

# NGOs help Aqua Research deploy its technology in developing countries

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A briefcase-sized water purification and chlorine production device created in New Mexico is helping hundreds of hospitals in developing countries to lower health clinic-related infection rates and reduce deaths from infectious disease.

Albuquerque-based Aqua Research LLC, which developed the technology, is now working with major non-government organizations to massively deploy the devices in Africa and other places, following on-site NGO-backed projects that demonstrated system efficiency and significant potential for health improvement in recent years, said Aqua Research founder and Chief Technology Officer Rodney Herrington.

To prepare for upcoming deployment efforts, the company is now raising \$3 million in private equity to beef up local production potential and establish global distribution networks, beginning with a fundraising push that launched Feb. 14 on Netcapital Inc.'s crowdfunding platform.

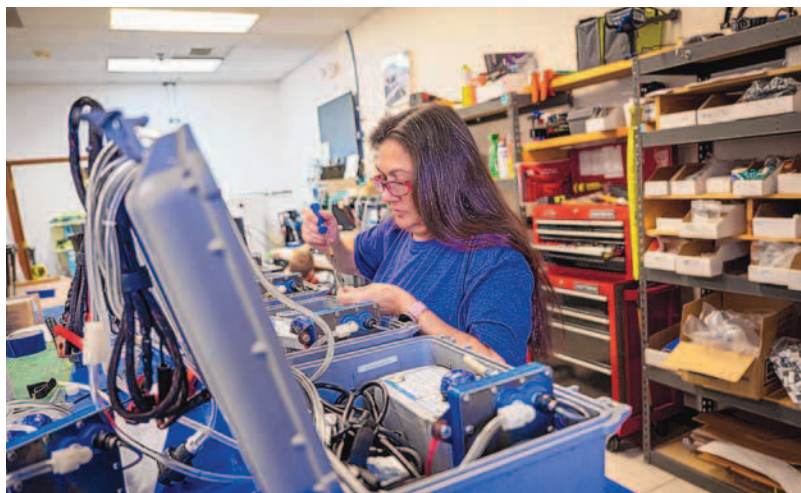
"We're anticipating huge growth in demand, so we're getting distributors in place with local customer support in countries where deployment campaigns will take place," Herrington told the Journal. "It's a big effort to get that established, so we're looking for more resources to finance it."

The company says its technology — which enables users to make their own disinfectant onsite within minutes to sanitize surfaces and treat drinking water — is cheaper, easier to use, and more robust than alternatives. That's because the purification device uses only a simple mix of water and salt shot with an electric current.

The electric mix helps separate salt into its component parts, sodium and chloride. The resulting oxidant solution is then poured into water, where the chloride destroys common pathogens.

And apart from purifying water, the chloride can be used as a surface disinfectant, providing facility managers with their own system for continuous chlorine production.

"It's a portable system that can be



JON AUSTRIA/JOURNAL

**Gina Sixkiller, a technician, works on a device that can purify water and produce chlorine at Aqua Research in Albuquerque on Feb. 17.**

used anywhere," Herrington said. "You just need water, salt and a little electricity."

The company has worked with global NGOs to deploy the system in developing countries. In Haiti, for example, the Caris Foundation invested \$350,000 to deploy the technology in five Haitian cities, benefiting nearly 170 hospitals.

"It's become an ongoing chlorine-manufacturing operation there," Herrington said. "They pour the chlorine into 1-gallon bottles and deploy them to local health-care facilities."

The company has worked with another half dozen NGOs, such as Catholic Relief Services, to deploy the system in eight African countries, Uganda, Ghana, Kenya, Niger, Mali, Liberia, Zambia and Madagascar.

PATH — a Gates Foundation-backed NGO — financed a pilot project to test the system at Uganda health clinics where supply-chain issues, procurement problems and limited budgets cause chronic disinfectant shortages, often forcing facilities to forgo adequate infection prevention and control protocols for months at a time. As a result, health-care-associated infections in Uganda affect up to 28% of patients, or nearly one in three people, according to a 2022 PATH report.

All pilot project hospitals said the system was easy to use and integrate into clinic protocols, allowing them to improve prevention and control

because they never ran out of disinfectant, according to the report. And PATH estimates the system reduced chlorine costs by 29% per liter compared with commercial purchases.

Aqua Research leases or sells its systems in different sizes, ranging from \$3,500 for a briefcase-sized device to \$20,000 for commercial-scale and \$50,000 for community-scale systems.

It also markets hand-held water purification devices for individuals and families for \$60, with thousands of them sold to date in more than 20 countries.

The company has worked with the University of New Mexico to involve engineering and business students in product development and marketing through senior capstone projects, benefiting about 20 students in recent years, said UNM computer engineering professor Ramiro Jordan. Students in one project developed GPS and WiFi capability to enable remote monitoring of systems.

"This product can have tremendous social impact," Jordan told the Journal. "There's a worldwide need for it."

UNM computer engineering graduate Derek Davidson, who helped build the remote monitoring capability, now works for Aqua Research.

"I joined the company because of the humanitarian impact these devices can have," Davidson told the Journal. "It's potentially a game changer for developing countries."