

# ICT4Children



# mHealth for Acute Malnutrition

## Presentation outline

- The problem and context
- Key features of CMAM mHealth application
- Lessons learned from 5 country experiences
- Future priorities

# Background

- 50 million children suffer from wasting
- Severe wasting causes up to 2 million preventable deaths/year
- Community-based management of acute malnutrition (CMAM) is the global approach used to treat wasting
- CMAM treatment uses ready-to-use foods, provided at home, with weekly visits to the health centre



# CMAM mHealth application features

Challenge in CMAM programming	Application feature
Complex treatment protocol and low protocol adherence	Response-triggered decision tree algorithms
Low literacy, numeracy of health workers and language barrier with local population	Text, voice, and pictures prompt HWs along the treatment protocol
Difficulties in tracking an individual during treatment and between different treatment programmes	Automated referral initiation and tracking <ul style="list-style-type: none"><li>• Automatic reminders for follow-up</li><li>• Referral notifications</li></ul>

# CMAM mHealth application features

Challenge in CMAM programming	Application feature
Infrequent, inconsistent counselling on improved nutrition, health and hygiene practices	Integrated multimedia for targeted counselling
Paper-based system slow, unresponsive and poor quality—not available for decision makers	Real-time monitoring through automatic generation of reports
Unresponsive stock management system: Frequent stock outs of therapeutic and / or supplementary food at health facilities	Reminders and alerts to supervisors and supply chain

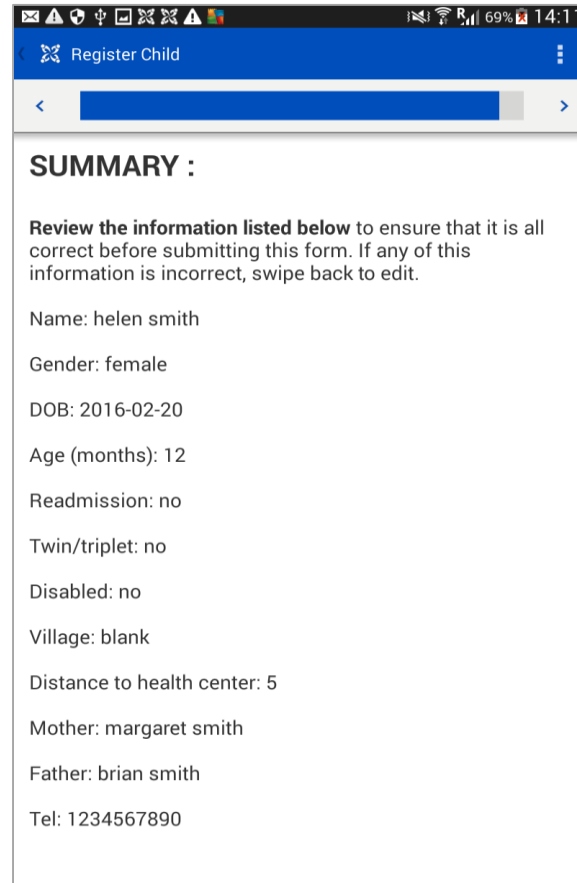
# Paper Registers



# Let's have a look

## Managing patient data

- Registration
- Individual child record



The screenshot shows a mobile application interface for 'Register Child'. The top status bar displays various icons and the time 14:11. The app title 'Register Child' is in a blue header. Below the header is a search bar. The main content area is titled 'SUMMARY :' and contains the following text:

**Review the information listed below** to ensure that it is all correct before submitting this form. If any of this information is incorrect, swipe back to edit.

Name: helen smith  
Gender: female  
DOB: 2016-02-20  
Age (months): 12  
Readmission: no  
Twin/triplet: no  
Disabled: no  
Village: blank  
Distance to health center: 5  
Mother: margaret smith  
Father: brian smith  
Tel: 1234567890

# Improving worker performance

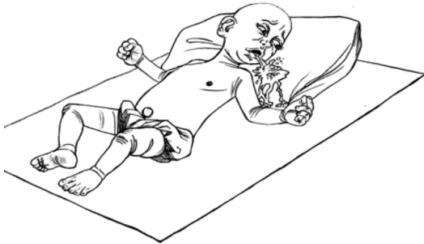
## Prompts and decision support

ades Hannah Thomas Evaluation Initiale

Assessing danger signs


**For the vomiting danger sign to be positive, the child vomits every time it eats or drinks anything.**

Observe: If in doubt, offer the child a drink and observe what happens after. Does it vomit everything? If yes, the danger sign is present. If the child retains fluid, the sign is absent.



14° Niger CMAM New admission Tom Smith

Does the child have oedema?



No

Single positive +

Double positive ++


Triple positive +++

ades Hannah Thomas Evaluation Initiale

Assessing diarrhea

**Does the child have diarrhea?**

Diarrhea is present if the child has had 3 or more loose or watery stools in the last 24 hours.



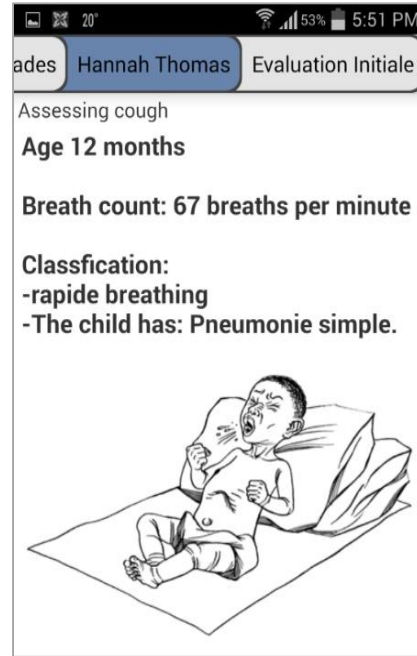
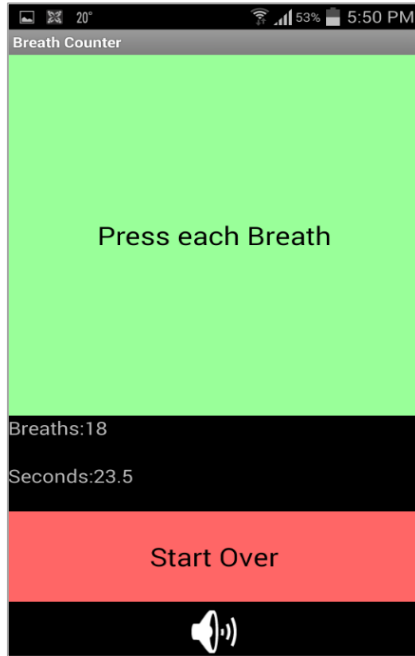
Yes

No



# Respiratory Rate Counter

Automatic Calculation of fast breathing according to standards for child's age



## Diagnosis and action

14° 89% 12:31 PM

Niger CMAM New admission Tom Smith

**Child's height is 70.3cm, weight is 6.5kg and MUAC is 109mm**

**This child qualifies for OTP, please refer the child for treatment.**

OK. Please continue.

**Child is being admitted into OTP for MUAC < 115mm**

## Treatment calculation and stock monitoring

20° 52% 5:54 PM

ades Hannah Thomas Evaluation Initiale

ACTIONS > Action 5 - Moderate ARI: Amox + treat

**Give oral antibiotic (amoxicillin tablet—250 mg).**

**Give twice daily for 5 days:**

**\*Age 12 months up to 5 years—1 tablets (total 10 tabs)**

**How many tablets of Amoxicillin did you give to the mother?**

Jour 1	Jour 2	Jour 3	Jour 4	Jour 5

\_\_\_\_\_

## 5 country experience

- Contextualized and piloted the app in Chad, Niger, Mali, Kenya and Afghanistan
- Partners: MoH, Dimagi, International Medical Corps in Chad, Save the Children in Kenya, Mobile Network Operators, Ministries of Health
- Reached 104 health facilities, 191 health workers
- Implementation (2014–2015), final evaluations 2016



# Key Learning



- With training and support, good health worker acceptability
- High level of beneficiary acceptance
- Data completeness, protocol adherence and beneficiary tracing were improved across the 5 countries
- Technology barriers: battery life, screen size, network coverage
- Country contextualization and testing was much more complex and time consuming than anticipated

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# Future Priorities

- Review and understand what is feasible for health workers in low resource settings with high patient caseloads. Simplify protocols?
- Building and field testing integrated app: iCCM + acute malnutrition
- Linking application to national HMIS systems
- Capacity building to support app uptake and use of application (performance reports, supervision functions)



# Acknowledgements

- Implementing Partners: Save the Children, International Medical Corps
- Funders: USAID/OFDA, Government of Canada

Field Exchange Publication:

<http://www.ennonline.net/fex/54/mobilehealthapp>

<http://www.wvi.org/mHealth> and <http://wvi.org/nutrition/cmam>

*“This project had probably the highest impact potential of any project I have worked on. If you go to these project sites, you immediately see why the intervention is needed... When you observe the nurses, you see the mistakes they make using paper forms, and the off-the-fly decisions they make that have serious impact on the child’s health. So you could see, from the beginning, how the app would really add structure and eliminate a lot of mistakes. And we have been able to see real value on the ground, real value added to such an important programme.”*

**CARLA LEGROS, PROJECT MANAGER, DIMAGI WEST AFRICA**





# ICT4D CONFERENCE

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