In-depth Interviews: Facilitator's Guide

I. Basic information

Tell me about your health center:

- how busy
- proportion of children you see vs adults
- common problems that children come with
- use of WHO IMCI routinely
- when thinking specifically about respiratory disease in children,
    - what is the range of severity?
    - Diagnostic tools available?
    - Treatment?
    - Diagnoses?
    - Referral to hospital? Referrals to specialty care?
    - How comfortable are providers in assessing and treating children?
    - What kind of training do they receive? Is there any refresher training or CME?
    - What are the biggest challenges at your health center in diagnosing and treating children with respiratory illness?
    - how common do you think asthma/recurrent wheezing is in the young children that you see?
    - Which asthma medicines do you commonly use in this health facility? Availability of asthma medications both in the clinic and to take home?

II. Brief demonstration of ALRITE

This app is 27 Mb. Do you think providers would be willing/interested in downloading to their personal device?

Start with brief demonstration, then give time to use the app.

III. General comments – ALRITE tool as mobile app (spend less time here)

- What did you like about the app?
- What did you think could be improved?
- How could this app help fill a need in your health center? What parts of the app could be the most helpful?
- Where do you see challenges with using the app?

IV. Feasibility of ALRITE tool

1) Bronchodilator timing and reevaluation.

- Tell me about use of bronchodilators in this clinic. Are they often prescribed? How are they given (oral/inhaler/nebulizer)? How are they supplied to the clinic? How are they supplied to the patient?
- This tool requires reassessment if a bronchodilator is given to evaluate whether it was helpful or not. How is that different from current practice? Is reassessment usually done?
    - What are barriers not to reassess?

2) Integration into clinical practice

- How can we avoid extra work that may be caused by using the app?

- Biggest challenges/barriers to use?
- What kind of training is required to use the app successfully?
- Interest in using stored information in the app as a form of electronic medical record?

If there's time (and hasn't been addressed during the interview)…

What is the supply chain like for bronchodilators and other medications? Are there some that are always reliably available vs others?

Limitations/challenges that you see regarding resource availability? If so, what specifically?

Challenges with diagnosis of asthma

- can patients access inhaled bronchodilator, spacers if they were helpful
- how often do you refer for specialty care; for what indications; level of respiratory support
- how common do you think asthma/recurrent wheezing is in the young children that you see
- Is there a stigma associated around the diagnosis of asthma?
- Availability of asthma medications both in the clinic and outpatient. Pharmacy – how often dispensed.

What supply is like in pharmacy. How often prescribed by clinicians?

- workflow of a patient from start to finish
- Limitations/challenges that you see regarding resource availability? If so, what specifically?

Focus Group: Facilitator's Guide

I. Brief demonstration of ALRITE (5 min)

This app is 27 Mb. Would you be willing/interested in downloading?

Outline for focus group

1. Information about your health center
2. Feedback on ALRITE app
3. Feasibility of using app within health setting

II. Basic information

Please raise hand if:

a. you own a mobile phone
b. that mobile phone is a smart phone
c. you regularly use applications on your phone (ex: Facebook, Whatsapp, games…)
d. you have used a mobile health application
e. you have completed the WHO IMCI training

(count and record for each)

Ice breaking questions (choose 1 or 2)

- how often do you see kids compared to adults in your setting?
- What is the typical workflow of children coming into clinic with respiratory complaints? *(how patients move from arrival to discharge and treatment)*
- What are the most common diagnoses that you give to children who come to clinic with respiratory symptoms?
- what kind of equipment and treatments do you have to take care of children with respiratory disease?

III. General comments – ALRITE tool as mobile app (25 min)

- What are your general thoughts about the app?
- What did you think could be improved?
- Is there anything that you would remove from the app? Or add?
- Would this be something you would prefer to have on your personal phone or keep on a hospital phone/tablet?
- How could this app help fill a need in your clinical setting?
- Where do you see challenges with using the app?

IV. Feasibility of ALRITE tool (20 min)

3) Bronchodilator timing and reevaluation.

- Tell us about your experience treating children with inhaled bronchodilators.
- The ALRITE app asks to reassess children after receiving a bronchodilator after 10 minutes. If you give bronchodilators to children, do you typically reassess them afterwards? Tell more about it. What are the challenges to perform a reassessment?

4) Integration into clinical practice

- How do you think using this app would change your workload?

- Do you think this app will change the flow of patients that you described earlier? Please elaborate.
- Biggest challenges/barriers to use?

V. IMCI decision tree & Respiratory assessment (if there is time)

- How does this protocol/decision tree follow how you currently assess patients in your clinic?
- Do you think the application impacts your ability to perform respiratory assessment? If so, how? If not, what would make it more useful?

Closing comments

Introduction to ALRITE & Usability test

Description of ALRITE

ALRITE is a mobile health application that was created to help diagnose and manage acute respiratory illnesses in young children. The goal of the app is to provide decision support to healthcare providers for children with acute respiratory complaints. The app contains a decision tree based on the World Health Organization's (WHO) Integrated Management of Childhood Illness (IMCI) case management guidelines.

One unique addition is that ALRITE will guide you through a respiratory assessment to help decide on whether a bronchodilator trial may be beneficial. Globally, wheezing illnesses are under-recognized and could contribute to severe respiratory illness in young children.

After the assessment, ALRITE will provide most likely diagnoses and treatment recommendations based on the information provided: 1) pneumonia, 2) pneumonia + wheezing illness, 3) severe disease requiring urgent referral/intervention, or 4) upper respiratory infection (supportive care only).

Instructions to participant:

We will ask you to complete a series of tasks using simulated clinical scenarios. There is no time limit or one single solution to completing each task. The study is designed to test the app and not you. You are welcome to ask me any questions that you have while completing the task. There may be times in the study where I do not answer your question because we are interested in seeing how you solve the problem. I will let you know when I cannot answer your question.

As you complete these tasks, we are going to ask you to think aloud as you work. Thinking aloud will help provide us an idea of what you are thinking as you are completing the task. We understand that you may forget to think aloud. If this happens, we ask you to tell us what you are thinking about. After each task is completed, I will ask you a few questions about the task. After all tasks have been completed, I will ask you a few questions about your overall experience of the ALRITE mobile application. If any of the questions are unclear, please ask for clarification.

We ask that during the scenarios, you imagine that you are using the app in the middle of a busy clinical shift and answer the questions as such.

Participant Comments & Feedback

Participant comments are verbal cues that indicate successes and failures in the app. We will record these comments digitally for later review as well as notetaking during the interview. Participants will be asked to answer a brief survey after completing the interview.

Errors

Errors are mistakes that the participants make while using the app that slows or stops the participant from completing each task. This data is critical for fixing errors and increasing efficiency in the app. These errors will be documented by the notetaker.

Scenario 1:

Task 1: Input information provided into the app to determine whether a bronchodilator trial is recommended.

A new patient enters your clinic with the following circumstances:

- *Name: (choose your name)*
- *Female*
- *Birthdate (choose a date where the child is between 4-6 months old)*
- *Alert and playful*
- *Not Vomiting or convulsing*
- *No difficulty eating or drinking*
- *Coughing for 10 days*
- *No HIV exposure risk*
- *This is her third episode of coughing/difficulty breathing episode since birth.*
- *On exam, her temperature is 37.3C. Oxygen saturation 94%. Respiratory rate 64. She has moderate chest indrawing. No Stridor. When you listen with a stethoscope, you hear wheezing when she inhales and exhales.*

Task 2: Read aloud whether a bronchodilator trial is recommended. If recommended, please find the tutorial on how to administer the bronchodilator and talk through how to administer to your patient. Input that you have administered the bronchodilator in the app.

Scenario 2:

Task 3: Input information for the respiratory assessment using the video of a child provided.

A new patient enters your clinic with the following circumstances:

- *Name: (choose a friend's name)*
- *Male*
- *Birthdate (choose a date where the child is 3 years old)*
- *Alert and playful*
- *Not Vomiting or convulsing*
- *No difficulty eating or drinking*
- *Coughing for 7 days*
- *No HIV exposure risk*
- *This is his second episode of coughing/difficulty breathing episode since birth*

Watch video and record respiratory assessment

Task 4: Read aloud whether a bronchodilator trial is recommended. Then close the encounter and return to the home screen.

Scenario 3:

Task 5: Return to your first patient's encounter (Scenario 1). Is she ready for re-assessment? How do you know?

If ready, please input her follow up examination outlined below.

- *Name: (your name)*
- *After the bronchodilator, she seems to be breathing a little easier than before the trial. On exam, her oxygen saturation 95%. Respiratory rate 54. She has mild chest indrawing. She still has wheezing but only when she exhales.*

Task 6: Talk through the diagnosis and treatment recommendations provided by the app.