

# Integrating Disease and Health Systems Surveillance: Possibilities of Community Health Worker Networks

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# Outline

The challenges and possibilities of “citizen surveillance”

Background on Nyaya Health and Nepal

Overview of Nyaya’s surveillance and health systems strengthening study

Data and progress

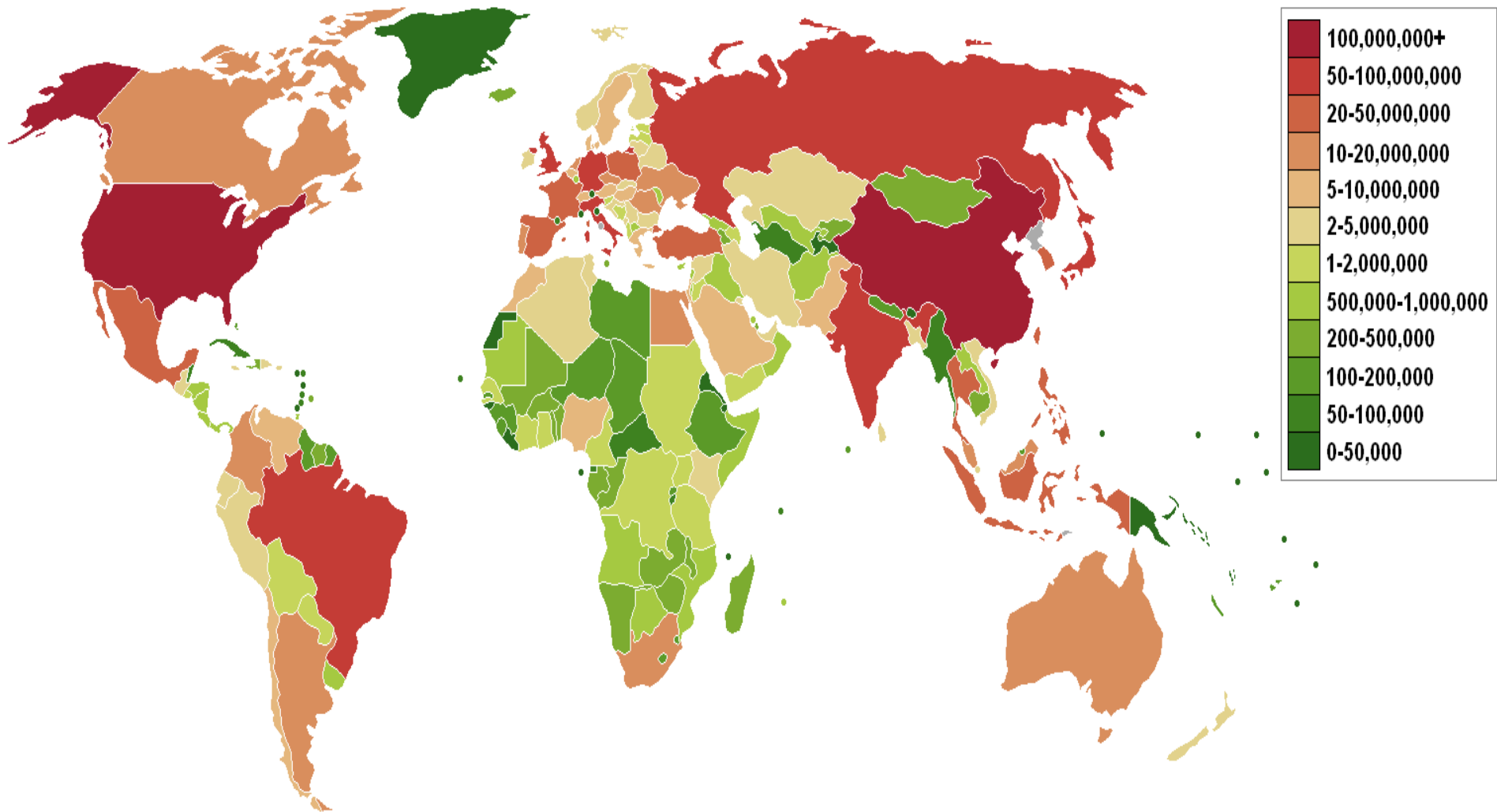
Discussion



1) Identify robust, reliable networks of real people at scale



## 2) Get them functioning mobile networks to transmit data



World mobile phone usage map



Health systems strengthening matters to surveillance;  
surveillance matters to health systems strengthening.





## District Map of Nepal









## MODEL

Partner  
With the  
Government

Build  
Durability  
Through  
Nepali Staff

Use Tools of  
Transparency



## IMPACT

150,000  
patients  
treated.

160 Nepali staff  
employed.

\$140,000 gov't  
investment (5%  
of total costs).

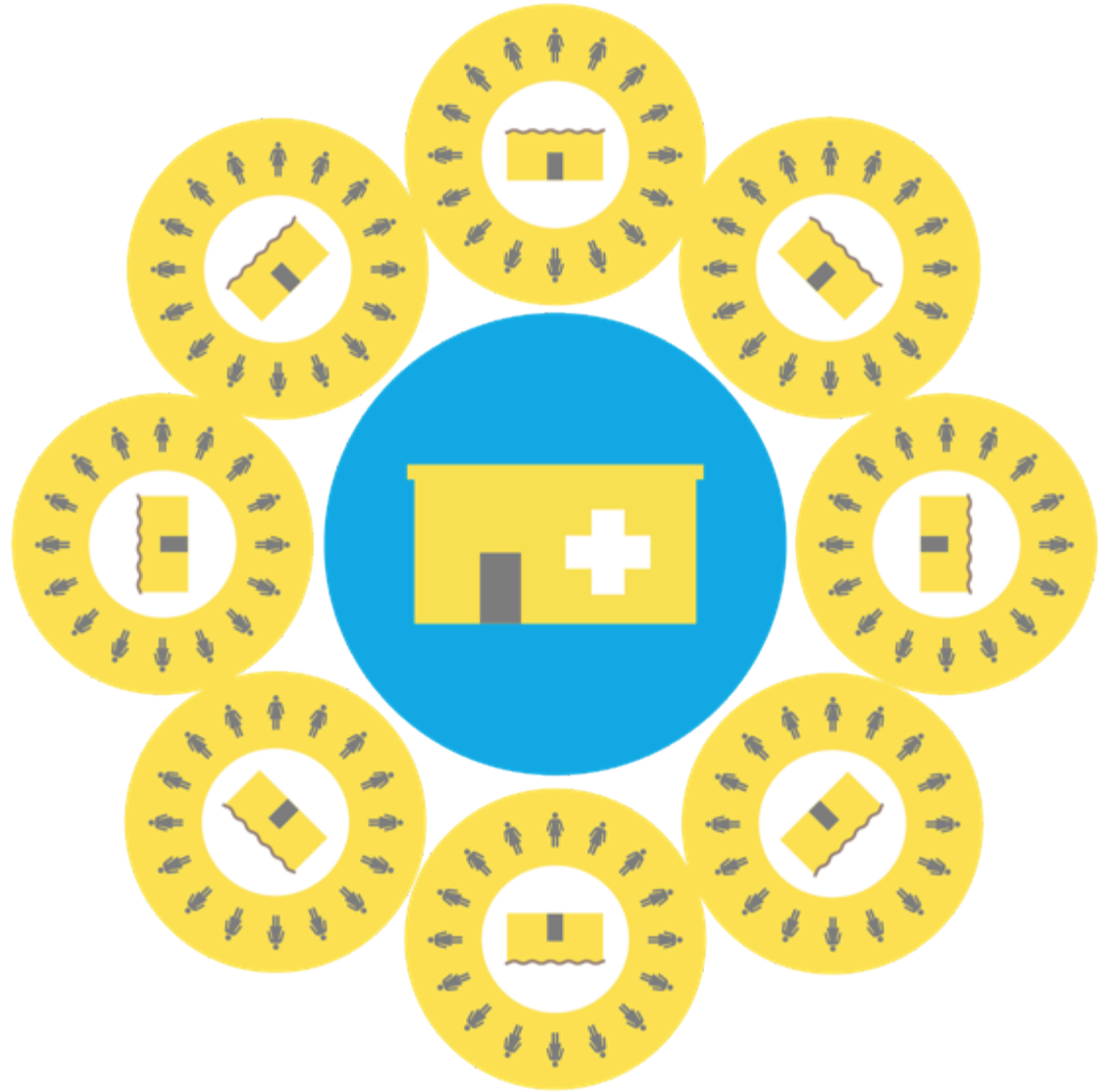


### 3 YEAR Vision

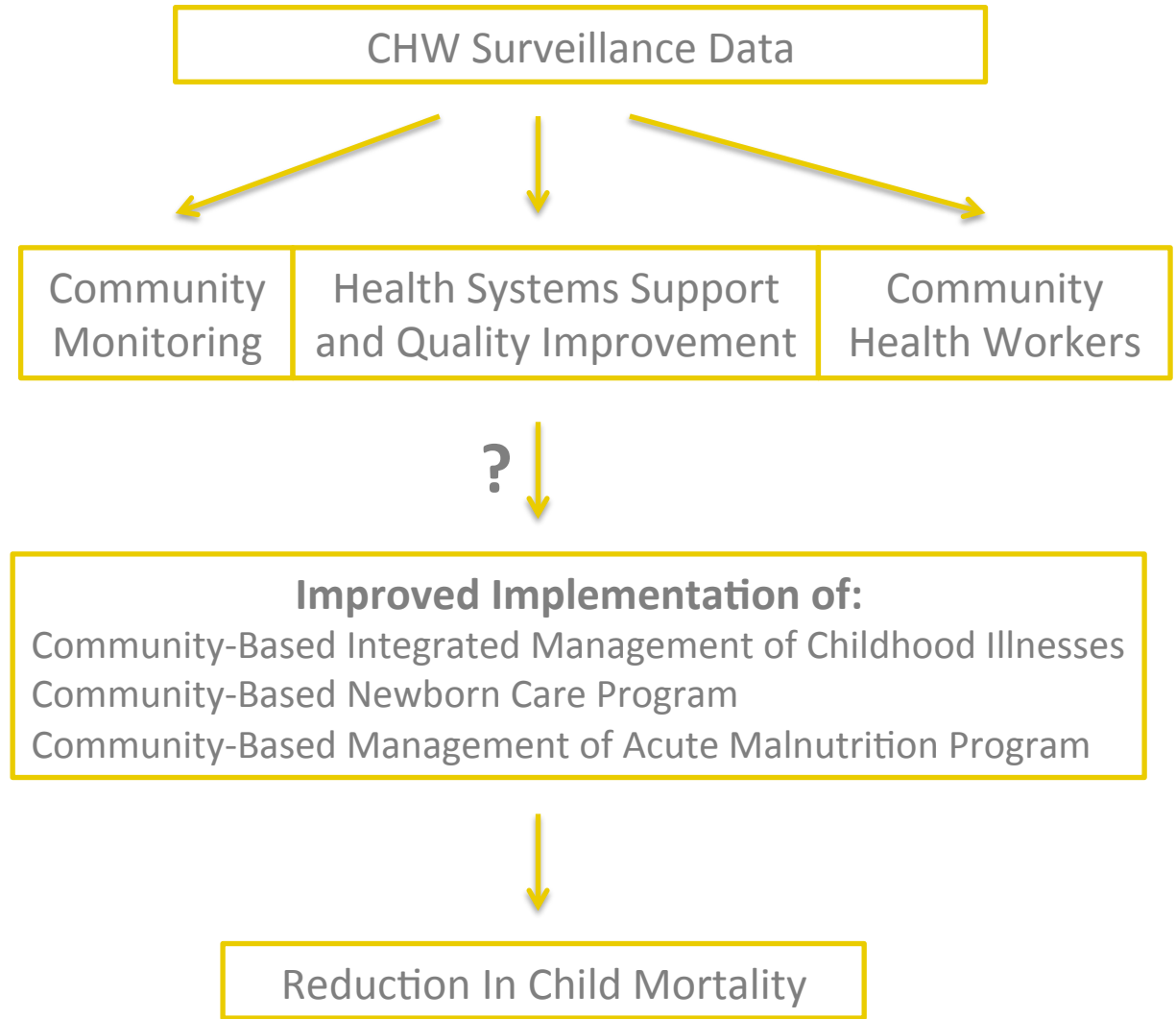
1 hospital hub.

14 clinics.

400+ community  
health workers.



RCT  
Intervention



## Outcomes

### + Primary Outcome

- + Under-five mortality

### + Secondary Outcomes

- + Institutional delivery rates

- + Pediatric primary care utilization rates

- + Provider absenteeism

- + Water and electricity availability

- + Medication stock-outs

**Specific Aim 1a:** To determine whether child health surveillance data collected on mobile phones by community health workers during the course of routine service provision correlate with temporal trends with a reference standard of data collected via serial household surveys.

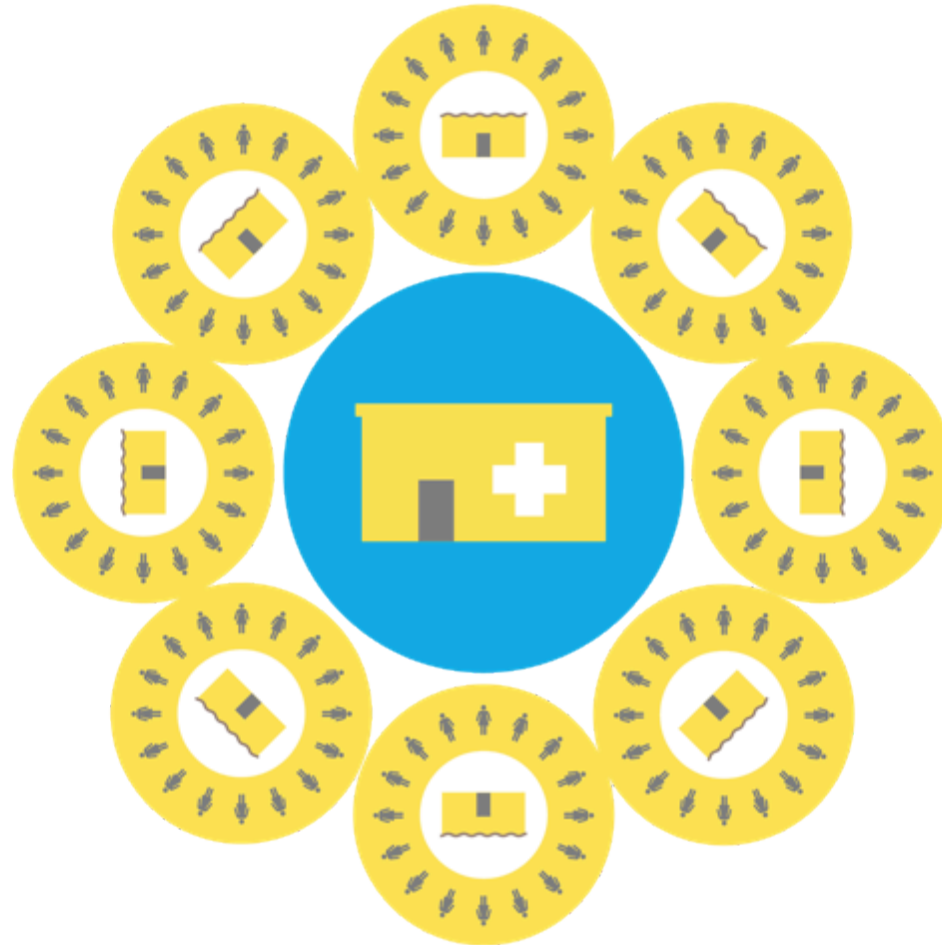




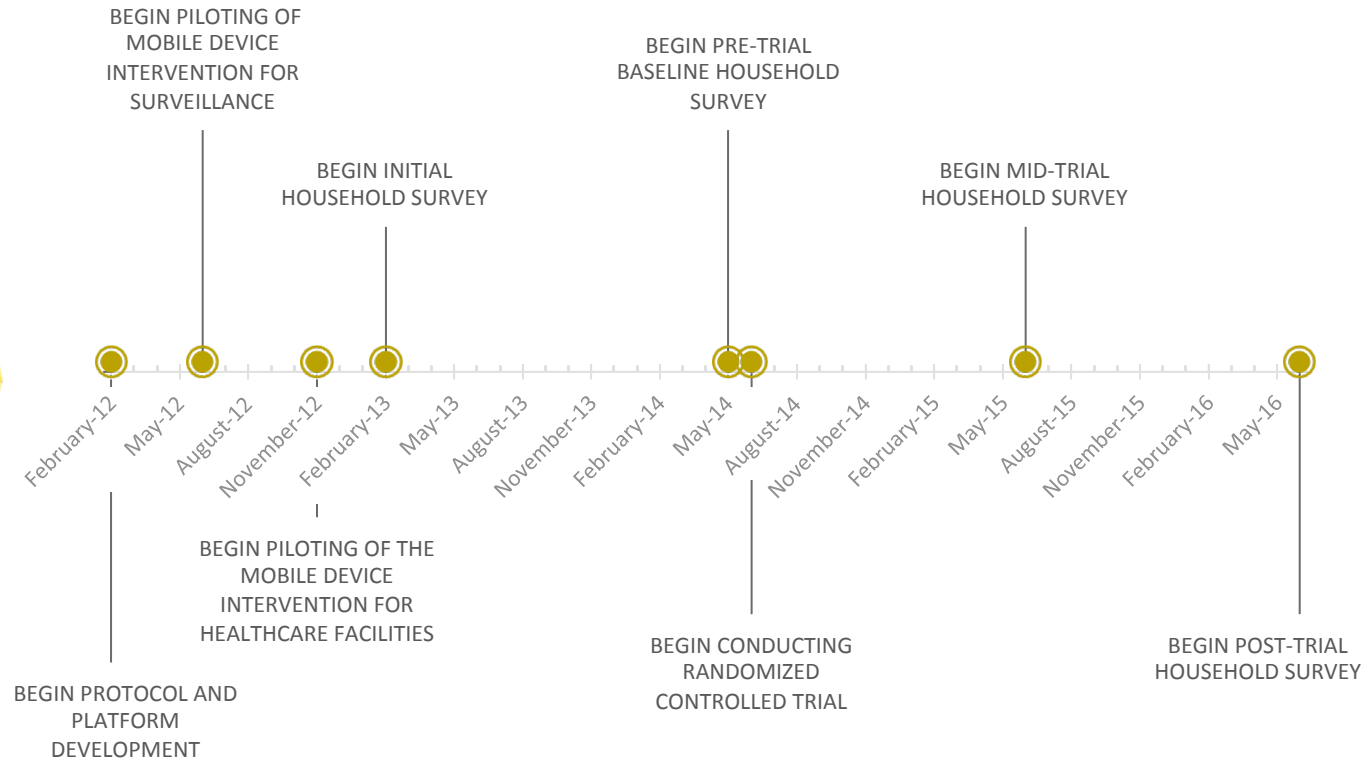
**Specific Aim 2:** To assess whether data on public sector healthcare facility performance collected via weekly mini-audits performed by community health workers are reliable and accurate in comparison with independent audits.



**Specific Aim 2:** To assess, via a randomized controlled trial, the effectiveness of a comprehensive community-based health systems strengthening intervention versus a control arm, with the primary outcome being reduction of under-five mortality.

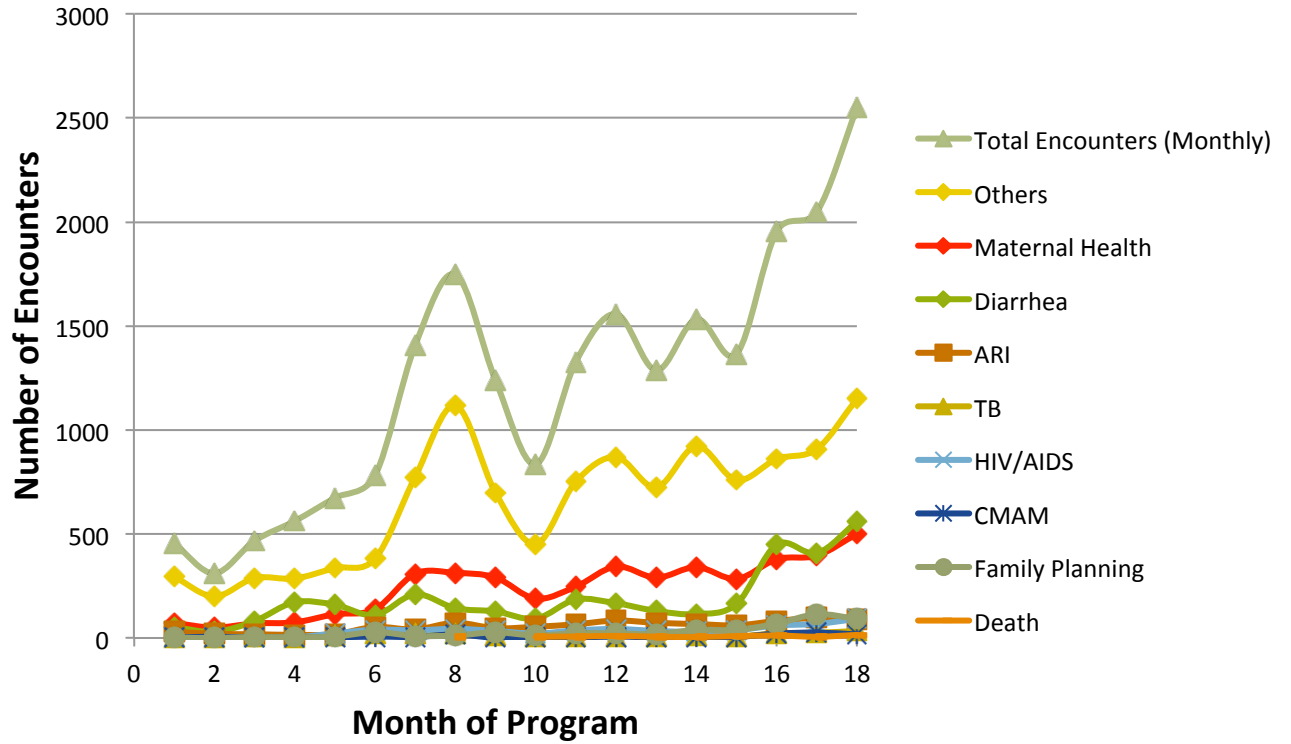


# Project Timeline



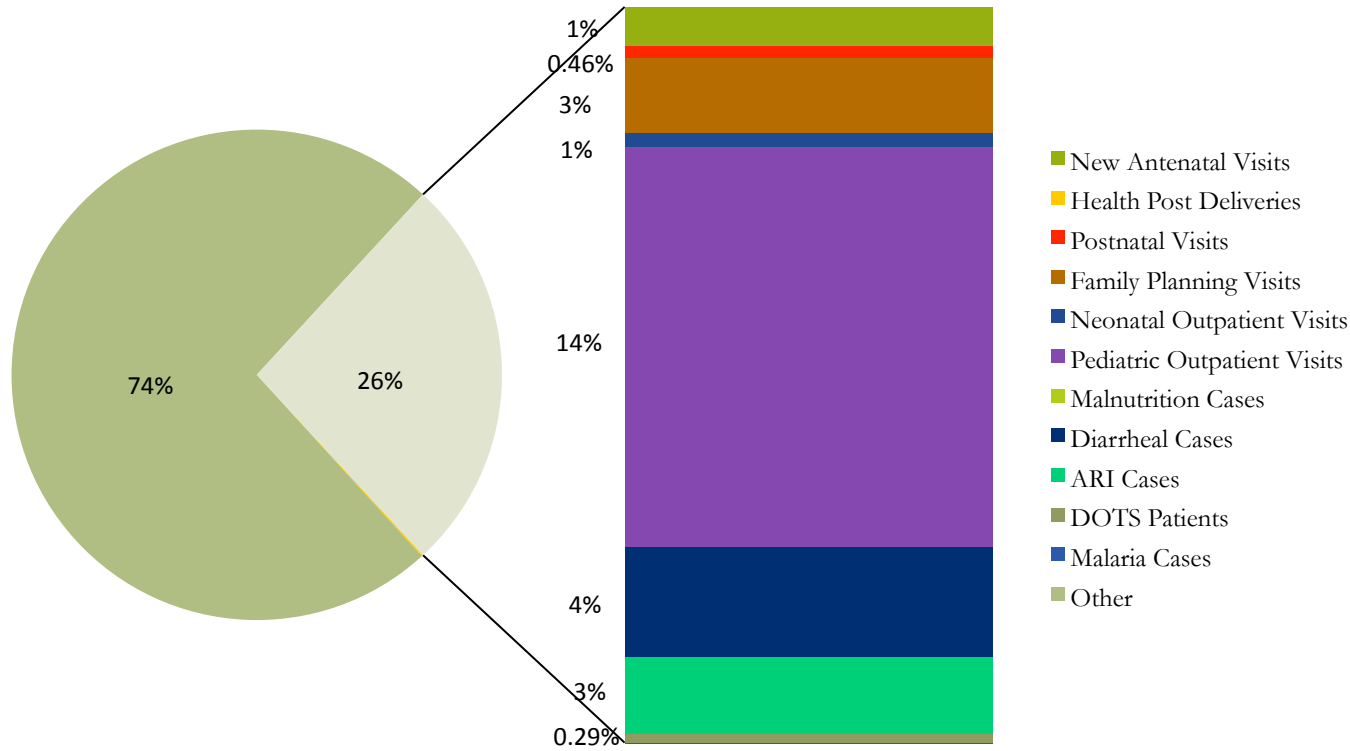
# Encounters

## Encounter Types



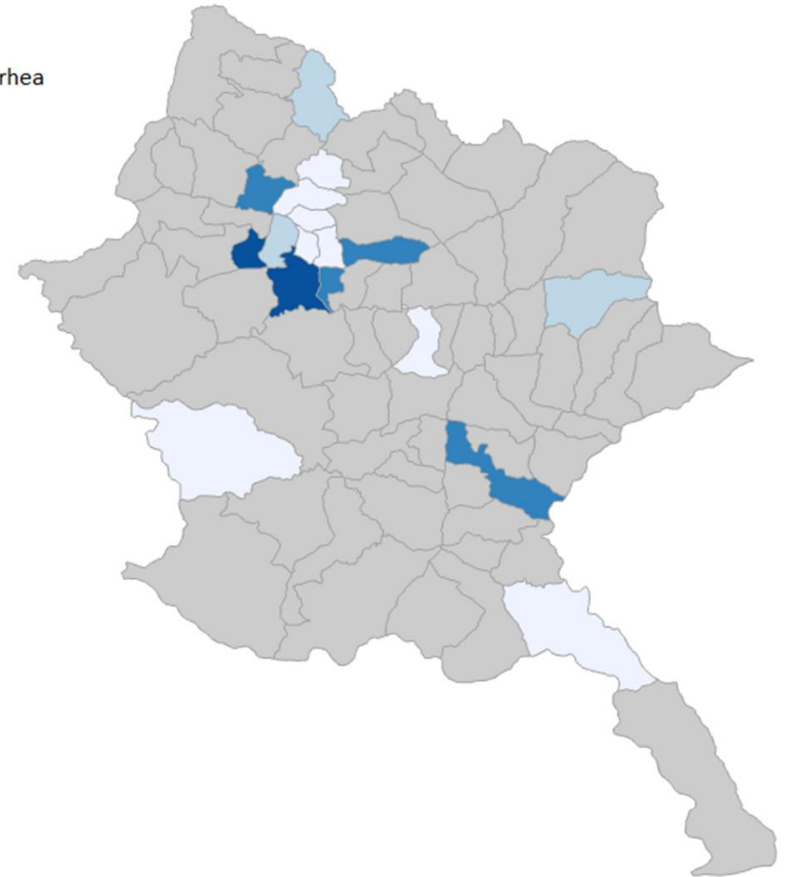
# CHW Encounter Types

Overall Patient Visits by Type - Mangsir 2069



## Example Map of Weekly Diarrhea Data by Village Development Committee

Under Five Diarrhea  
July 2012



Diarrea Maps

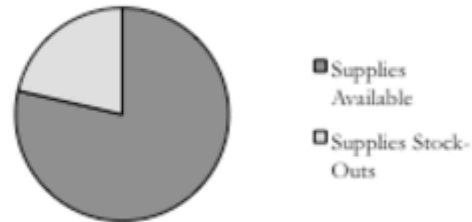
# MONTHLY HEALTH POST/SUB HEALTH POST SCORECARD

**VDC:** yaswori

**Month:** Kartik

## Facility Monitoring

### Supply Stock-Out Score



### Service Availability Score

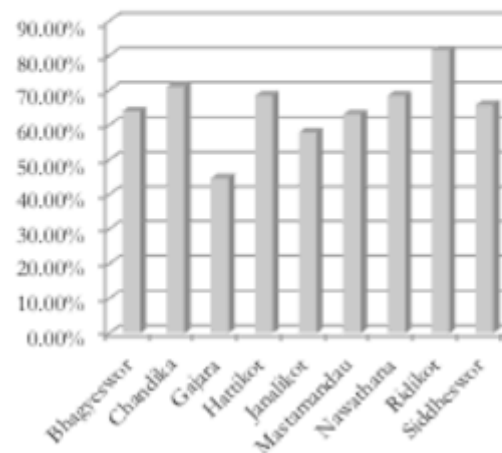


### Overall Facility Score

# 64%

STOCK-OUT		SERVICE GAP	
Intravenous Fluids		Highest Level Staff	X
Amoxicillin	X	Skilled Birth Attendant	X
Cotrimoxazole	X	Sharps Boxes	
Misoprostol	X	Sterilization Equipment	
Magnesium Sulfate		Waste Disposal	X
Depo Provera		Water	X
Oral Contraceptives		Toilet	X
Condom		Electricity	X
Zinc			
Jeval Jaal (ORS)			
Vitamin A			
Iron			
Anti-TB (DOTS) Medications			

### Overall Facility Score per VDC (%)

*(Kartik Week 4-Mangsir Week 1)*


SERVICE UTILIZATION	Total
Health Post Deliveries	0
Assisted Home Deliveries	0
New Antenatal Visits	1
Postnatal Complications	0
Neonatal Deaths	0
Maternal Deaths	0
Postnatal Visits	0
Outpatient Visits	61
Neonatal Outpatient Visits	0
Pediatric Outpatient Visits	5
Malnutrition Screenings	2
Malnutrition Cases	2
Diarrheal Cases	3
Acute Respiratory Infections	1
DOTS Patients	2
Malaria Cases	0

OUTREACH	Total
Vaccination Events Planned	0
Vaccination Events Conducted	0
Outreach Clinics Planned	0
Outreach Clinics Conducted	0

## Lessons Thus Far

- ✚ Data entry via handheld phones for CHWs is feasible, even in an area of extreme remoteness, poverty, and illiteracy
- ✚ Aggregate data is less useful for clinical teams
- ✚ Need to tie patient-level data concretely to health facilities
- ✚ Need to develop concrete ways to use data regularly
- ✚ Need to identifying strategies for feedback loops



**THANK YOU!**

 Complete Protocol:  
<http://db.tt/DesXDTKV>

 [www.nyayahealth.org](http://www.nyayahealth.org)