



# **Evidence based mHealth scale-up in Uttar Pradesh**

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# Content



**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](#)

\*\* [WHO/UNICEF Joint Statement, 2009](#)

\*\*\* [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



# Study Objectives

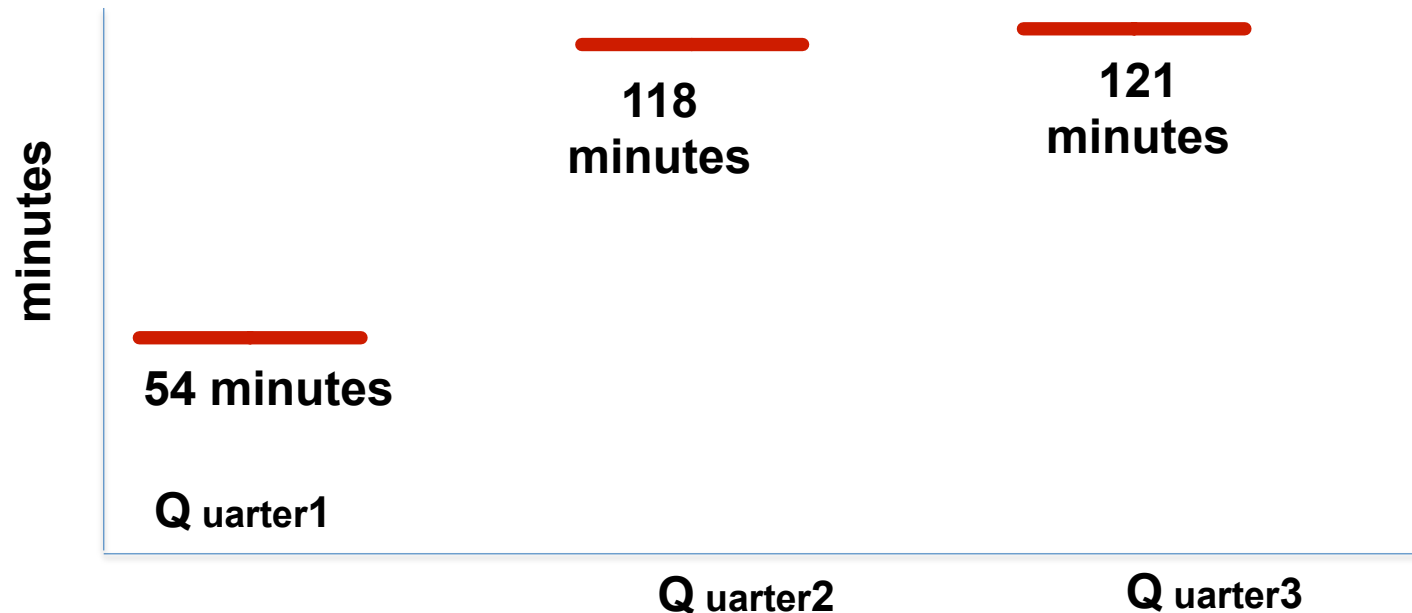
Designed two operations research studies to measure **feasibility** and **effectiveness** of mSakhi against paper-based tools.

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.

# Use of mHealth tool

Usage per ASHA **doubled**.

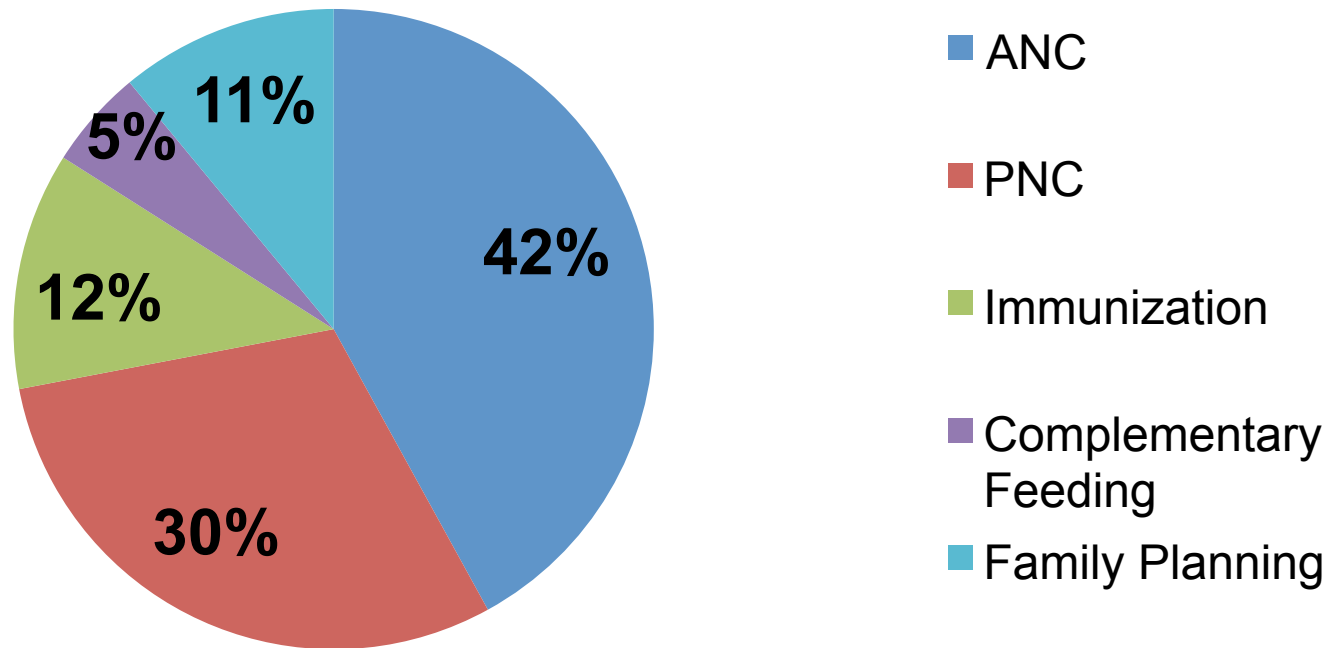


Usage per ASHA per month (Avg.)





# Use of mHealth tool

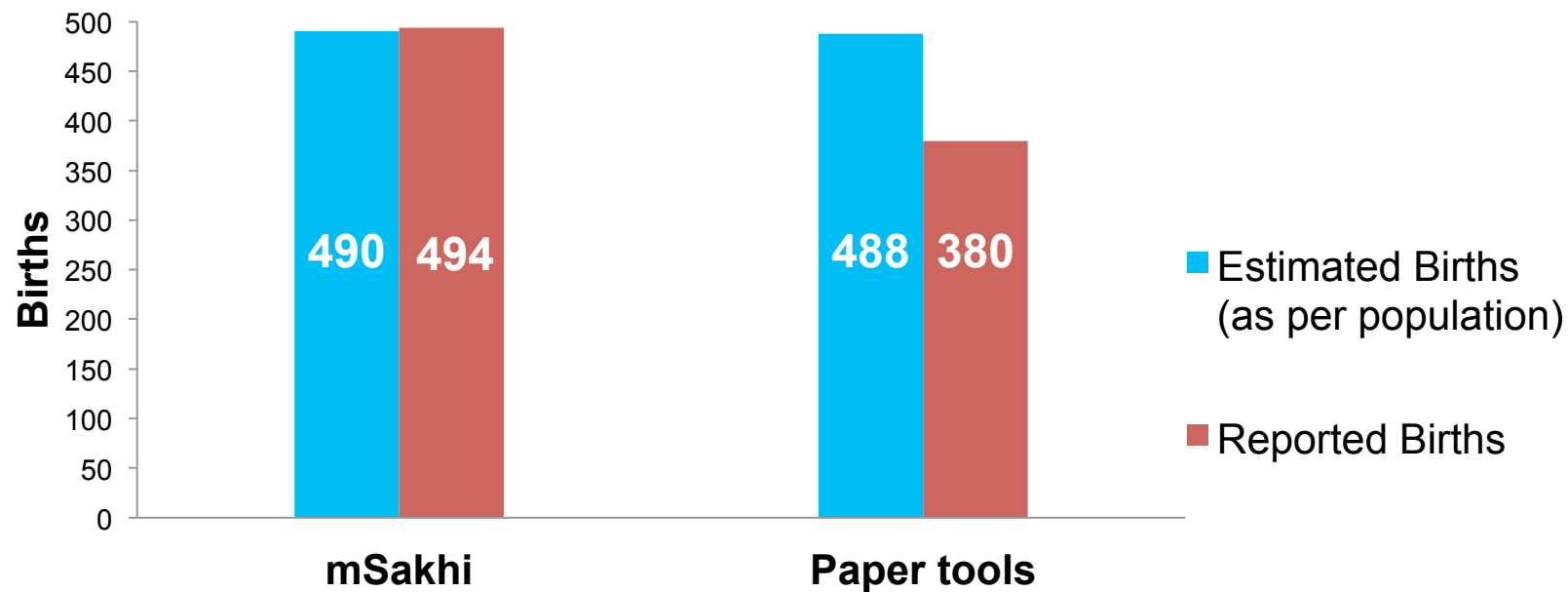


✓ 10am - 6 pm **53%**

✓ 6pm - 10pm **33%**

# Use of mHealth tool

## Births reported



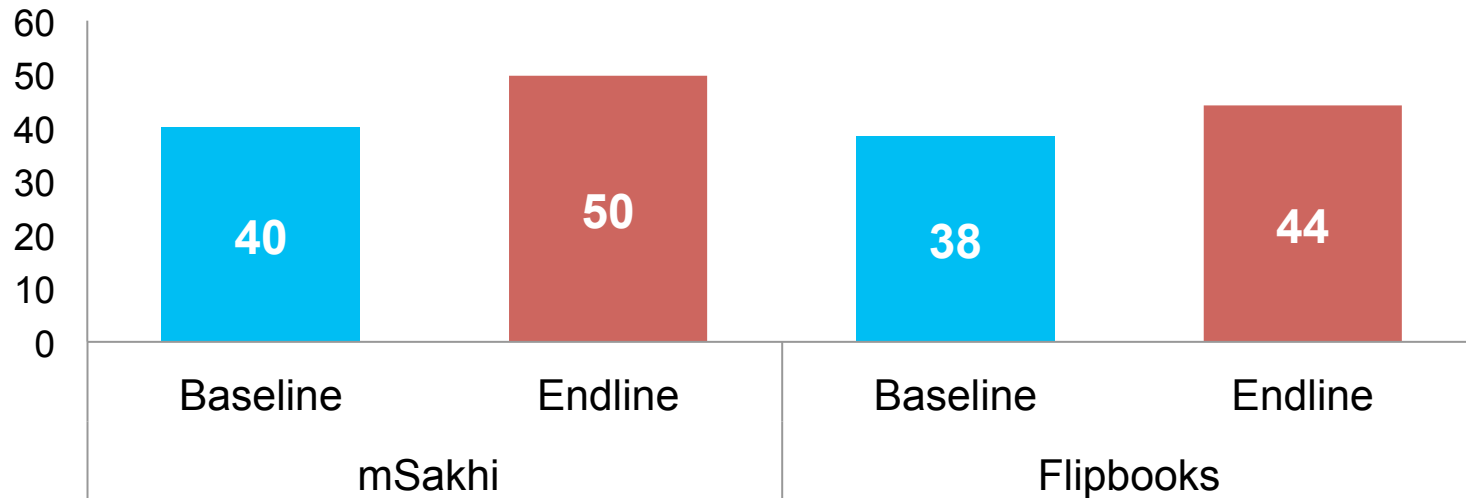


# ASHAs knowledge –MNCH issues

## ASHA MNCH knowledge scores

(max score = 66)

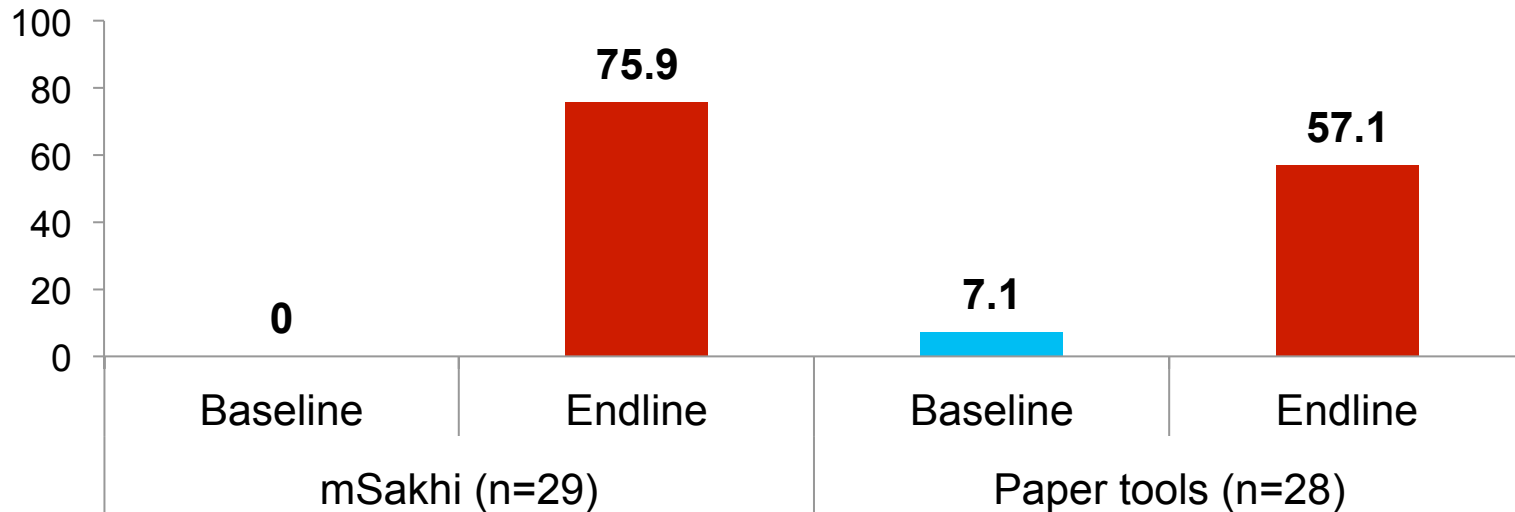
( $p < 0.001$ )



# ASHAs knowledge –Newborn Care

## ASHAs identifying at least 6 critical newborn conditions (percentage)

$p < 0.05$



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

# ASHA Counselling Skills

- 👍 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.

# Costing – pilot studies and mSehat

## Pilot implementation costs (INR)

<b>Smartphone</b> (hardware)	4000 per ASHA
<b>Training</b> (5 days )	1600 per ASHA
<b>Ongoing technical support</b> (ICT resource person)	2280 per ASHA per year
<b>Application development, server management, and data usage</b>	2400 per ASHA per year

- **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



# 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**
- Mol/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

संदर्भन पंजीकरण

संदर्भ का कारण\*

पी.पी.एच (रक्तस्त्राव), एक्लेम्पसिया

संदर्भ का स्थान\*

सी.एच.सी

संदर्भ का समय\*

०४-अप्रैल-२०१६

वर्तमान स्थिति\*

इलाज चल रहा है

दवा का पर्चा मिला

इलाज चल रहा है

अब स्वस्थ है

विस्थापित

मृत

संदर्भन

खोज

लाभार्थी सूची	संदर्भित
नाम : अनामिका परिवार के मुखिया : करण	संदर्भ
नाम : खनी परिवार के मुखिया : मुलायम	संदर्भ
नाम : कलकलकलकल परिवार के मुखिया : ललललललललललल	संदर्भ
नाम : जगजगजगजग परिवार के मुखिया : मुलायम	संदर्भ
नाम : मममममम परिवार के मुखिया : मुलायम	संदर्भ
नाम : घघघघघघ परिवार के मुखिया : मुलायम	संदर्भ
नाम : लला परिवार के मुखिया : करण	संदर्भ
नाम : लला परिवार के मुखिया : करण	संदर्भ

संदर्भन पंजीकरण

संदर्भ का कारण\*

संदर्भ का स्थान\*

संदर्भ का समय\*

टिप्पणी

सुरक्षित करें

संदर्भन पंजीकरण

संदर्भ का कारण\*

पी.पी.एच (रक्तस्त्राव)

एक्लेम्पसिया

अति रक्ताप्लता (Hb 7 से कम)

बहुत गंभीर बुखार रोग

बहुत गंभीर बीमारी

दर्ज करे

सुरक्षित करें

👉 **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

The sequence of screens for death reporting is as follows:

- Screen 1: मृत्यु पंजीकरण**  
Fields: मृतक का नाम\* (माया), मृत्यु का दिनांक\* (26-अप्रैल-2016), मृत्यु का समय, मृत्यु के प्रकार\* (गर्भावस्था के दौरान), मृत्यु का कारण (प्लेसेंटा की विकृति, प्री एक्लेम्पसिया, गंभीर एनीमिया), मृत्यु पंजीकृत करने वाले की तिथि (26-अप्रैल-2016).
- Screen 2: मृत्यु पंजीकरण**  
Fields: मृतक का नाम\* (करण), मृत्यु का दिनांक\* (20-मार्च-2016), मृत्यु का समय (4:43 PM), मृत्यु के प्रकार\* (अन्य), मृत्यु का कारण (सामान्य मृत्यु), मृत्यु पंजीकृत करने वाले की तिथि (12-अप्रैल-2016).
- Screen 3: मृत्यु पंजीकरण**  
List of causes of death with checkboxes: दस्त, दुर्घटना, बुखार, मलेरिया, पाचन रोग, मोटर वाहन दुर्घटनाओं, कैंसर, टी. बी., हृदय रोग, सीओपीडी, अस्थमा, सांस की अन्य, आत्महत्या, एचआईवी / एड्स, सामान्य मृत्यु (checked).
- Screen 4: मृत्यु पंजीकरण**  
Fields: मृतक का नाम\* (करण), मृत्यु का दिनांक\* (26-अप्रैल-2016), मृत्यु का समय, मृत्यु के प्रकार\* (गर्भावस्था के दौरान, प्रसव के दौरान, प्रसव पश्चात (माँ), प्रसव पश्चात (शिशु), अन्य).

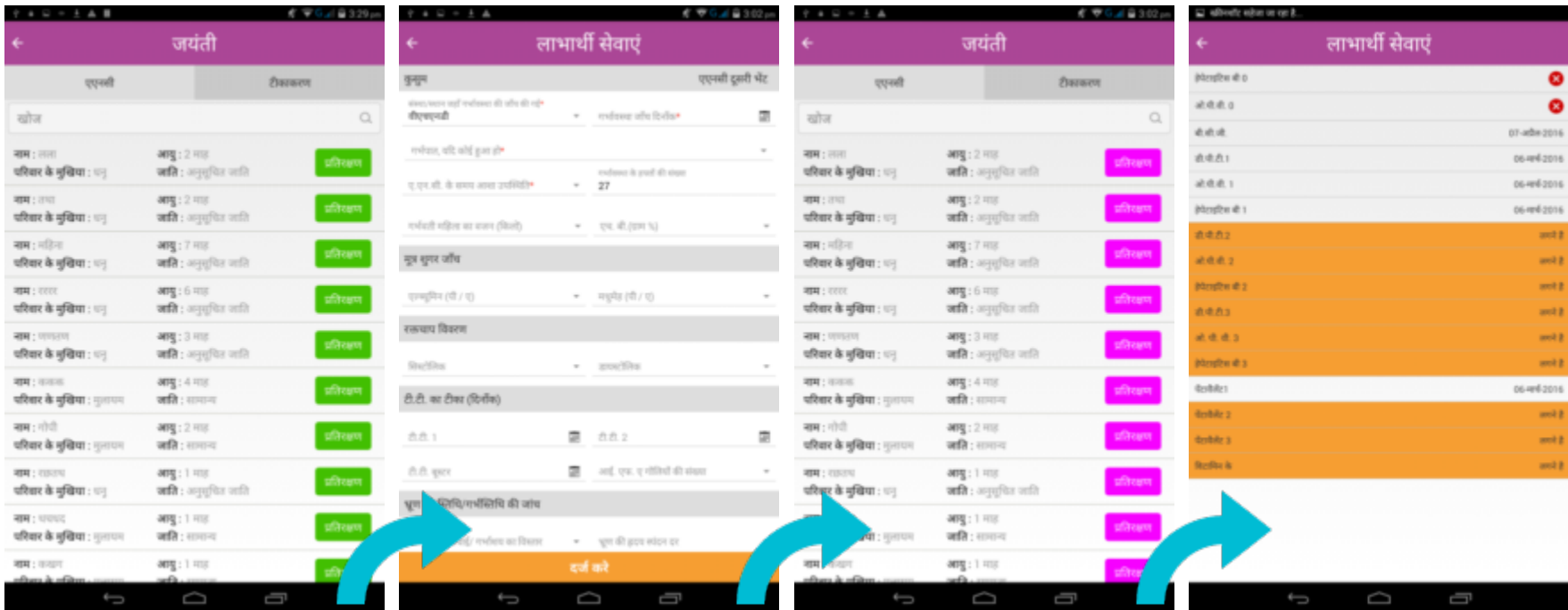
Below the screens, arrows point to labels: सुरक्षित करें, सुरक्षित करें, दर्ज करें, सुरक्षित करें.

- 👉 **Report** death of beneficiaries, and in population
- 👉 **Date, time, type** (maternal, newborn, infant), and **reasons**
- 👉 **Death registration** information



# The ANM application

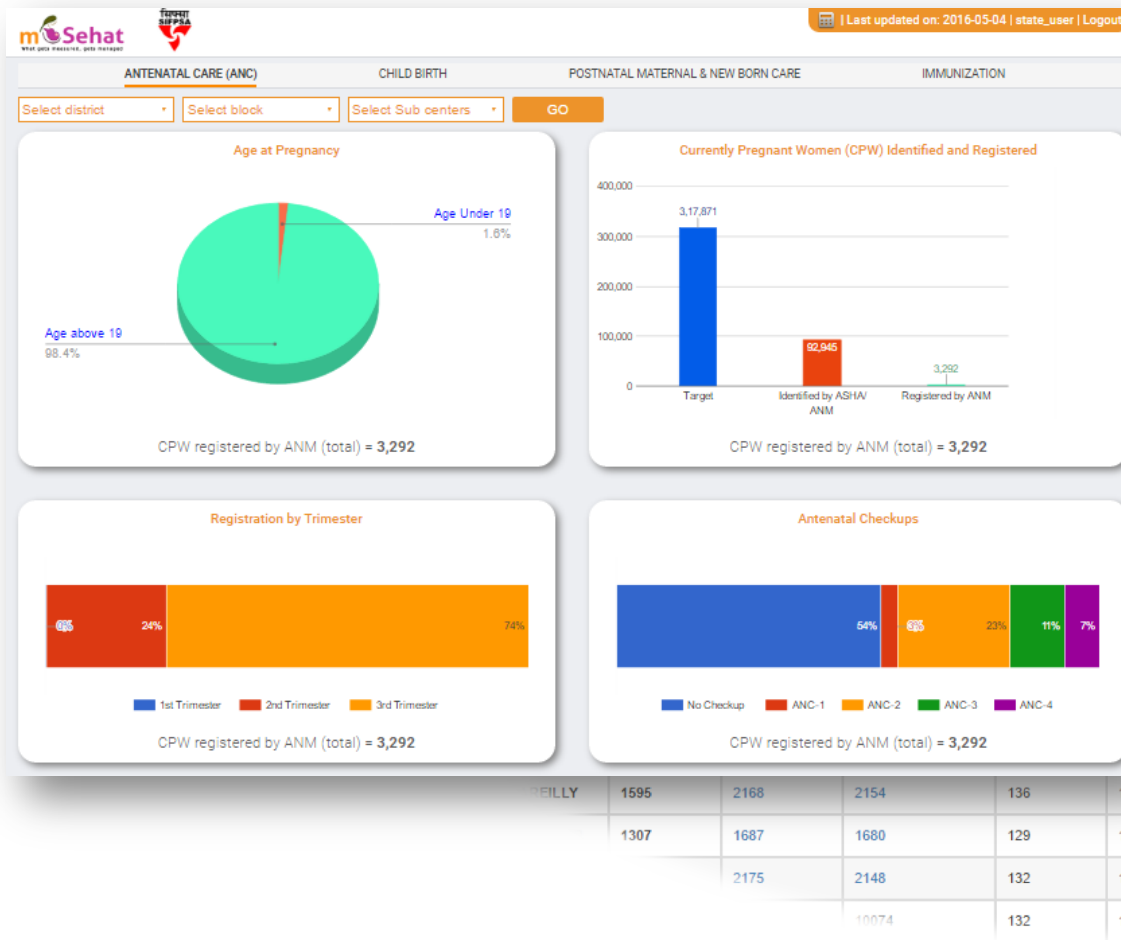
## 1 VHND service delivery



👉 VHND ANC services and Immunization

👉 View past ANC, and Immunization data

# Dashboard and Reports



[www.dashboard.msehat.org](http://www.dashboard.msehat.org)

## Summary Report

	ANMs				
ANMs >=5 Beneficiaries Go Live target(%)	ANMs required for Go Live(Nos.)	ANMs profile updated(Nos.)	ANMs >=5 Beneficiaries(Nos.)	ANMs profile updated of Go Live target(%)	ANMs average beneficiaries per ASHA of Go Live target(%)
	368	433	426	118	116
	167	191	186	114	111
	247	389	364	157	147
	266	267	265	100	100
	242	271	267	112	112
	1290	1551	1508		

**Web based. State, District, and Block level users**

**Drill down reports/graphs till ASHA/village level.**

# Key Phases

1. Build

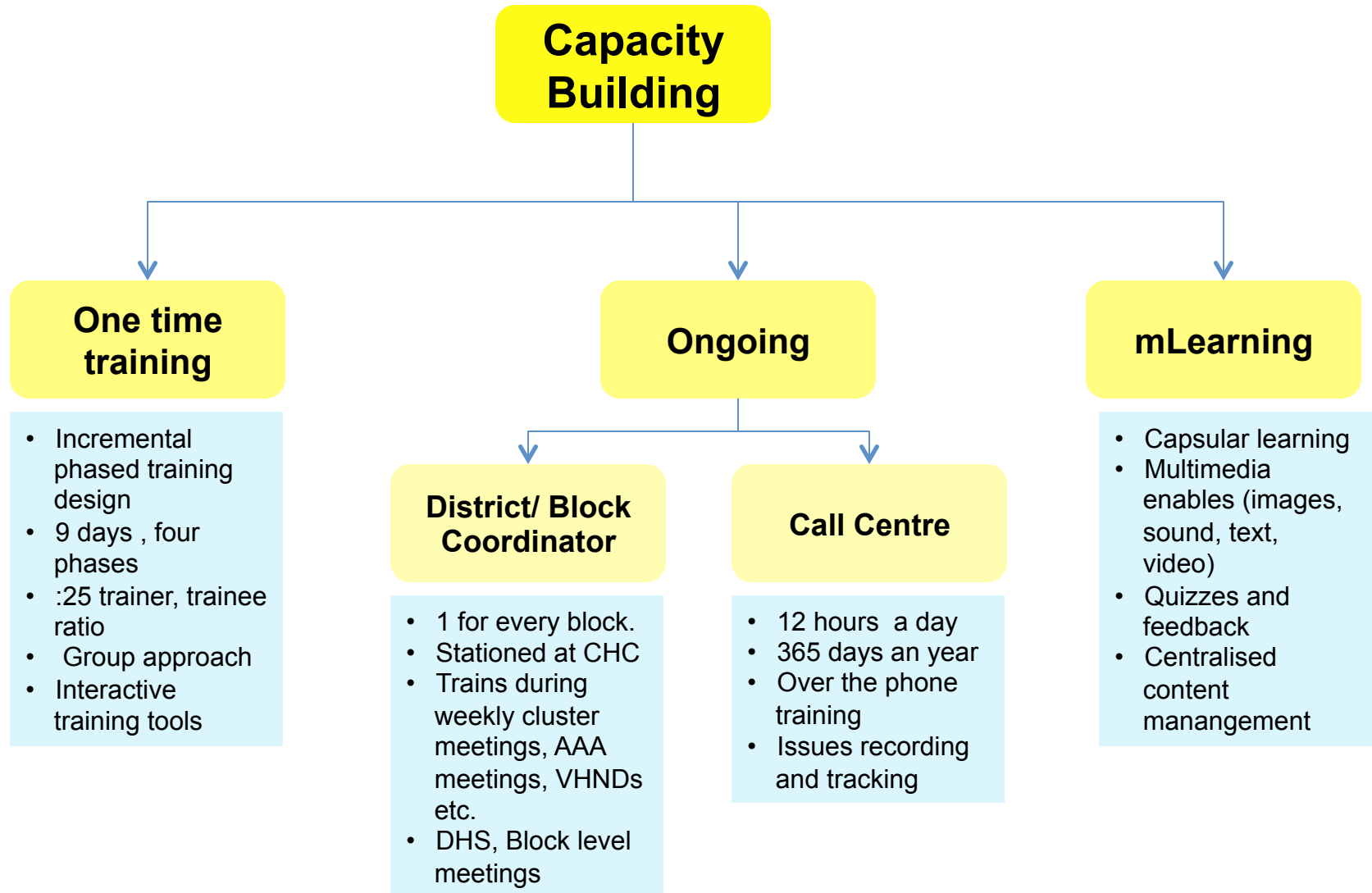
2. Train

3. Measure & Learn

4. Improve



# Train Approach



# mSehat data (as of July-2016)

 **Population**

Target (Nos.)	In mSehat (Nos.)
------------------	---------------------

**1,25,04,900**

**1,14,78,535**  
(92%)

 **+ Eligible Couple**

**19,51,351**

**18,13,532**  
(93%)

 **Currently Pregnant Women**

**2,31,140**

*Identified*  
**199,692**  
(86%)  
*Registered for ANC*  
**75,240**  
(39%)

## ANC service delivery

	ANC 1	ANC2	ANC3	ANC4
<b>Due</b>	<b>5,041</b>	<b>26,570</b>	<b>30,968</b>	<b>10,067</b>
<b>Revd</b>	<b>1,314</b>	<b>11,404</b>	<b>8,907</b>	<b>6,562</b>



**Births**

**3,01,308**

**89,695**  
(30%)

## Infant Immunization

	6 wk	10wk	14 wk	9 mth
<b>Due</b>	<b>21,244</b>	<b>11,940</b>	<b>12,179</b>	<b>32,737</b>
<b>Revd</b>	<b>25</b>	<b>1</b>	<b>7</b>	<b>0</b>



**Child (0-5 years)**

**14,92,210**

**5,78,785**  
(39%)



**Adolescents**

**25,10,111**

**25,96,917**  
(103%)

# 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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