

mPneumonia Application

Health need

Pneumonia is the leading cause of death in children worldwide. Every 20 seconds a child dies from pneumonia. Almost all these deaths are preventable if pneumonia is diagnosed and treated correctly. However, the current approach in low-resource settings—using paper-based protocols and relying on a health worker's ability to manually count respiratory rate—has proven inadequate in addressing this problem. Furthermore, hypoxemia—a diagnostic indicator of the presence and severity of pneumonia, often associated with an increased risk of death—is not assessed because pulse oximetry is frequently not available in resource-limited settings.

Technology solution

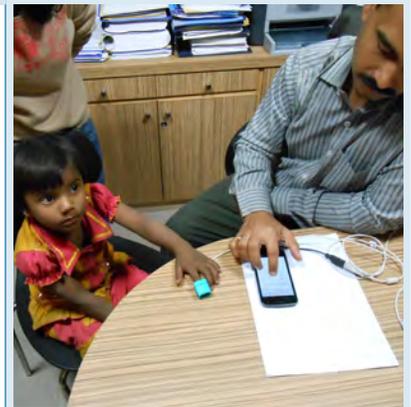
Recent evidence has suggested that cell phone-based algorithms can improve health worker adherence to diagnostic and treatment guidelines. However, studies have shown that algorithms based on respiratory rate alone do not adequately identify children with pneumonia and that clinical assessments are not adequate for determining the severity of the disease or the risk of complications. Our approach is to develop an innovative cell phone-based application using Android smart phone or tablet technology to assist with management of pneumonia. Called the mPneumonia application, it will incorporate a digital version of the Integrated Management of Childhood Illness algorithm with a software-based respiratory rate counter and a pulse oximeter, providing a user-friendly diagnostic and management tool for childhood pneumonia.

Current status and results

To improve frontline health workers' ability to identify and manage childhood pneumonia and severe disease, PATH is working in collaboration with the University of Washington and other partners to:

- Develop and field test the mPneumonia application.
- Perform a pilot field study to assess the clinical performance of the mPneumonia application among public-sector physicians treating children in hospitals in India.
- Conduct a field evaluation of the feasibility, usability, and acceptability of the mPneumonia application among frontline health workers treating children in first-level facilities in Africa and of perceptions among caregivers.

This project was initiated in 2012. We have developed the mPneumonia application and are currently conducting field testing in India. Further field testing and evaluation are being planned for the second half of 2013 in Africa.



PATH/Gabe Bienydzki

The mPneumonia application is a user-friendly tool.

Mobile phones are an example of how innovation creates unprecedented potential for scale-up. More than 5 billion mobile phones are used globally, and two out of three mobile users live in the developing world.

Innovation Working Group for the Global Strategy for Women's and Children's Health page. The Partnership for Maternal, Newborn & Child Health site. Available at: http://www.who.int/pmnch/activities/jointactionplan/jap_innovationswg/en/index.html.

Availability

For more information regarding this project, contact Dr. Amy Ginsburg at aginsburg@path.org.

Donor support

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