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Koburongo, Turyabagye and Besufekad came up with the idea after one of them lost a relative to pneumonia

SMART JACKET DETECTS PNEUMONIA FASTER

A group of innovative entrepreneurs has created a way to diagnose pneumonia faster using a jacket-like device, writes **Emmanuel Affedda**

Pneumonia is an acute respiratory infection that affects the lungs. According to a 2015 Unicef report, pneumonia remains a leading infectious cause of death among children under five years, killing 2,500 children a day and it accounts for 15% of all under-five deaths. The report further revealed that pneumonia killed 920,000 children in 2015 and most of its victims were less than two years old.

Pneumonia diagnosis in poor countries tends to delay, as the symptoms are often mistakenly treated as common cold and chest infections. Many times, by the time the disease is recognised, it is too late to save a life.

A group, led by Brian Turyabagye, has created a jacket-like device named 'mama ope'. The jacket helps detect pneumonia early in order to facilitate quick life-saving treatment.

Turyabagye, 24, is a founder of Sky App Technologies and holds a degree in telecommunication engineering from Makerere University. Passionate about information technology and social entrepreneurship, he is also a member of QEPrize Global Engineering Ambassadors Network, an international network for engineers from both business and academic institutions.

The idea for a pneumonia-diagnosing device dates back to 2015, when Turyabagye's friend's grandmother died from pneumonia complications. Concerned about the danger of pneumonia, especially among children below five years, the team chose to research on a way to reduce pneumonia deaths. The idea started while at the Ilabs@mak research project under the College of Engineering, Design, Art and Technology at Makerere University.

"I was approached by Olivia Koburongo, who had lost her grandmother due to the pneumonia turgidity. Together with Besufekad Shifferaw, we brainstormed on a solution that would improve pneumonia diagnosis and monitoring to reduce the death cases arising out of the illness. That is how Mama Ope jacket came to be," Turyabagye says.

HOW MAMA OPE WORKS

A health worker slips the jacket onto the child and its sensor picks up sound patterns, temperature and breathing rate from the lungs. Each sensor is aligned to a particular symptom of pneumonia and within four minutes the data is computed and sent to a mobile phone application which does the diagnosis.

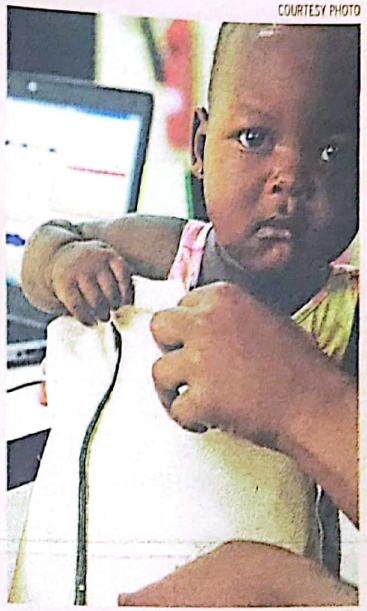
"After that process, the tracked information is sent to a mobile phone app (via blue tooth) and the app analyses the information in comparison with known data, so as to get an estimated strength of the diseases," Turyabagye says.

According to the research and study that Turyabagye's team did on the Mama Ope jacket they had made, the team found out that the jacket can diagnose pneumonia up to three times faster than a doctor can and it reduces human error.

The group was in position to enlist private medical researchers from Makerere University's Infectious Diseases Institute to test the jacket and got guidance from Unicef, which has helped them add more knowledge in terms of technology.

Rodney Sekate, the medical officer who spearheaded the testing of the device, revealed that the jacket is easy to use. He noted that it also minimises the margin of error, which can occur when medical personnel are diagnosing the disease. Sekate said the device does not require extra knowledge since it is about simply slipping it on the child's body and waiting for the processed information to guide on with the treatment.

COURTESY PHOTO



The device computes data in four minutes

STRUGGLES, SUCCESSES

The biggest challenge at the moment is the intensive research work that needs to be done in order to bring out a fine product from the prototype. In order to turn this into reality, the team has beefed up the jacket with more experienced resources for further development.

Still, there has been some success in their story. For instance, gaining global attention for their invention.

"I have been in position to build a strong team, which is a big achievement. The team was recognised twice in the Big Ideas competition from the University of Berkeley in the US. We also won the Pitch@Palace Africa Entrepreneurs 2017 contest in London. All this has paved a way for us to partner with organisations that we work closely with in order to realise our dream of exposing the jacket to more hospitals," Turyabagye says.

The team hopes to partner with organisations that are interested in healthcare technologies in order to pave way for building more pneumonia prevention solutions.

Hopefully, it will not be long before many hospitals in Uganda and other developing countries take up the use of the Mama Ope jacket in order to significantly reduce pneumonia deaths.