

Global health innovators mobilize to help developing countries combat COVID-19

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TORONTO, ONTARIO, CANADA, April 27, 2020 /EINPresswire.com/ -- Novel, affordable ways to acquire medical oxygen, ventilators, masks and other critically-needed COVID-19 supplies and services are among 20 [Grand Challenges Canada](#) innovations mobilizing to assist developing countries through the global pandemic.

In the past decade, the innovations received GCC support in several forms, including over \$19 million provided by the Government of Canada, based on the criteria of "bold ideas with big impact" in global health. These project now offer critical resources, ideas and solutions for low-resource countries struggling to meet an acute need for affordable, locally-sourced products and services, most urgently:

- * Medical oxygen, ventilators and related training
- * Local manufacturing of personal protective equipment for health care workers
- * Life-saving information for hard-to-reach populations



Hon. Karina Gould, Canadian Minister of International Development

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It is during times like these that the value of investment in innovation becomes most obvious.”

Karlee Silver

The innovators leading these 20 solutions are based in 11 countries -- Kenya, Uganda, Tanzania, South Africa, Brazil, India, Bangladesh, Cambodia, Australia, Canada and the United States -- and operate in low-resource areas throughout Africa and beyond, from the Amazon to the Himalayas.

4 projects provide medical oxygen
2 produce rugged, battery backed-up ventilators

- 1 is pivoting from affordable locally-produced sanitary pads to low-cost masks
- 2 offer innovative diagnostic / imaging equipment
- 7 support remote patient care, monitoring and essential products delivery
- 1 supports mental health care
- 2 support safe water, sanitation and hygiene
- 1 supports at-home education

Examples:

* University of Alberta (Canada) researchers and Global Health Uganda partners developed an easy-to-use "SPO2" solar powered system that turns ambient air into medical-grade oxygen with battery banks enabling uninterrupted service through the night and on cloudy days. SPO2 systems include how-to "roadmaps" for local procurement, training, and maintenance of solar

oxygen concentrators helpful to COVID-19 responses in remote, off-grid facilities or those without a reliable electricity supply. Oxygen therapy systems are currently installed in 10 African hospitals (8 in Uganda; 2 in DR Congo), and the team is exploring partnerships to expand their reach to meet demand.

* Gradian Health Systems Inc. (USA) has established distribution and service networks providing and sustaining world-class medical equipment in facilities across more than 30 sub-Saharan African countries. Its Comprehensive Care Ventilator supports critically-ill patients in settings with unreliable supplies of power and oxygen, including temporary field hospitals being set up to manage COVID-19 patients in many countries. The ventilator can run for 21 hours on battery power, and its portability features enable single-ventilator use throughout critical care, including patient transport. Simulation-based training is a critical component of Gradian's model, with teams of clinicians and bio-medical technicians providing remote and on-site training to healthcare providers.

* Saral Design Solutions (India) produces a fully-automatic, compact machine designed to make low-cost, ultra-thin disposable sanitary pads through a decentralized manufacturing system. Saral has modified a Swachh machine to create 3-ply disposable surgical masks, adapting its ultrasonic sealing technology for non-woven materials to produce masks at a rate of 50-70 units per minute for less than US 6 cents per mask.

* Atomo Diagnostics Limited (Australia) has created an innovative casing for rapid diagnostic blood tests. Originally developed for HIV diagnosis, the user-friendly devices enable home testing and testing in medical facilities without highly-trained healthcare workers. They will be deployed under a partnership with a French diagnostics company, NG Biotech, to detect COVID-19. Results from a drop of blood indicates within 15 minutes indicate whether a person is infected or been in contact with the virus. The company will produce millions of the all-in-one, easy-to-use devices for professional and self-testing.

* WelTel Incorporated (Vancouver, Canada) integrates virtual care and patient engagement, connecting remote outpatients with the healthcare system between clinical visits via their mobile phones. Public health agencies are using it to monitor and support COVID-19 cases and contacts in home quarantine. Patients respond to automated text messages sent via the Internet-based app. WelTel collects message data, using natural language processing and predictive algorithms, to inform healthcare providers and public health officials to priority patient issues. WelTel's system supports appointment scheduling and reminders, and broadcasts video or public health information on a secure patient portal. Proven in Rwanda, Kenya, Uganda, the USA and elsewhere, WelTel is adapting and deploying its platform for COVID-19.

Please see the full news release with all 20 project descriptions, illustrations and links to photos and videos, at <https://bit.ly/2zB5XyZ>; photos: <https://bit.ly/34YGuuP>

Says [Karina Gould](#), Canada's Minister of International Development: "To overcome the unprecedented global health challenges presented by COVID-19, the world needs innovation and



US-based Gradian Health Systems has established distribution and service networks providing and sustaining world-class medical equipment in facilities across more than 30 sub-Saharan African countries. Photo: Gradian training in Kenya

ingenuity. Over the past 10 years, Canada's funding for Grand Challenges Canada has helped hundreds of innovative ideas become a reality. Today, some of those very ideas are saving lives by helping people prevent and respond to COVID-19 and other health challenges in developing countries."

Adds GCC co-CEO Dr. [Karlee Silver](#): "Innovation in global health means provisioning low-resource areas with needed goods and services that are better, faster and cheaper. Such solutions take time to develop, scale up, and evaluate as they transition to scale."

"With Canadian Government funding, we have supported a portfolio of solutions over the past 10 years that are particularly relevant to the developing world's COVID-19 response. It is during times like these that the value of investment in innovation becomes most obvious."

"Grand Challenges Canada is lending expertise and other support to the innovators as they focus on the pandemic, and several will receive additional funding as needed to help accelerate their response to COVID-19. Many others among GCC's 228 active innovation projects are working to mitigate the fallout of COVID-19 on reproductive, maternal, newborn and child health services disrupted by pandemic control measures," says Dr. Silver.

"We have been guided by local governments' needs, with locally supplied medical oxygen topping the list -- a resource in tragically short supply and high demand throughout much of the developing world."

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Saral Designs in India has modified a sanitary pad-making machine to produce 50-70 three-ply disposable surgical masks per minute for less than US 6 cents each.

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