

# Innovations by the Numbers

February 2023



## 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 care settings. PATH responds to these challenges and health system gaps by collaborating with partners and stakeholders 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, we have investigated hundreds of innovations and advanced the most promising and appropriate technologies into affordable 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.

**30,000+**  
**Ellavi**  
**uterine**  
**balloon**  
**tamponades**



PATH in collaboration with Sinapi Biomedical (Pty) Ltd are advancing the use of a low-cost, preassembled medical device to manage uncontrolled bleeding and help save the lives of women. In 2019, the Ellavi received a CE Mark, and is now registered in over 20 countries, where more than 30,000 devices have been sold.

**10+ 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 10 billion VVMs have helped ensure that undamaged vaccine is used to immunize children and improved vaccine distribution.

**500,000+**  
**Caya® contoured**  
**diaphragms**



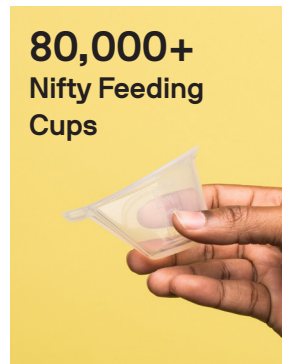
PATH designed and developed the first new diaphragm design in 50 years to address women's unmet need for a nonhormonal family planning method that they can control. Introduced in 2013 by KESSEL medintim GmbH, Caya is now available in more than 45 countries, with more than 500,000 units sold.

**194+ million**  
**Uniject™ injection**  
**systems**



PATH developed a compact prefilled autodisable injection system that combines a needle, a syringe, and a single dose of vaccine or pharmaceutical. Millions of babies have received their hepatitis B birth dose, and more than 10 million units of injectable contraceptive DMPA-SC have been given via Uniject injection system.

**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 immunization campaigns

**Polio eradication:** For years, PATH has been generating data to support fractional dose delivery regimens to help support polio eradication efforts. So far, 10 countries have adopted fractional dose inactivated poliovirus vaccine regimens—



stretching vaccine supplies to protect more children. PATH worked with WHO and device developers to advance needle-free jet injectors to simplify delivery of fractional doses, potentially reducing costs and expanding coverage. Now 7 million children in Pakistan, Nigeria, and Somalia have been vaccinated without needles using the PharmaJet Tropis jet injector for intradermal delivery of inactivated polio vaccine.

### Protecting infants from Rotavirus:

With the aim of developing a more compact container that could enable more children to be reached with this lifesaving vaccine, researchers at PATH developed a multi-monodose Blow-Fill-Seal (BFS) container design compatible with oral rotavirus vaccine. In 2020, the first immunization program against rotavirus in Myanmar used GSK's Rotarix vaccine in a multimonomodose squeezable tube via BFS technology.



## Protecting vaccine potency

PATH designed a carrier that protects vaccine potency and reduces health worker burden by preventing accidental freezing of vaccines. 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. As of 2022, there are nine PQS prequalified freeze-preventive products available globally from five different manufacturers.



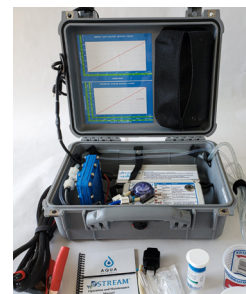
## Bringing safe water to households and communities

**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.



### STREAM™ Chlorine Generator:

PATH is supporting the national scale up of the Aqua Research STREAM™ Chlorine Generator in public health facilities in Ghana and Uganda. Our efforts and evidence have catalyzed STREAM introduction and pilots across an additional eight countries in Africa.



## Saving the lives of women with severe post-partum hemorrhage (PPH)

The LifeWrap non-pneumatic antishock 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. More than 15,000 reusable LifeWraps have been sold by Blue Fuzion Group in 11 countries since 2014.



## Keeping newborns safe from infection

In order to prevent umbilical cord infection and neonatal sepsis, PATH led a global coalition to advance 7.1% chlorhexidine digluconate (CHX) for use as an essential newborn care intervention. CHX has been introduced or scaled in more than 25 countries.



*For more information about the PATH's portfolio of technologies, please contact [innovation@path.org](mailto:innovation@path.org). All photos: PATH, where not otherwise indicated*



PATH is a global nonprofit dedicated to achieving health equity. With more than 40 years of experience forging multisector partnerships, and with expertise in science, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales up innovative solutions to the world's most pressing health challenges.

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