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Local News

Originally published Friday, December 16, 2011 at 12:46 AM

Grants to fund device for remote health diagnosis

Two of the biggest spenders on global health innovation are hoping that \$38.5 million will be enough money to create a handheld device that doctors could use to diagnose patients far from medical labs.

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Associated Press

SEATTLE —

Two of the biggest spenders on global health innovation are hoping that \$38.5 million will be enough money to create a handheld device that doctors could use to diagnose patients far from medical labs.

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The battery-powered devices could be taken into remote areas to take samples from patients and provide analysis on various illnesses.

For example, if a child has a fever, medical field workers can now test to see if she has malaria. But they can't test to see if she has some other illness, and they wouldn't be able to say exactly which strain of malaria is in her blood.

Medical researchers already have developed some of the tests they want to include in the all-in-one device, but pulling them together will be the biggest challenge, said Dr. Peter Singer, chief executive officer of Grand Challenges Canada.

On Friday, Singer's organization planned to announce nearly \$32 million in grants to 22 researchers around the world to tackle different pieces of the project, from developing new tests for life-threatening diseases to creating technical and clinical protocols that each of the tests would need to meet in order to pull them all together into one device.

The money comes from the Canadian government and Seattle's Bill & Melinda Gates Foundation. Another \$6.5 million will be spent on pulling the pieces together into one device.

Rebecca Lackman, who is in charge of the technical side of the project for Grand Challenges Canada, compared the development process to a software developer creating apps for a smart phone or tablet computer.

Dr. David Goldfarb, a pediatrician at the University of Botswana and McMaster University in Hamilton, Ontario, explained how this research will be applied in the clinics he works at in Africa.

Diarrheal disease is the biggest killer of children in Botswana but it can take days to get confirmation of a diagnosis from the lab. By then, it might be too late to save a child, he said.

"If you're waiting two days to find out what the actual cause is, you miss the boat," Goldfarb said. "We often don't know what we're treating. We kind of treat somewhat blindly."

Bigtec Labs in Bangalore, India, is using its grant to develop a filter to concentrate pathogen DNA from samples of blood, urine, a throat swab or other body fluids. Once concentrated, the pathogens can be more easily analyzed by a handheld device.

Achira Labs, also in Bangalore, is working with researchers at McGill University in Montreal to find a way to use a piece of silk as a cost-effective and simple diagnostic tool for blood and urine samples. Singer said they were especially interested in this idea because it would have the added side effect of creating jobs for local artisans and it is environmentally friendly.

Even if the effort to create the device is unsuccessful, Singer expects the project will still be beneficial because the individual medical tests being developed will save lives on their own.

"More rapid diagnosis of malaria alone could prevent 100,000 deaths a year," Singer said. "We believe this and other life-saving opportunities are within our reach."