

# Tackling Grand Challenges Using Innovation



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This year, we celebrated the 10th Anniversary of the original Grand Challenges in Global Health initiative. Grand Challenges – launched initially by the Bill & Melinda Gates Foundation and now involving many global partners – changed the course of global health. Before 2003, there was skepticism that world-class discovery science had a legitimate role, despite the fact that some of the greatest scientific advanc-

es were the bulwark of the public health approach to global health. The Grand Challenges in Global Health initiative has, more than any other single intervention, established the legitimacy – indeed the necessity – of innovation in global health.

Grand Challenges Canada became one of the founding members of the Grand Challenges network upon its launch in 2010. Funded by the Government of Canada, Grand Challenges Canada invests in Bold Ideas with Big Impact that bring together social, business and technological innovation – called Integrated Innovation. We fund innovators in Canada and in low- and middle-income countries. Our ultimate desired outcome is saving and improving lives in developing nations, with a particular focus on women and children and those that are most in need.

Since 2010, Grand Challenges Canada enabled the creation of a pipeline of global health innovations, and evolved into a platform that nur-

tures innovative solutions and offers opportunities for social enterprises and impact investors to generate measurable and sustainable social impact. To date, Grand Challenges Canada has funded 637 innovations implemented in over 80 countries. In Canada, we have supported 226 global health innovations totaling \$40 million.

Innovation is often thought of as a long term undertaking with 10 year or longer timelines to impact. With less than 20% of our projects reporting early results, we have already reached 1.2 million beneficiaries, providing them access to a global health product or service. This has saved thousands and improved tens of thousands of lives in developing countries.

For example, JSI, an innovator we support through the Saving Lives at Birth partnership, introduced chlorhexidine for cord care in Nepal, and trained over 30,000 female health volunteers to deliver this live saving innovation to women, who in turn applied chlorhexidine to approximately half a million

newborns. Research shows that using chlorhexidine for cord care (a tube of chlorhexidine costs a mere 20 cents) saves one newborn life for each 200 beneficiaries who receive it. That means that 2,700 newborn lives have been saved so far.

In Haiti, Zanmi Lasante is providing treatment and care for depression, psychosis and epilepsy, as well as child and adolescent disorders. This project so far allowed screening for depression of 2,866 individuals and a further 3,408 patients received treatment for epilepsy and depression.

We are learning valuable lessons on how innovation at the interface of public and private sectors can enable impact. Innovation can be taken to scale through public health systems, social enterprises, small companies with angel investors, through large companies with a shared value approach or by leveraging large companies.

As a recent example, an international group of public and private

organizations (Monash University, GSK, McCall MacBain Foundation and Planet Wheeler Foundation and Grand Challenges Canada) collaborated to accelerate the development of an innovative inhaled form of oxytocin. Oxytocin is used to manage postpartum hemorrhage but is currently only available in an injectable form, requiring refrigerated storage conditions, a problem in resource-poor settings. Formulated as a dry powder, inhaled oxytocin would solve storage and delivery issues and grant access to this life-saving drug for many more women in low-resource settings.

Another model is investing in a fund which then creates a portfolio of direct investments. Grand Challenges Canada is an anchor investor into the \$108 million Global Health Investment Fund (GHIF). Earlier this year, the GHIF committed \$5 million USD to support the final stages of the development of a new oral cholera vaccine. Expanding the supply of high-quality, low-cost

oral cholera vaccine will play an important role in increasing vaccination coverage for those most at risk.

A question to be answered is how we can accelerate the quantity and quality of innovations transitioning to scale in a sustainable manner? One solution could be a global innovation marketplace. This marketplace is still at a very early stage but offers the promise of systematically linking promising innovations and innovators with partners who can help them to go to scale.

So what is the next great frontier for innovation in global health? Looking at the rich pipeline of affordable innovations that we have invested in, we realize applicability in Canadian health care. At the moment, most innovation in Canada is slightly better but much more expensive. Effective, low-cost innovation, created in response to a lack of resources and the needs of poor populations in developing nations, could be put to use at home to help to bend the rising healthcare cost curve.