

Design and Usability Testing of a Mobile Phone-Based Patient Management System for Women in Rural Kenya

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Overview

Introduction

- Maternal Mortality
- mHealth

Methods

- Setting
- Human-Centered Design

Results

- System Design
- Usage and Usability

Discussion

- Frame 1

What we know...

Reducing maternal mortality is a major global health priority.

Most maternal deaths take place during a specific time period.

The burden of maternal mortality is greatest in poor and remote areas.

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2. Accessing care

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Three delay model for maternal mortality:

1. Seeking care
2. Accessing care
3. Receiving care

Mobile Phones and mHealth

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 - ▶ Mobile banking for everyone

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- ▶ Interactive voice response (IVR)
 - ▶ Patient education
 - ▶ Emergency response

Baby Monitor

Kenyan Health System

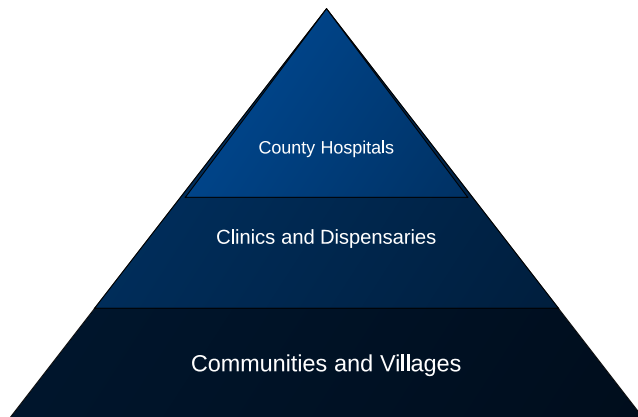
Kenyan Health System



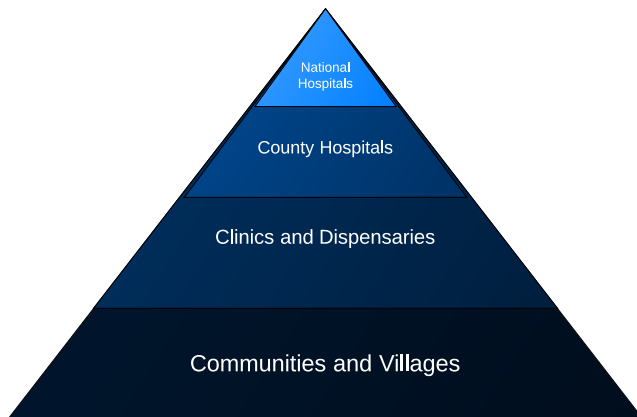
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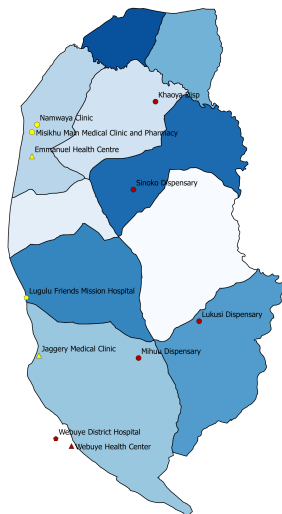
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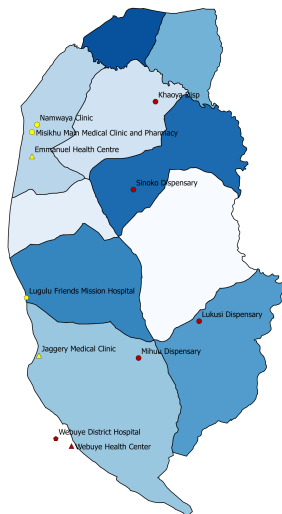
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Research Site

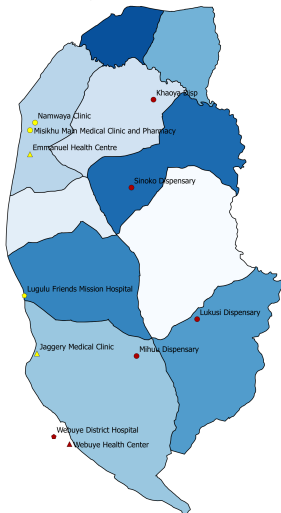


Research Site



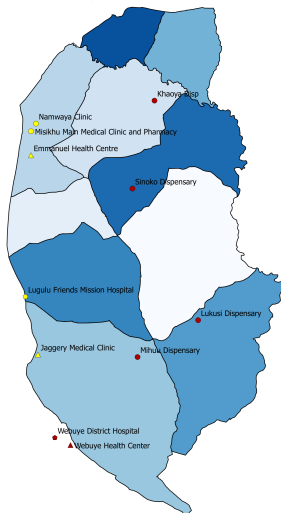
- ▶ Two community units
- ▶ Population: 10,744

Research Site



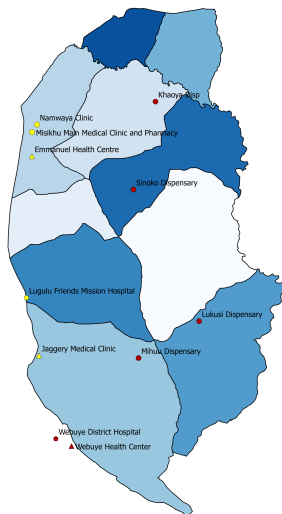
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Research Site



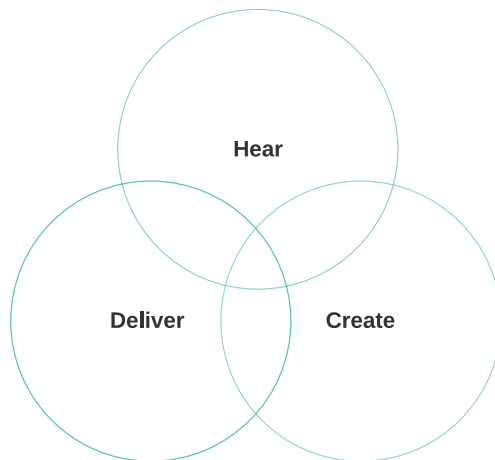
- ▶ Two community units
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- ▶ 55 CHVs

Research Site



- ▶ Two community units
- ▶ Population: 10,744
- ▶ Clinic equipped for deliveries
- ▶ 55 CHVs
 - ▶ 195 individuals
 - ▶ 36 households

Human-Centered Design



Hear Phase

Objective: to understand the users, their responsibilities, needs, and environment.

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How does the current system of community-based maternal and child health care work?

- ▶ CHV focus group discussion
- ▶ CHV shadow days
- ▶ Clinic nurse focus group discussion

Create Phase

Objective: to develop a design solution based on what we've "heard".

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How can voice and text interfaces be integrated to address the users' stated needs and specifications?

- ▶ Verboice
- ▶ VoIP, Asterisk, telecommunications company
- ▶ SMS gateway provider
- ▶ Analysis engine in R
- ▶ CHV mock testing

Deliver Phase

Objective: to implement and evaluate the design solution.

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How well did the design solution address the users' stated needs and specifications?

- ▶ Usage: call data from July 2013 - March 2014
- ▶ Usability: evaluation survey administered through an automated Verboice call
 - ▶ Perceived ease of use
 - ▶ Perceived usefulness
 - ▶ User control
 - ▶ Quality of work life

Create Phase

These are the results of the create phase.

Deliver Phase

Frame 1