

Water-purification plant the size of a fast-food ketchup packet saves lives

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An ambitious partnership among more than 100 organizations and governments led by Procter & Gamble's (P&G's) nonprofit program, Children's Safe Drinking Water (CSDW), has helped provide more than 6 billion quarts of clean drinking water to families in developing countries, saving an estimated 32,000 lives. And they're just getting started.

CSDW Manager Allison Tummon Kamphuis, R.N., M.B.A., today described the organization's latest accomplishments and future goals at the 246th National Meeting & Exposition of the American Chemical Society (ACS), the world's largest scientific society. The meeting, which features almost 7,000 presentations on new discoveries in chemistry and other topics, continues here through Thursday.

Tummon Kamphuis explained that diarrhea from contaminated drinking water is second only to pneumonia as a cause of childhood deaths worldwide. More than 2,000 children die every day as a result of diarrheal illnesses. To reduce that toll, P&G in 2012 pledged to deliver 2 billion quarts of clean water every year to developing countries by 2020, which would save one life every hour. An ambitious goal for a young program started in 2004, but CSDW is well on its way to achieving it by wide distribution of water-purification sachets the size of a fast-food ketchup packet.

"The real key to us achieving numbers like that and providing that much water and having the estimated health impact that we report is really

partnership," said Tummon Kamphuis.

CSDW reached a milestone in May, when the packets, called the P&G Purifier of Water, produced their 6 billionth quart of sparkling clean water.

The foundation of CSDW's work dates back to the mid-1990s, when P&G partnered with the U.S. Centers for Disease Control and Prevention to find a simple, inexpensive water-purification technology that could be used anywhere in the world. By the early 2000s, they had perfected the water-purification packets, which transform cloudy, brown water into crystal-clear, drinkable water that meets all the requirements for drinking water.

"We call it a mini-water-treatment plant in a packet," Tummon Kamphuis said. The powder essentially performs the job of a municipal treatment facility but on a much smaller—and portable—scale.

The chemistry is impressive, she said, yet the application is impressively simple. It involves pouring the contents of one packet, which weighs less than an ounce, into a bucket of 10 quarts of water and stirring. Dirt, parasites and other material drop to the bottom, as this [video](#) demonstrates, and disease-causing microbes die.

To meet the program goal of saving one life every hour by 2020, P&G has established a three-pronged strategy, with one step already complete. In November 2012, they finished building a new facility in Singapore to ramp up production of the water-purifier packets. Additionally, CSDW, which has worked in 71 countries, plans to expand distribution even further. They also plan to invest more in raising public awareness of the need for clean [drinking water](#).

An ACS program, [Coins for Cleaner Water](#), supports CSDW's efforts.

The P&G Children's Safe Drinking Water Program, a 501c3 program, will receive the Howard Fawcett Award from the ACS Division of Chemical Health and Safety.

More information: Abstract:

Scaling up efforts to provide more than 100 million water purification packets every year

Household water treatment technologies have been shown to dramatically improve the microbiological safety of drinking water and reduce diarrheal illness. A not-for-profit effort, the Children's Safe Drinking Water (CSDW) Program, is an effort to provide a coagulation/disinfection technology developed by P&G to people in the developing world. The small sachets of powdered product contain the same chemical ingredients used in municipal water systems including ferric sulfate as a coagulant and calcium hypochlorite as a disinfectant. The water purification packets are approved as a microbiological purifier of water by the US EPA and meet the WHO guidelines for a protective household water treatment technology. The CSDW Program also seeks to build awareness of the global water crisis and promote a variety of solutions to help address the crisis. The P&G technology, developed in collaboration with the CDC, was recently renamed to P&G Purifier of Water in order to more clearly build company reputation and thereby help ensure sustained funding. Established in 2004, the effort has grown exponentially in the last 9 years providing a cumulative total of more than 600 million water purification packets or 6 billion liters of clean drinking water. The growth of the program has been achieved through response to major disasters and through integration with global health initiatives including helping people living with HIV/AIDS and helping malnourished children. At the 2010 Clinton Global Initiative, P&G announced its intent to provide 2 billion liters of clean drinking water every year by 2020—enough clean water to save one life every

hour in the developing world through the CSDW Program. The progress to date to realize this "save one life every hour" target will be reviewed including new efforts to raise awareness of the global water crisis.

Provided by American Chemical Society

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