

The Global Health Innovation Accelerator aims to improve the health of low-resource populations in South Africa by supporting local innovators to develop, manufacture, and deploy the most promising global health technologies throughout South Africa and beyond.

Background

In August 2014, PATH and the South Africa Medical Research Council (MRC) launched the Global Health Innovation Accelerator (GHIA) to support late-stage development and commercialization of diagnostic and medical device technologies that can serve the health needs of resource-limited communities in South Africa and beyond. GHIA formalizes and builds upon PATH's current collaborations with local South African academic researchers, commercial partners, and entrepreneurs, as well as MRC's active Strategic Health Innovation Partnerships (SHIP) program, which was created to catalyze and fund early-stage research and development on a range of vaccine, drug, medical device, and diagnostic technologies. GHIA will support a portfolio of maternal and child health-focused technologies, including graduates from the SHIP program, to ensure their advancement through product development, early market penetration, and eventual impact. PATH's global presence and 40+ years of experience in taking technologies to scale combined with MRC's extensive university and research networks results in a strong partnership with potential for significantly altering the global health technology landscape throughout Africa.



GHIA's focus on improving local innovation ecosystems also strengthens its potential for impact. By expanding technology development and commercialization opportunities to South African innovators, we believe that we can strengthen the link between local needs and their solutions,

increase access through more affordable pricing and wider distribution, while also improving social and economic conditions by strengthening businesses that employ local talent. GHIA also aims to accelerate opportunities for developed-world researchers and companies to develop joint research and development programs and/or license their global health technologies to South African manufacturers in order to penetrate new markets in sub-Saharan Africa.

Framework for operations

To maximize public health impact, GHIA has incorporated a rigorous process for pipeline development and a hands-on partnership model for advancing technologies. These functions are illustrated in Figure 1.

Figure 1. Functions of GHIA: strengthening local innovation ecosystems.



Pipeline development

GHIA leverages PATH's well-established pipeline development process, a result of decades of experience in identifying and evaluating technologies of global health importance. GHIA adds a formal identification process to ensure that critical health needs and their contextual factors are clearly understood. Technology solutions are then sourced to address prioritized health needs. Once identified, these technologies are then evaluated across several dimensions, including the extent of the public health gap addressed, likely receptivity of major in-country and global stakeholders, effectiveness over status quo technologies, economic rationale, and market sustainability. The goal is to create a sustainable pipeline of solutions to be advanced in partnership with local innovators, leading to local ownership and manufacture.

Technology advancement

For each selected technology, GHIA develops a hands-on enabling partnership with the local innovator, as depicted in Figure 2. While South Africa's innovation ecosystem is emerging, entrepreneurs can benefit significantly from structured assistance to develop their capacity for product

development, validation, technology transfer, and commercialization.

GHIA leverages access to PATH and MRC's global health experts who provide ongoing, critical technical, market, and systems development support, such as bench testing of prototypes, user design assessments, technical and financial support for regulatory approval, market strategies that leverage public and private distribution channels, and advocacy with governments for affecting necessary policy change. The enabling partnership model goes well beyond advice and mentorship, providing instead true partnership support to innovators through critical phases of their progression from technology development to commercial scale.

In addition to the technical support, and as appropriate, PATH and MRC can leverage their global health networks, such as the World Health Organization, the private-sector, and non-governmental organization partners, to ensure that local innovators can maximize their success in global markets. Finally, GHIA may provide direct grant funding to its partners, as well as develop linkages to impact investors and other downstream funders, to ensure that local innovators can access a ready funding stream to further advance their technologies.

PATH's track record

GHIA draws on PATH's 40-year track record of partnering with technology innovators to develop novel solutions to critical global health needs. PATH now works in more than 70 countries, and in 2013, PATH's innovations reached more than 219 million people, mainly women and children. Some past successes with private-sector partners include:

- Developed and advanced the SoloShot™ syringe, the world's first autodisable syringe, which has been used to deliver more than 6 billion vaccinations.
- Advanced the vaccine vial monitor, a "smart" sticker that informs a health care worker of a vaccine's heat exposure, thereby eliminating the costly error of injecting a child in a remote village with a vaccine that has already lost potency. Over 5 billion VVMs have been placed on vaccine vials to date.

Figure 2. GHIA's value-add to South African innovators.



- Developed a new vaccine, the MenAfriVac® vaccine, to eliminate meningitis A in sub-Saharan Africa. By working closely with research, manufacturing, and delivery partners, PATH played a major role in helping more than 100 million people to receive the vaccine within the first two years of introduction—with zero cases of meningitis identified among those immunized.

Current pipeline

GHIA has a robust pipeline of technologies in various stages of development. Some highlights include:

- A heat-stable, fast-dissolving tablet form of oxytocin that can be put under a woman's tongue (sublingual) to prevent or treat postpartum hemorrhage, a potentially lifesaving intervention, particularly in peripheral facilities where the risk of death from hemorrhage is high.
- A noninvasive anemia screening device that can easily and inexpensively be used at the point of care by minimally trained health workers to identify those pregnant women and young children in need of iron supplementation to reduce the risk of irreversible damage to the immune system and cognitive function.
- A low-cost and highly accurate dipstick that measures protein in a pregnant woman's urine to test for preeclampsia, a condition associated with dangerously high blood pressure and elevated risk of death.
- A software application for smartphones that helps emergency room nurses more efficiently triage patients to ensure rapid care for those with the most urgent needs.
- An low-cost ultrasound device that measures blood flow in the umbilical cord to identify babies in the third trimester who are at especially high risk for birth complications.

GHIA is the next-generation model for addressing the challenges in global health. The faster we move the most promising technologies through the pipeline and onto the global stage, the more lives we can change and the less the reliance on global funders to deliver such goods and services. We hope you will join us. Your funding and relationship support is important.

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