PROJECT BRIEF

Field trials of acute respiratory infection diagnostic aids

The Acute Respiratory Infection Diagnostic Aids (ARIDA) project aims to evaluate community health workers' and facility health workers' use of respiratory rate counting aids on children under five in Ethiopia, Nepal and Mozambique

Project outline

Pneumonia is one of the leading causes of death among children under five in Asia, South America and sub-Saharan Africa. Many pneumonia deaths result from late care-seeking and inappropriate treatment due to misdiagnosis of symptoms.

Current standard practice for community health workers (CHWs) and health facility workers (HFWs) is to count respiratory rate (RR) by observing chest movements using an acute respiratory infection (ARI) timer which beeps after 60 seconds. In practice, this can be difficult as children breathe irregularly and faster than adults, they may not be calm and still for a full minute. It is difficult to define what is and is not a breath. Counting RR is a difficult exercise, even for trained health workers. Misclassification therefore remains high, leading to incorrect diagnosis and consequently inappropriate treatment.

Countries
Ethiopia, Nepal, Mozambique

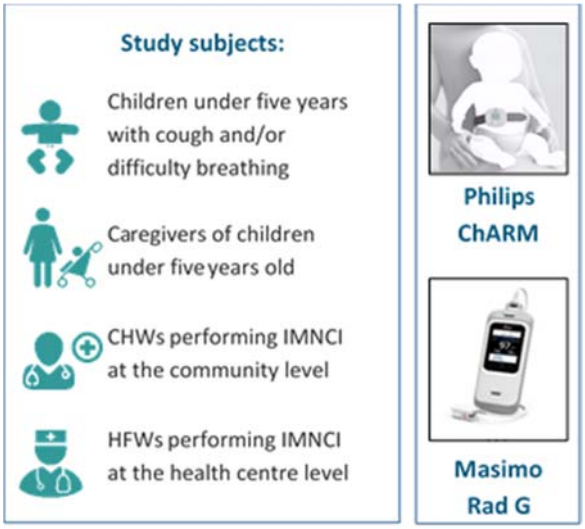
Donors
'La Caixa' Foundation
UNICEF

Length of project
July 2016 – December 2018

Partners
Federal Ministry of Health, Ethiopia
Federal Ministry of Health, Nepal
Ministry of Health, Mozambique

The United Nations Children's Fund (UNICEF) ARIDA project aims to identify and introduce automated RR counting aids for use by health care workers in resource limited community settings and health facilities.

UNICEF contracted Malaria Consortium to carry out research studies in three countries: Ethiopia, Nepal and Mozambique.



Activities

The current study aims to understand whether CHWs and HFWs using an ARIDA can adhere to integrated management of newborn and childhood illnesses (IMNCI) guidelines and also to understand their perceptions on the benefits of and barriers to using the ARIDA device. Two ARIDA devices will be evaluated:

- The Philips ChARM device which is strapped to the belly of the child and automatically measures and classifies RR
- The Masimo Rad G device, a joint device that uses pulse oximetry to automatically measure and classify the child's RR and oxygen saturation levels

This study is a prospective, observational study with a mixed methods design. The quantitative component will involve observing CHWs and HFWs using ARIDA and assessing whether they can follow IMNCI guidelines. One hundred and fifty CHWs and HFWs will be assessed twice over a two month period, once after training and once after two months of use. The qualitative component will use semi-structured interviews to understand CHWs and HFWs' and caregivers' perceptions of the devices.

CHWs' and HFWs' intention to adhere to guidelines is affected by five facets of acceptability: affective attitude, burden, intervention coherence, perceived effectiveness and self-efficacy.

These acceptability facets, combined with the CHWs' skills and abilities (levels of education, knowledge of integrated management of neonatal and childhood illnesses (IMNCI) guidelines, understanding of how to use the device and the device manufacturer guidelines) and other environmental constraints (such as child behaviour, caregiver behaviour, context and setting) will affect their adherence to guidelines, behaviour and adherence trajectory over time.

The Philips ChARM device will be trialled in Ethiopia from April 2018 – July 2018 and in Nepal from April 2018 to July 2018. The Masimo Rad G device will be trialled in Ethiopia from June 2018 – October 2018, in Nepal from July 2018 – November 2018 and in Mozambique from July 2018 to November 2018.

Project objectives

- To determine if CHWs and HFWs using an ARIDA adhere to IMNCI algorithms and correctly assess and classify children under five with cough and/or difficulty breathing
- To document the user experience of ARIDA and ARI timer in a sick child consultation
- To explore the acceptability of the ARIDA and ARI timer to CHWs, HFWs and caregivers

For more information about the project, please contact:
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https://www.malariaconsortium.org/what-we-do/projects/64/arida-protocol-and-field-trials-services

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