Evidence based mHealth scale-up in Uttar Pradesh

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Tattva
Journey from small scale mHealth pilots using basic NOKIA phones to android based Smartphones

1. Background

2. Results from mHealth pilots (feasibility and effects)

3. The scale-up (SIFPSA mSehat)

4. Preliminary learning (scale-up)
Background

The Challenge*
Uttar Pradesh

- MMR: 258
- NMR: 49
- IMR: 50
- TFR: 3.3

Glocal Evidence

Frontline health workers can reduce maternal, neonatal, and infant mortality rates by 30-60%**

mHealth can improve Frontline health workers effectiveness***

at 86.63% households, Uttar Pradesh has the highest mobile penetration in India****

* SRS Uttar Pradesh, 2013
*** mHealth LMIC systematic review.
**** Socio Economic and Caste Census 2011
Key mHealth tools and Strategy

**mSakhi & ReMIND** - interactive mobile phone applications for ASHAs and ANMs – *IntraHealth, CRS, GoUP*

**Used** audio, graphic images and short videos

- **Self-learning** and counselling tool
- **Decision Support** for case management, diagnosis, assessment, treatment and referral
- **Real-Time** monitoring and management

![Engage, Demonstrate, Learn/Improve, Advocate, Scale]

**2011-2014**

**2014-2015**
Study Objectives

Designed two operations research studies to measure **feasibility** and **effectiveness** of mSakhi against paper-based tools.

**OR Study #1** as a *self-learning* and *counseling* job aid.

**OR Study #2** as an integrated job aid (self-learning, counseling, *registration* and *decision support*) specifically for the postnatal period.
Usage per ASHA **doubled**.

**Quarter 1**
- 54 minutes

**Quarter 2**
- 118 minutes

**Quarter 3**
- 121 minutes

**Usage per ASHA per month (Avg.)**

Source: ASHA usage data, web server, OR study 1
Use of mHealth tool

- **ANC**: 42%
- **PNC**: 30%
- **Immunization**: 12%
- **Complementary Feeding**: 11%
- **Family Planning**: 5%

- **10am - 6 pm**: 53%
- **6pm - 10pm**: 33%

Source: ASHA usage data, web server, OR study 1
Use of mHealth tool

Births reported

<table>
<thead>
<tr>
<th>Tool</th>
<th>Estimated Births (as per population)</th>
<th>Reported Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>mSakhi</td>
<td>490</td>
<td>494</td>
</tr>
<tr>
<td>Paper tools</td>
<td>488</td>
<td>380</td>
</tr>
</tbody>
</table>

Source: Birth reported Data collected during endline and web server data, mSakhi OR-2, District Jhansi
ASHAs knowledge – MNCH issues

ASHA MNCH knowledge scores
(max score = 66)
(p<0.001)

Baseline | Endline | Baseline | Endline
---|---|---|---
mSakhi | Flipbooks
40 | 50 | 38 | 44

Source: ASHA MNCH  Data collected during baseline and endline, mSakhi OR-1, District Bahraich
ASHA knowledge – Newborn Care

ASHAs identifying at least 6 critical newborn conditions (percentage)

\[ p < 0.05 \]

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Endline</th>
</tr>
</thead>
<tbody>
<tr>
<td>mSakhi (n=29)</td>
<td>0</td>
<td>75.9</td>
</tr>
<tr>
<td>Paper tools (n=28)</td>
<td>7.1</td>
<td>57.1</td>
</tr>
</tbody>
</table>

ASHAs using the mHealth tool demonstrated higher knowledge of critical newborn conditions (at least six).

Source: ASHA knowledge Data collected during baseline and endline, mSakhi OR-2, District Jhansi
ASHAs using mHealth tool were more likely to deliver complete messages to beneficiaries.

Complete messages = [a]+[b]+[c]

[a] Appropriate to the beneficiaries stage

[b] Importance is told.

[c] Tool is used
Beneficiary Knowledge & Practices

- Knowledge increased in both arms, but was higher in the experimental arm.
- Increased knowledge did not always translate into practices.
## Pilot implementation costs (INR)

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost per ASHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smartphone (hardware)</td>
<td>4000 per ASHA</td>
</tr>
<tr>
<td>Training (5 days)</td>
<td>1600 per ASHA</td>
</tr>
<tr>
<td>Ongoing technical support (ICT resource person)</td>
<td>2280 per ASHA per year</td>
</tr>
<tr>
<td>Application development, server management, and data usage</td>
<td>2400 per ASHA per year</td>
</tr>
</tbody>
</table>

- **INR 10,280** - starting cost per ASHA per annum
- **INR 4,680** - recurring cost per ASHA per annum

### Scale-up costs

- **INR 22,916 per FLW for 3 years**
  - Hardware and Insurance costs
  - Development and Network costs
  - Training and handholding costs

Source: Costing study, mSakhi OR-1, District Bahraich, mSehat RFP
What gets measured, gets managed
Goal & Objectives

- accelerate the reduction of maternal, neonatal, child mortality and total fertility rate in Uttar Pradesh

1. Multimedia job-aid
2. On-demand training and capacity building tool
3. VHSND monitoring tool (services, stock, supply, consumption)
4. ASHA incentive monitoring and payments
5. Strengthening of MCTS/RCH (paperless work-plans, real-time update)
mSehat: Area and Team

**Area**
- Districts 5 (Bareilly, Faizabad, Kannauj, Mirzapur, Sitpaur)
- Blocks 65 (all Blocks)

**Profile**
- Population 12.5 million
- ASHAs 10,252
- ANMs 1,719
- BCPM 65
- MoI/c 65

**Agencies**
- State Innovations in Family Planning Services Agency (SIFPSA)
mSehat: Key Phases

**BUILD**
- Comprehensive mHealth platform
- Engaging, interactive training tools
- Operational processes and guidelines

**ASSIST**
- How to use mobile phones and applications
- How to read, understand, and use data
- Learn while doing (field handholding)

**MEASURE**
- Ease of use, key barriers and challenges
- Effectiveness: Input, output, outcomes
- Tangible value created for FLWs

**IMPROVE**
- User experience, design and responsiveness
- Implementation processes, system preparedness
- Value created for FLWs
mSehat : Application
The ASHA application

1. Family Registration

- Enter households and member details
- View, Enter, Edit, Save
- Auto sync with ANM data
- Based on NHM VHIR register, and GoI RCH register
The ASHA application

5. Home Based Mother and Newborn Care

👍 HBMNC visits on Day 1,3,7,14,21,28,42 after birth

👍 Auto referral and instant sync with ANM and MOIc on identification of danger signs and
The ASHA application

**6 Referral**

👍 Refer and track high risk pregnant women, recently delivered women, newborns and infants

👍 Auto referral based on HBNC data, and ANC service delivery data
The ASHA application

7. Death Reporting

👍 Report death of beneficiaries, and in population
👍 Date, time, type (maternal, newborn, infant), and reasons
👍 Death registration information
The ANM application

1. VHND service delivery

👍 VHND ANC services and Immunization
👍 View past ANC, and Immunization data
Web based. State, District, and Block level users

Drill down reports/graphs till ASHA/village level.
Key Phases

1. Build
2. Train
3. Measure & Learn
4. Improve
Train Approach

Capacity Building

One time training
- Incremental phased training design
- 9 days, four phases
- 1:25 trainer-trainee ratio
- Group approach
- Interactive training tools

Ongoing
- District/Block Coordinator
  - 1 for every block
  - Stationed at CHC
  - Trains during weekly cluster meetings, AAA meetings, VHNDs etc.
  - DHS, Block level meetings

- Call Centre
  - 12 hours a day
  - 365 days a year
  - Over the phone training
  - Issues recording and tracking

mLearning
- Capsular learning
- Multimedia enables (images, sound, text, video)
- Quizzes and feedback
- Centralised content management
# mSehat data (as of July-2016)

<table>
<thead>
<tr>
<th>Population</th>
<th>Adolescents</th>
<th>Eligible Couple</th>
<th>Currently Pregnant Women</th>
<th>Births</th>
<th>Child (0-5 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,25,04,900</td>
<td>1,25,04,900</td>
<td>19,51,351</td>
<td>199,692</td>
<td>3,01,308</td>
<td>14,92,210</td>
</tr>
<tr>
<td>1,14,78,535</td>
<td>1,14,78,535</td>
<td>18,13,532</td>
<td>75,240</td>
<td>89,695</td>
<td>5,78,785</td>
</tr>
<tr>
<td>(92%)</td>
<td>(93%)</td>
<td>(86%)</td>
<td>(30%)</td>
<td>(39%)</td>
<td>(39%)</td>
</tr>
</tbody>
</table>

### ANC service delivery

<table>
<thead>
<tr>
<th>ANC 1</th>
<th>ANC2</th>
<th>ANC3</th>
<th>ANC4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due</td>
<td>5,041</td>
<td>26,570</td>
<td>30,968</td>
</tr>
<tr>
<td>Revd</td>
<td>1,314</td>
<td>11,404</td>
<td>8,907</td>
</tr>
</tbody>
</table>

### Infant Immunization

<table>
<thead>
<tr>
<th>6 wk</th>
<th>10wk</th>
<th>14 wk</th>
<th>9 mth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due</td>
<td>21,244</td>
<td>11,940</td>
<td>12,179</td>
</tr>
<tr>
<td>Revd</td>
<td>25</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>
mSehat: Key Challenges

👍 The Product
- Iterative development, related resistance and delays
- Robust testing and reliable standardisation.
- Generic vs. fixed design

👎 The Processes
- Change management at all levels
- Training of FLWs and Health officials
- When to stop papers ...

👎 The Value (tangible, in limited time)
- What has it in for me...
- Create tangible value for everyone – the ASHAs, ANMs, BCPM, MOICs, CMOs, DMs, and Policymakers

👍 Integration (health ICT systems, other systems)

👍 In-house Capacity (Develop/Nurture)
Thank You!

mSehat ongoing-training session at an ASHA cluster meeting (Sitapur, 2016)

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