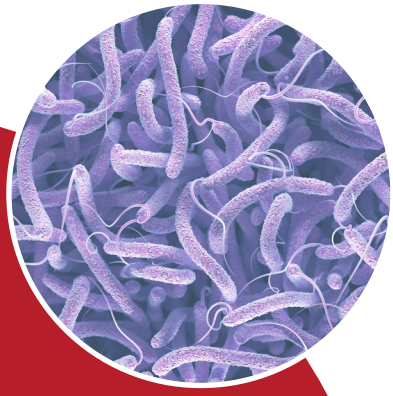
Why Safe Drinking Water is No Longer a Given—Even in the U.S.

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Many people take for granted access to clean, safe drinking water. However, aging infrastructure and a changing climate are making clean water harder to guarantee.



What's the Problem?

- Waterborne illnesses kill over 3.5 million people globally each year.
- Many of these illnesses are caused by microbes in contaminated water, known as waterborne pathogens.
- These pathogens can cause diarrhea, vomiting, fever, skin infections and even life-threatening disease.
- In the U.S., aging water systems and environmental change are putting more people at risk.



How Does Weather Make It Worse?

- Extreme weather events can:
  - Damage water pipes and treatment plants.
  - Mix sewage or bacteria into drinking water.
  - Overwhelm systems that are already outdated.
  - Help bacteria spread and grow by warming ocean temperatures.



Real Examples in the U.S.

- Hurricane Ian (2022) in Florida led to a spike in infections from *Vibrio vulnificus,* a dangerous "flesh-eating" bacterium found in warm coastal waters.
- Flooding in the Midwest has caused water contamination and boil-water advisories in several towns.
- Wildfires in California have damaged water lines and introduced harmful microbial agents and chemicals into the water supply.

How Can We Protect Safe Drinking Water?

As extreme weather intensifies and infrastructure ages, protecting our water resources and supply is more urgent than ever. Luckily, there are smart, science-backed strategies we can use to stay ahead of the risks.



1. Strengthen Water Systems Before Disaster Strikes

- Many U.S. water systems are outdated and not built to handle today's climate challenges.
- Upgrading infrastructure to be more weather-resilient is key to preventing future crises.



2. Use Microbes to Monitor and Protect Water

- Microbes aren't just threats—they're also powerful tools. Scientists can use microbial data to:
  - Detect contamination early using a combination of genomic and earth observation datasets.
  - Predict outbreaks and exposure potentials for humans.
  - Improve water system design using digital sensors and meters, leak detection technologies and advanced data analytics.



3. Collaborate Across Communities and Sectors

- Solving water issues takes everyone: Scientists, city planners, local governments, public health experts, engineers and local residents.
- Examples of successful collaborations:
  - Source Water Collaborative: 30+ national organizations working to protect drinking water at its source by coordinating efforts across government, utilities and nonprofits.
  - USDA's Natural Resources Conservation Service (NRCS): Partners with farmers to reduce runoff and protect water quality through conservation practices.
  - One Water for America Initiative: Brings utilities, farmers and community leaders together to develop regional water solutions.

Learn More and Take Action

Want to know more? Discover how, with the right tools, teamwork and investment, we can build a resilient future where safe drinking water is protected for all.

Read the full report: Water, Waterborne Pathogens and Public Health: Environmental Drivers. Published by the American Society for Microbiology.