Overview

The challenge

Clean water is something many people take for granted. When they’re thirsty they simply turn on a tap or open a bottle of water without even thinking about it. However, **2.2 billion people around the world do not have access to safe drinking water**. Unfortunately, many rely on water contaminated with bacteria like *E. Coli*.

This can cause illness and death especially in young children, with over 700 children under five dying every day from diarrhoea linked to inadequate water, sanitation and hygiene.

UNICEF works with governments and communities to test household and community water sources for faecal contamination, measured by testing for *E. Coli* bacteria in water samples*.

However, current testing approaches suitable for field use are time consuming, taking 18-24 hours to return a result. The equipment is bulky to carry to remote locations, highly complex to use and requires trained professionals. In addition, in remote settings where UNICEF works there is limited access to labs, electricity and cold chain transport.

Due to the long processing time, communities often do not get to see the results which limits the ability to understand and communicate risks, launch community-led water quality monitoring programmes, and integrate water testing into large-scale national household surveys.

The response

UNICEF is calling on industry to develop an easy-to-use, rapid detection method or portable kit that can accurately identify faecal contamination in drinking water.

This would empower individuals and local communities to monitor and manage their water quality, ensuring their own health and safety. Data collected on unsafe water would also enable governments to make evidence-based policies and take timely, preventative actions at a national scale.

In 2016, UNICEF launched a **Target Product Profile (TPP)** which outlines the specifications required for a new testing system. TPPs communicate requirements for products that are currently not available but fulfil a need in the unique context UNICEF and partners operate.

Already, early prototypes have cut the testing time from 24 hours to 10 hours. However, the ideal solution is under six hours, which would allow UNICEF to run same-day behaviour change programmes and take preventative action immediately.

The impact

A rapid test can support governments and communities to massively scale up testing of water sources. This will provide more information on water quality so it can be treated, identify areas for improvement, and monitor progress towards SDG 6.

This will mean more children have access to safe drinking water, ensuring better health outcomes and avoiding thousands of preventable deaths in young children each year.

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Key figures

**The challenge**

**2.2 billion people** around the world lack safe drinking water.

**700 children** under the age of five die every day from diarrhoea linked to inadequate water, sanitation and hygiene.

Many more children miss school because the water they drink makes them sick.

**The response**

**24 hours**

Current water tests can take 24 hours to provide a result and must be operated by trained specialists.

**10 hours**

Working with industry, UNICEF has identified potential products that can return a result within 10 hours, but faster tests are needed.

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*in line with the World Health Organization recommendation for testing water*
Lucy is a bright student. She usually finishes in the top three of her class and wants to be a doctor when she’s older. But attending school has not always been easy: “I used to drink water from the shallow wells. I had diarrhoea so many times. I would stay at home for weeks until I got better.”

Through UNICEF programming Lucy has been able to access clean drinking water. “It feels so good not to be ill,” she says. “I’m doing much better in school.”

By working with industry to find ways to rapidly test drinking water for contamination UNICEF can ensure more children like Lucy can access clean water.