mHealth and Obstetrics

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The Use of Cell Phone for Maternal Health: The Abiye Project

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Presentation:
Based on my Master Project

‘The Use of Cell Phone for Maternal Health: The Abiye Project’

submitted to the
Department Telemedicine and eHealth,
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What makes this Important?

Maternal Deaths/Mortality
In 2010: 287,000 died due to pregnant-related causes (1).
[In 2013: 289,000 died!].

> 95 % in Sub-Saharan Africa and South Asia

An African woman’s lifetime risk of dying from pregnancy-related causes is 100 times higher than that of a woman in Norway
UN Millennium Development Goals

Goal 5: Improve maternal health

Target 5A:
Reduce by 75% the maternal mortality ratio by 2015
What is causing the deaths?

9 - 15 % of all pregnancies will develop complications that can potentially lead to death.

Risk of developing these complications is similar worldwide.

But the risk of death is not!
Why?
Why?

Delays!    Delays!!    Delays!!! (2)

40 - 70 % deaths are due to delays

Delay: due to heterogenic reasons, financial, cultural, literacy, social, geographical and so on...
Phases of Delay

**PHASE I:**
Decision to seek care

**PHASE II:**
Identifying and reaching health facility

**PHASE III:**
Receiving adequate and appropriate Treatment

**PHASE IV:**
Referral to the next level of care
Can Cell Phones really Help?

Cell phones (and smartphones) are increasingly common in West Africa (4)
Cell-phones-for-maternal-health model

(An adaptation of the ICTs for Education/Health)
The Abiye Project (1)

A pilot project in Ifedore Local Government Area

Initiated by the Ondo-State Government, Nigeria
“Abiye” means ‘safe motherhood’
Pregnant women are given toll-free cell phones
to call their health facility; their nurse;
or fellow pregnant women, free

(free phone! free calls!)
Map of Africa showing Nigeria
Basic Health Centre
Ese-Oke
NHIS-MDS/MCH Free Health Care for Pregnant Women and Children Under Five
Idanre Local Government, Ondo State
Abiye: Saving indigent women’s lives with phones

In 18 months, we have delivered at least 200 babies and I am telling you that we did not lose any child or mother. Before the advent of the Abiye phones, we had less than 30 women coming to this centre in two years to be delivered.
Ono
ISE LOOGUN ISE
ONDO STATE GOVERNMENT OF NIGERIA

abiye
SAFE MOTHERHOOD PROGRAMME...

- that pregnancy may no longer be a death sentence
The Master Project:

To investigate the effect of cell phone on:

- Facility utilization
  ratio of delivery to ANC registration

- Causes of maternal deaths

  75 percent of maternal deaths:

  (1) severe haemorrhage (bleeding)
  (2) maternal sepsis (infections)
  (3) obstructed labour
  (4) Eclampsia;
  (5) and unsafe abortion
Research Hypotheses

1). Cell phone use increases primary healthcare utilization of pregnant women

2). Cell phone use reduces the odds of occurrence of causes of maternal deaths
Methodology

Case-control study design
Data from hospital registers and patient casefiles
(from January 1 – December 31, 2011)

Questionnaires
for supplementary data
Findings
ABIYE CELL PHONE ADOPTION IN IFEDORE LGA

- Has Abiye Cell Phone and Another phone: 41%
- Has No Cell Phone: 23%
- Has A cell Phone (not Abiye): 27%
- Has Only Abiye Cell Phone: 9%
Facility Utilization

Ifedore Vs Idanre LGA ($p = 0.0001$)

- Total Facility Utilization in Ifedore LGA (Jan-Dec, 2011): 43.4
- Total Facility Utilization in Idanre LGA (Jan-Dec, 2011): 36.7
Facility Utilization of the *Primary and Secondary Healthcare* in the 2 LGAs

- **Ifedore LGA**
  - Primary Healthcare: 54.4%
  - Secondary Healthcare: 31.6%

- **Idanre LGA**
  - Primary Healthcare: 30.6%
  - Secondary Healthcare: 40.9%
Distribution of Cases and Non-cases by Exposure Status to Abiye Cell Phone Program

<table>
<thead>
<tr>
<th>Exposure to Abiye Cell Phone Program</th>
<th>Cases</th>
<th>Non-Cases (Controls)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES (Ifedore LGA)</td>
<td>23</td>
<td>1406</td>
<td>1429</td>
</tr>
<tr>
<td>NO (Idanre LGA)</td>
<td>29</td>
<td>1772</td>
<td>1801</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>3178</td>
<td>3230</td>
</tr>
</tbody>
</table>

Cases:
severe haemorrhage (bleeding); maternal sepsis (infections); obstructed labour; Eclampsia; and unsafe abortion
Odds ratio = 1

The odds of the major causes of maternal deaths in either of the 2 LGAs was statistically same (3).
Conclusions
**Phases of Delay and Abiye Cell Phone Solutions**

**Phases of Delay**

**Phase I:** Deciding to seek (or delay) care
- Achieve better self-appraisal due to information received via cell phone

**Phase II:** Identifying and reaching health facility.
- Reach healthcare facility faster through help from the facility and/or ambulance via cell phone

**Phase III:** Receiving adequate and appropriate treatment
- Necessary assistance received through cell phone connections

**Phase IV:** Referring care to where it could be completed
- Referral arrangement made through cell phones communication
The first hypothesis was confirmed that cell phone increases primary healthcare facility utilization of pregnant women.

The second hypothesis was not that cell phone use reduces the odds of occurrence of causes of maternal deaths, or requires re-assessment at a later date.
References


Thank you for your attention!