Pneumonia Diagnostics – searching for new tools for frontline health workers in resource-poor settings

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CHWs measure the respiratory rate of a child in South Sudan (top) and Cambodia (bottom)

Key messages

- Community health workers (CHWs) need and value improved diagnostic tools to detect the signs and symptoms of pneumonia
- More research is needed to demonstrate if CHWs could use pulse oximeters to detect the signs of severe pneumonia and refer the patient to a medical facility to receive oxygen treatment

Introduction

Globally, pneumonia remains the leading cause of death in children under five. Diagnosis can be challenging given the current available tools used by frontline health workers in resource-poor settings.

Objective

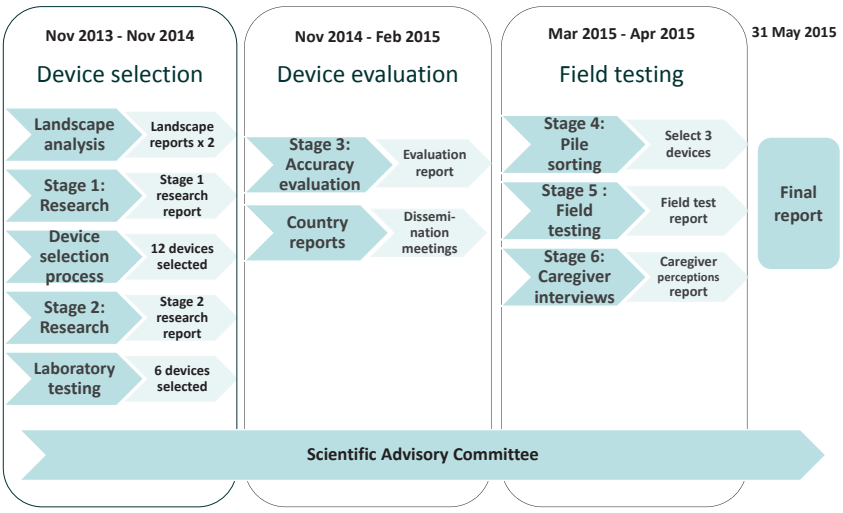
To identify the most accurate, acceptable, scalable and user-friendly diagnostic tools to measure respiratory rate and oxygen saturation for the diagnosis of pneumonia in children by CHWs and first-level health facility workers (FLHFWs) in Cambodia, Ethiopia, South Sudan and Uganda.

Methods

Involves quantitative and qualitative methods and has three main phases spanning 18 months:

- **Device selection** - 190 possible devices scored and ranked using a range of product attributes to select twelve diagnostic tools to be evaluated. Formative research was also conducted with CHWs to understand the current constraints and enablers in detecting the signs of pneumonia. Further laboratory tests will assess the suitability of potential devices.
- **Device evaluation** - the quantitative elements of the study will be done by CHWs and FLHFWs in health facility settings to measure accuracy, while comparing with a reference standard.
- **Field testing** - document CHWs' experiences using the different devices in their community, over a two month period.

Pneumonia diagnostics project workflow



Formative research findings

- A 'felt' need for tools to detect the signs of pneumonia was expressed by all CHWs
- Barriers to pneumonia diagnosis included community-level barriers and the CHWs lack of sufficient knowledge and skills
- CHWs highlighted issues with their current devices focused on suitability, usability and durability
- Supply chain management issues were also highlighted as a constraint in managing pneumonia at the community level
- CHWs currently have no experience of using pulse oximetry to detect the signs
- CHWs highlighted some ideal device characteristics such as automation, ease of use and accuracy in detecting the signs of pneumonia

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