

Translating innovative ideas into breakthrough medical devices and health technologies

All too often in low- and middle-income countries, medical devices and health technologies are inaccessible because they are too expensive or impractical for use in under-resourced health settings. We respond to these challenges and health system gaps by collaborating with partners and innovators to design, test, refine, introduce, and scale devices and tools with the potential to achieve unprecedented wins for health.

Together with our public- and private-sector partners, PATH's Medical Devices and Health Technologies Program has investigated hundreds of innovations and advanced the most promising and appropriate technologies into affordable commercial products for use in country health programs and global health campaigns for the women and children who face the greatest health inequities.

Innovations by the numbers

7 billion SoloShot™ syringes



PATH designed the first commercially available autodisable syringes for immunizations: a fixed needle that locks after a single injection to prevent reuse. It catalyzed a global policy shift in safe injection, and since 1990 more than 7 billion have been produced by BD, lowering the risk of bloodborne disease transmission.

20 million estimated doses of chlorhexidine for umbilical cord care



PATH leads a global coalition to advance 7.1% chlorhexidine digluconate for use as an essential newborn care intervention to help prevent umbilical cord infection and neonatal sepsis. It now has been introduced or scaled in more than 20 countries.

7 billion HEATmarker® vaccine vial monitors



To help health workers know in a glance if a temperature-sensitive vaccine can be used, PATH advanced a small sticker on a vaccine vial that changes color when exposed to heat over time. All vaccines purchased through the United Nations Children's Fund use vaccine vial monitors (VVMs). Since 1996, more than 7 billion VVMs have helped ensure that undamaged vaccine is used to immunize children and improved vaccine distribution.

150,000 Caya® contoured diaphragms



PATH designed and developed the first new diaphragm design in 50 years to address women's unmet need for a nonhormonal family planning method that they can control. Introduced in 2013 by KESSEL medintim GmbH, Caya is now available in more than 40 countries.

155 million Unject™ injection systems



PATH developed a compact prefilled autodisable injection system that combines a needle, a syringe, and a single dose of vaccine (such as hepatitis B birth dose) or pharmaceutical (such as the injectable contraceptive DMPA-SC) to simplify the act of giving an injection.

80,000 Nifty Feeding Cups



PATH and partners designed a cup for infants who are unable to breastfeed. Mothers can express breast milk into the cup and use it to effectively feed their infants. In 2016, PATH and Laerdal Global Health announced a collaborative effort to bring the Nifty Feeding Cup to market, and now it has been distributed to more than 40 countries.

Snapshot of recent product introductions addressing critical global health needs

Helping global polio eradication efforts



More than 4 million PATH-developed intradermal adapters—manufactured by West Pharmaceutical Services, Inc. and supplied with Helm autodisable syringes—have been procured by the World Health

Organization (WHO), and 1.3 million were used recently in Nigeria for fractional dose inactivated poliovirus vaccine delivery. Also, WHO procured 5 million needle-free syringes with 5,000 reusable PharmaJet Tropis® jet injectors. Use of these devices is helping countries stretch limited doses of polio vaccine to reach more children.

Bringing safe water to households and disaster relief efforts

C1 Common Interface:

PATH designed an open-source common-connection point and platform solution to promote water filter interchangeability, standardization, and market efficiency. Commercial products from Ningbo Clean (2012), PureEasy (2012), Kohler (2015), and Imerys (2016) are in use in households around the world—including disaster relief settings. For instance, more than 3,000 Imerys ImerPure™ filters were distributed to families in Kerala, India, during its worst flood in a century, and the Kohler® Clarity™ water filtration system was used in hurricane relief efforts in Haiti.



Imerys

The MSR SE200™ Community

Chlorine Maker: PATH and MSR Global Health codeveloped an innovative, on-site chlorine generator for treating drinking water and as a disinfectant for infection prevention in communities. Small, portable, and easy to use, it requires only salt, water, and electricity from a car battery or mains power. Commercialized in 2015, the product has been used in more than 40 countries.



Producing lifesaving solutions for obstetric emergencies in primary care facilities

To help treat women with severe post-partum hemorrhage, a neoprene compression garment can be used to control bleeding and stabilize vital signs.



To increase availability of this lifesaving innovation in low-resource settings, PATH focused on lowering production costs while maintaining quality by building the capacity of a new manufacturer to produce high-quality garments. Each LifeWrap non-pneumatic antishock garment can be used more than 100 times. More than 15,000 LifeWraps have been sold by Blue Fuzion Group in 11 countries since 2014.

Protecting vaccine potency for children living in low-resource and remote communities

PATH developed a vaccine carrier freeze-prevention barrier innovation that protects vaccine potency and reduces health worker burden. We made the design open source and transferred the technology to multiple manufacturing partners to help bring the first freeze-preventive vaccine carriers approved by WHO to market in 2018.



For more information about the Medical Devices and Health Technologies Program's portfolio of technologies, please contact innovation@path.org.

All photos: PATH, where not otherwise indicated



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PATH is a global organization that works to accelerate health equity by bringing together public institutions, businesses, social enterprises, and investors to solve the world's most pressing health challenges. With expertise in science, health, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales solutions—including vaccines, drugs, devices, diagnostics, and innovative approaches to strengthening health systems worldwide.

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