



Data in International Research:

Lessons from Design, Implementation & Scaling in Low and Middle Income Countries

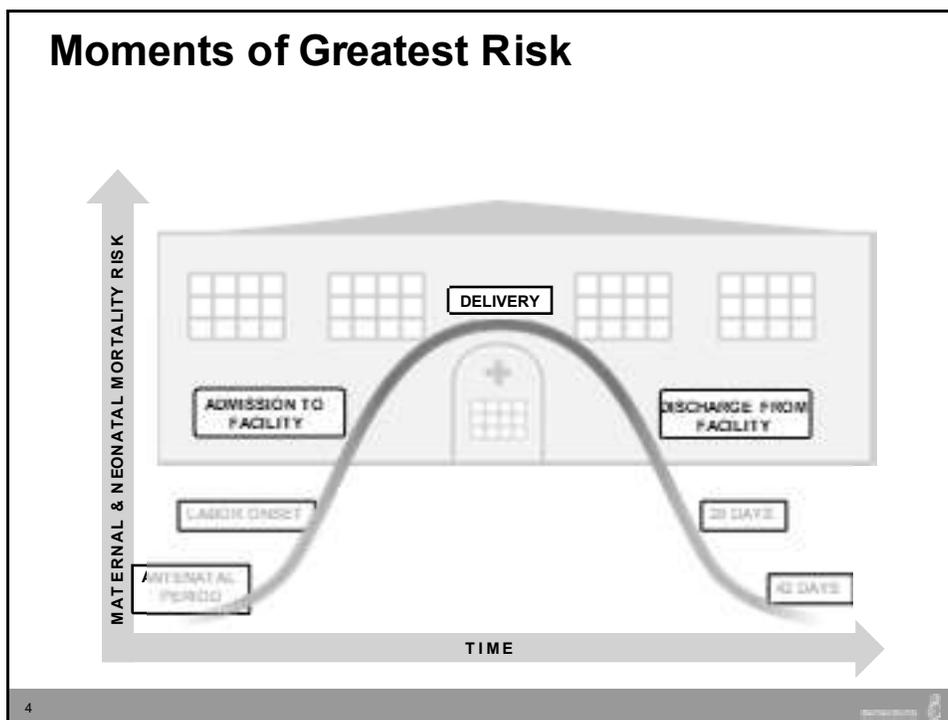
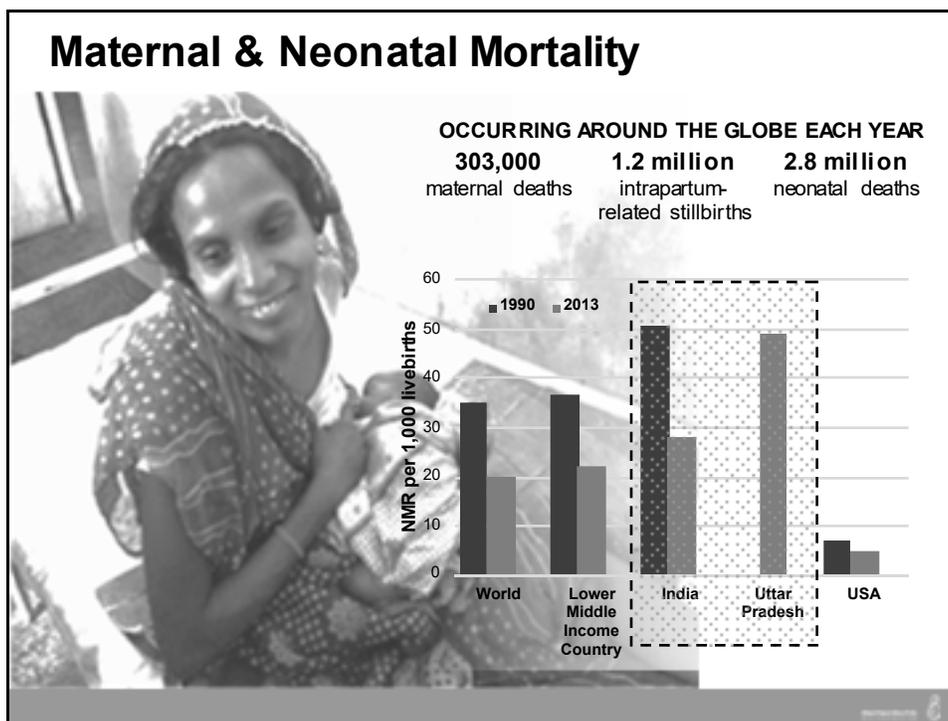
Katherine Semrau, PhD, MPH
Ariadne Labs
September 24, 2018



Roadmap

- **Content**
 - Maternal & Newborn Health
- **Collaboration**
 - Towards multi disciplinary teams
- **Connectivity**
 - Transition of paper to electronic data
- **Culture**
 - Theory to on the ground reality
- **Q&A**





Global Maternal Mortality



303,000 deaths per year

Alekema et al. Lancet. 387 (10017): 462-474.

Methods to Prevent Mortality are Known

PRENATAL

- Early referral for at-risk women
- Antibiotics for fever, ruptured membranes
- Magnesium for hypertension, proteinuria

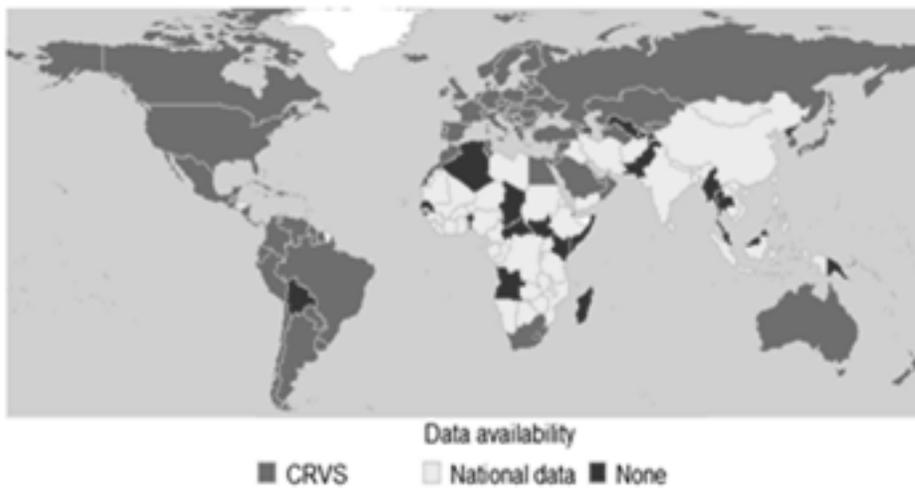
LABOR & DELIVERY

- Presence of a birth companion
- Use of handwashing and gloving
- Informing when to call for help
- Preparation of oxytocin, clean supplies, bag mask, sterile blade, suction
- Assistant at the ready
- Uterine massage and oxytocin within 1 minute

POST-PARTUM

- Skin-to-skin care post-partum
- Newborn antibiotics if high or low temperature
- Instructions on danger signs for mother and child

We Don't Change What We Don't Measure



Measurement Settings Matter





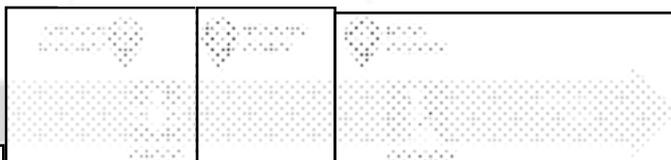
**Collaboration:
Towards Multidisciplinary Teams**

The WHO Safe Childbirth Checklist

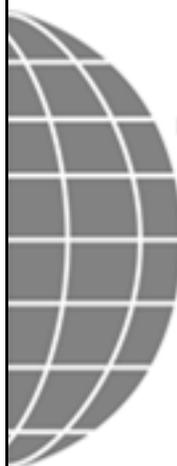
ON
ADMISSION 1

DELIVERY
PROCESS

ADMISSION



Safe Childbirth Checklist Collaboration and pilot testing



From November 2012
through March 2015
a total of **34**
GROUPS
registered projects with
the Collaboration,
representing **29**
COUNTRIES
and **234**
SITES

- Evaluations for feasibility and acceptability were completed in **nine countries**
- The WHO established the Safe Childbirth Checklist Collaborative to explore factors that influence the use of the Checklist in diverse settings around the world
- Following a successful pilot study in **Karnataka, India**, Collaborative members completed a series of implementation studies in **Rajasthan, Sri Lanka, and Bangladesh**
- Desire for RCT to provide evidence-based impact: **BetterBirth trial in Uttar Pradesh, India** finished in early 2017

The BetterBirth Trial



PARTNERS:

- Government of India
- Government of Uttar Pradesh
- World Health Organization
- Ariadne Labs: A joint center for health systems innovation of Brigham and Women's Hospital and Harvard T.H. Chan School of Public Health
- Population Services International
- Community Empowerment Lab, Lucknow
- Jawaharlal Nehru Medical College, Belgaum
- The Bill & Melinda Gates Foundation

Theory of Change



The BetterBirth Trial



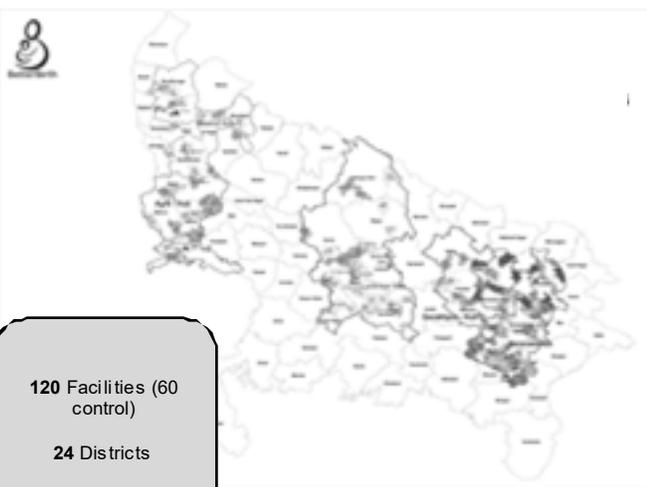
PROJECT GOAL:

The BetterBirth Trial is a matched-pair, cluster-randomized controlled trial seeking to establish whether the BetterBirth intervention is effective in reducing deaths and complications in institutional childbirth in resource-limited settings.

OUTCOMES OF INTEREST:

- Adherence to birth practices by birth attendants
- Early (7-day) maternal morbidity, mortality, & perinatal mortality

BetterBirth Trial in Uttar Pradesh, India



Nov. 2014-Dec. 2016

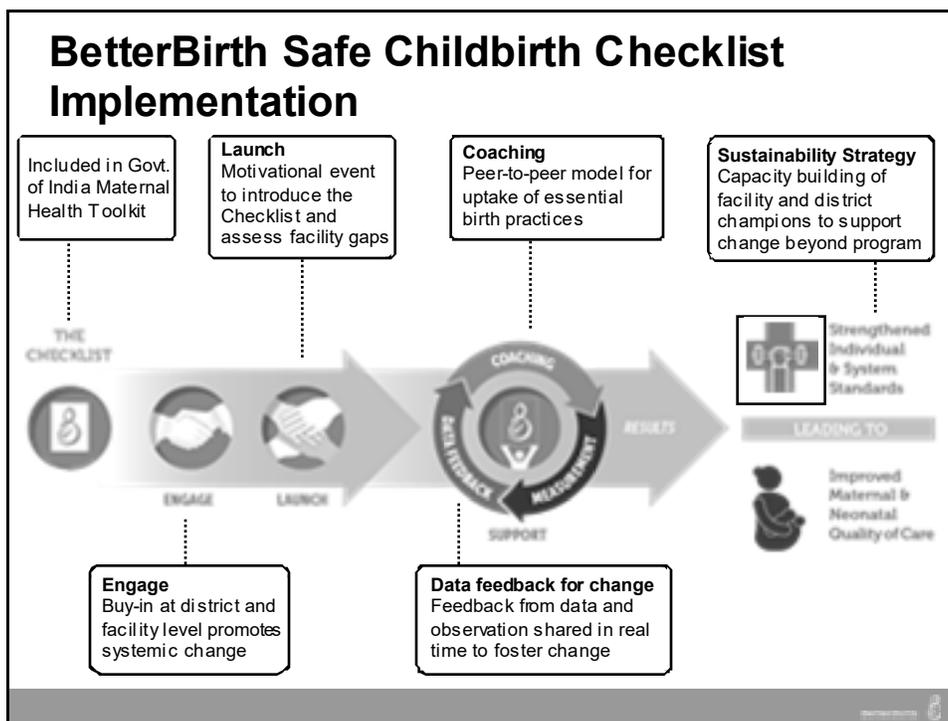
157,145 births
(mother-baby pairs)

149 maternal deaths
MMR_{7-day}: 94 per 100,000

7,445 perinatal deaths
PMR: 47 per 1,000

120 Facilities (60 control)

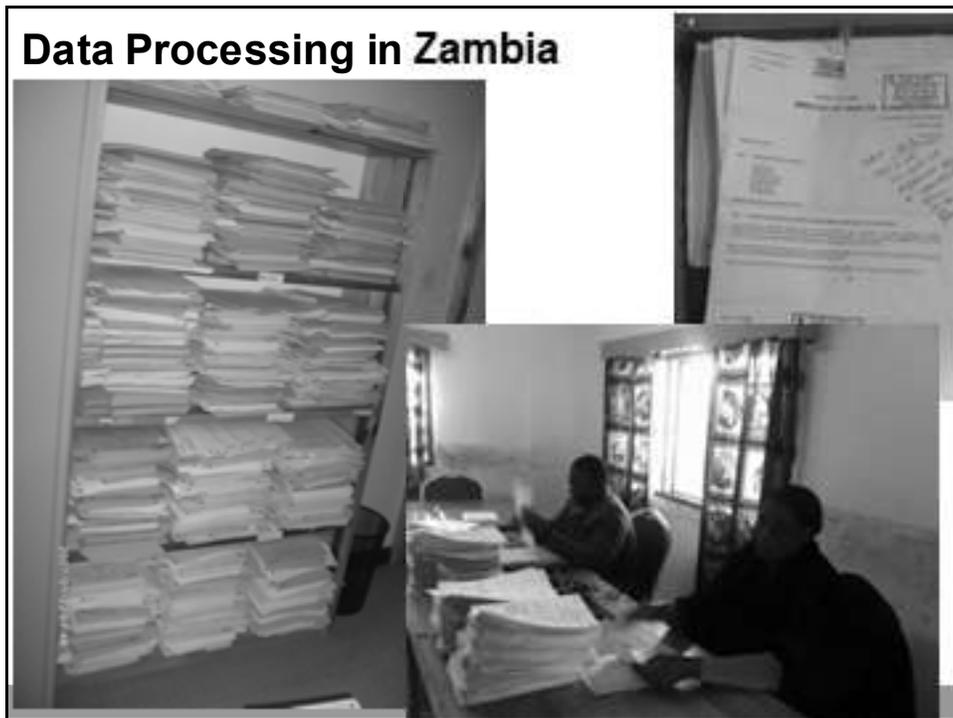
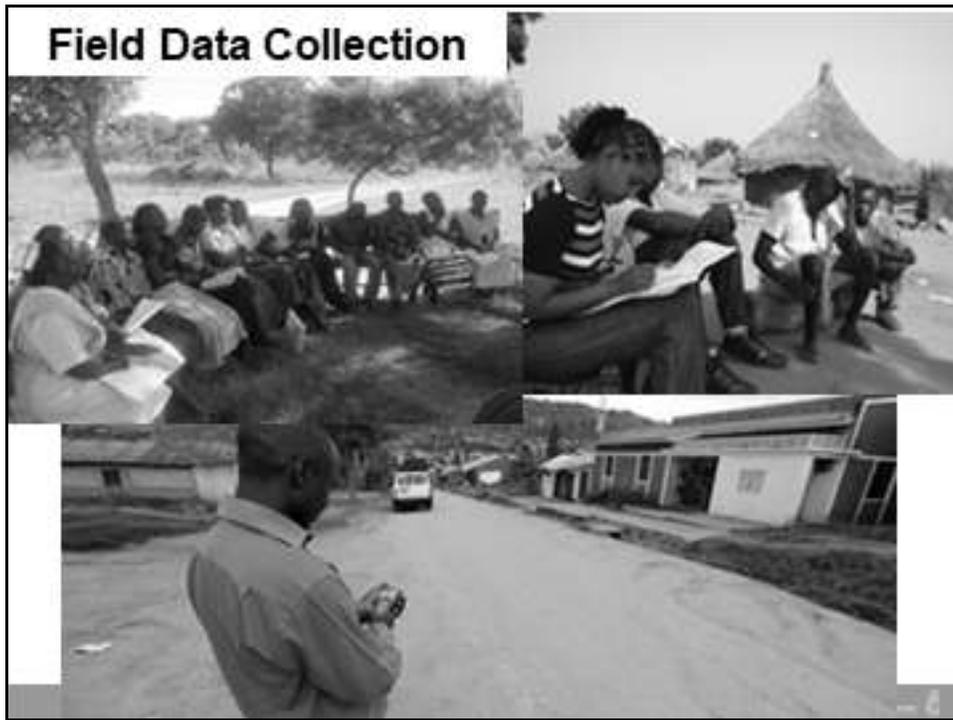
24 Districts



...and Solutions Emerge



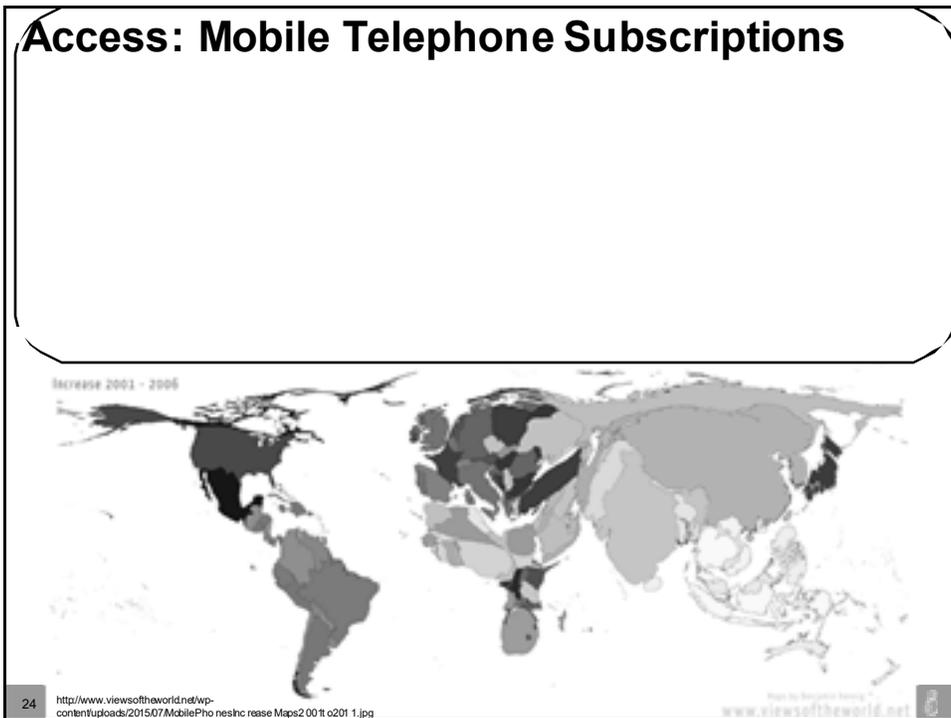
**Connectivity:
Transition from Paper to Electronic Data
Capture**



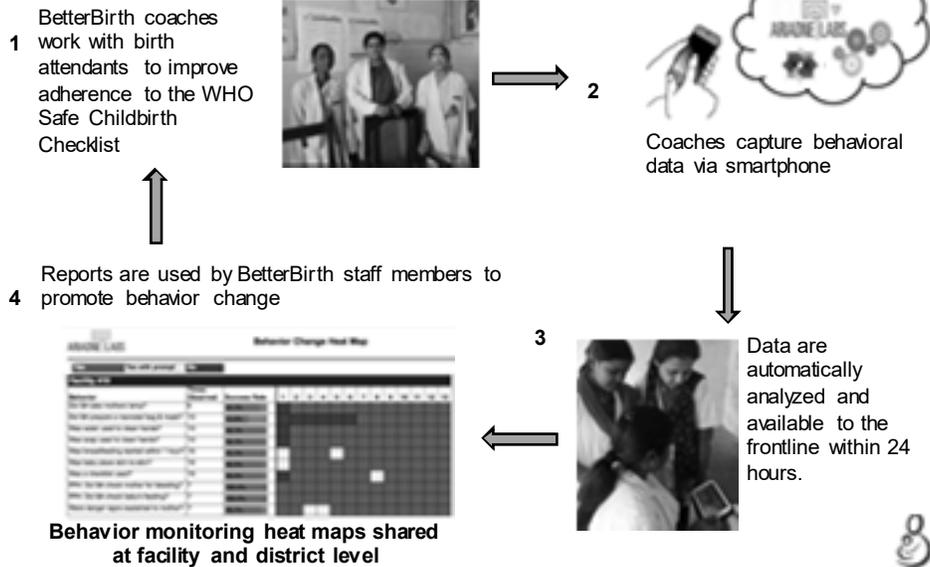
Data Storage



Access: Mobile Telephone Subscriptions



Pulse System: A Quality Improvement Data Feedback Loop



BetterBirth Intervention: Facility Level

OTIS - 28may2014-6 OTIS view

Preparing for birth: Just before Delivery

Did birth attendant prepare Oxytocin (10 units in syringe)?

Yes

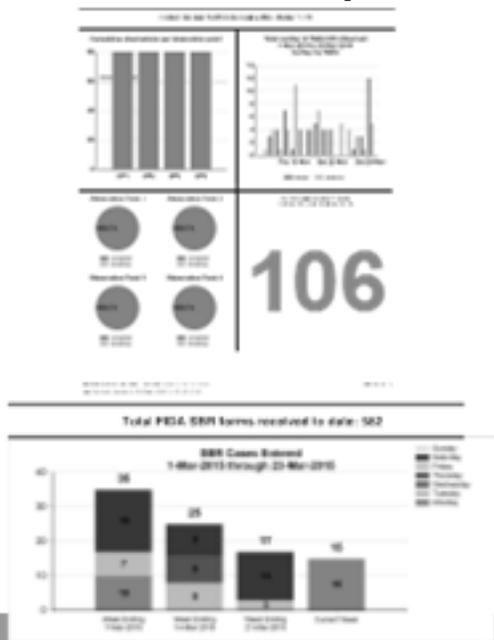
No

Comments

BA forget to give oxytocin till 50 seconds after birth of baby, then gave on prompting

BA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
BA1																								
BA2																								
BA3																								
BA4																								
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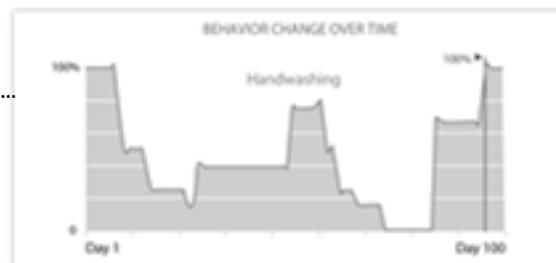
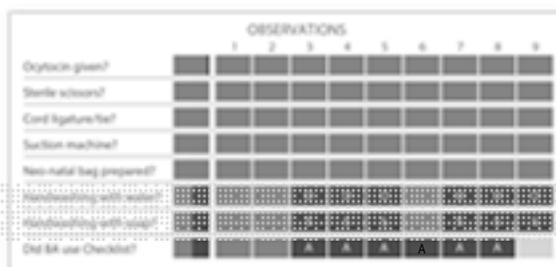
Monitoring Implementation & Follow Up

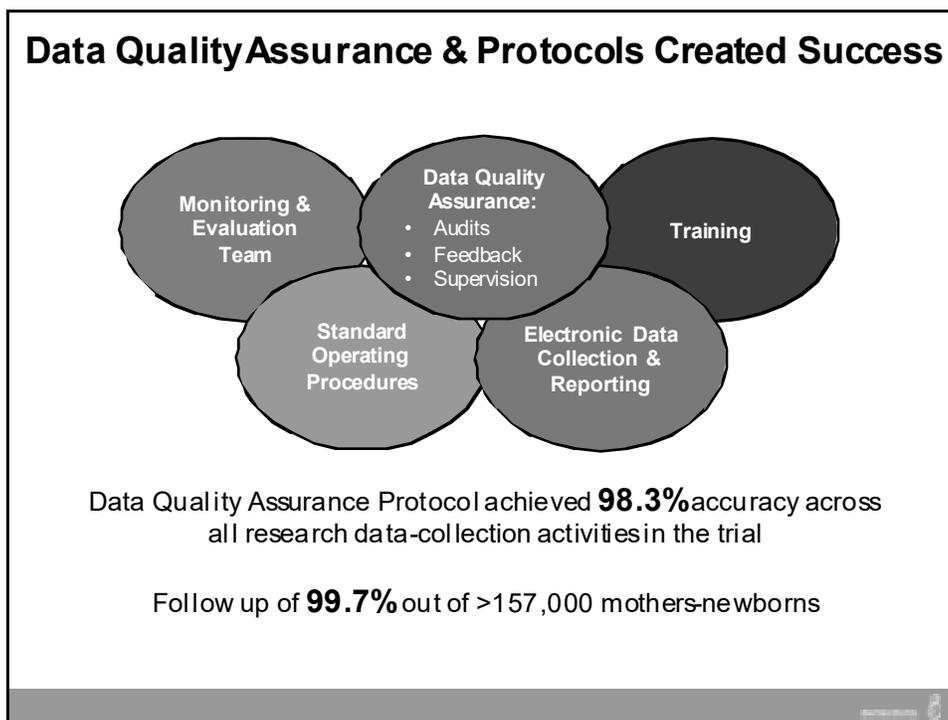
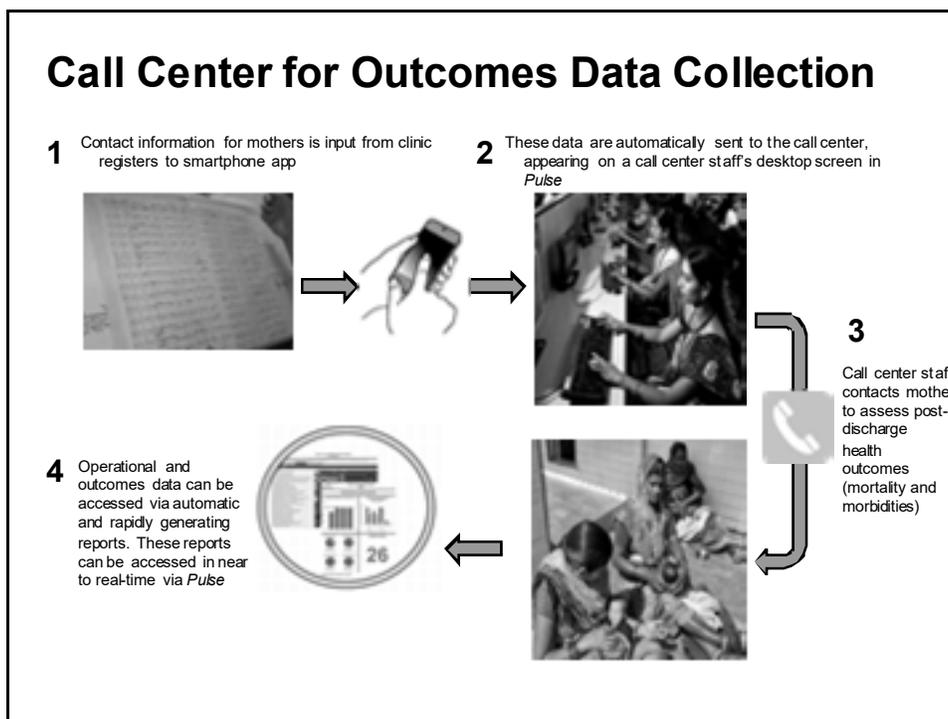


Use of Data and Reports to Influence Change

■ **The Pulse System** generates reports for use in data feedback for quality improvement.

■ When shared with **birth attendants, hospital leadership** and **district leaders**, they prompt change to improve conditions.

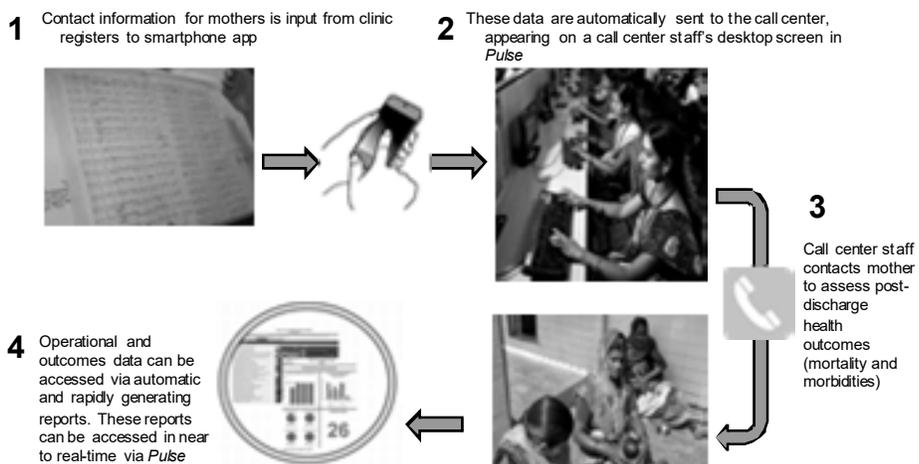




Culture: Theory to on the ground reality

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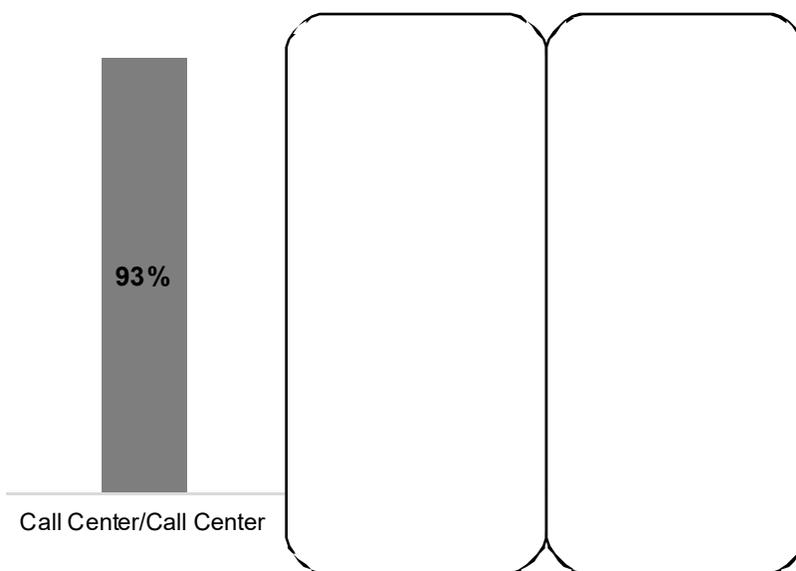
Call Center for Outcomes Data Collection



When a Call was Not Possible, Home Visits Made



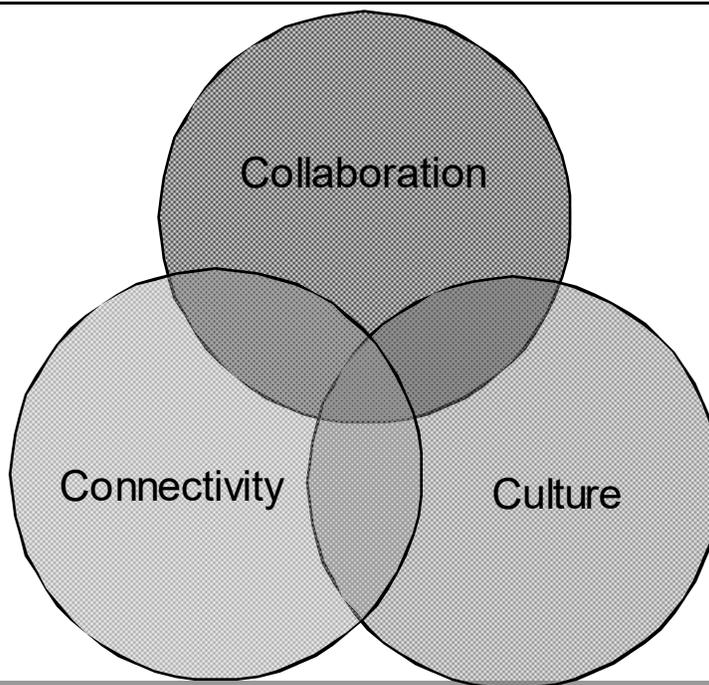
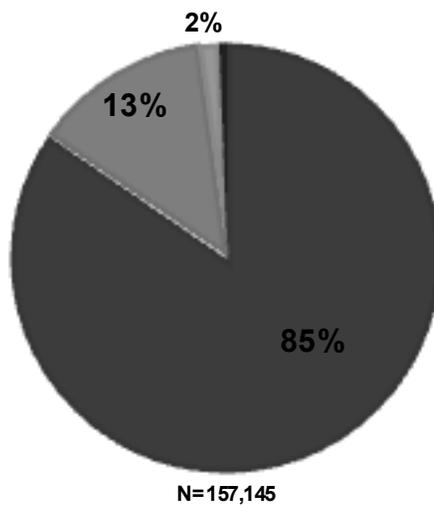
Call Center & Home Visit Consistency



Call center follow up for health outcomes



- Call Center
- Home Visit with Call
- Home Visit Only
- Lost to follow Up





Acknowledgements

Thank you to all study participants, birth attendants, women, and their newborns.

Partners:

- Government of India (GoI)
- Government of Uttar Pradesh (GoUP)
- World Health Organization (WHO)
- Population Services International (PSI)
- Community Empowerment Lab, Lucknow
- Jawaharlal Nehru Medical College, Belgaum
- The Bill and Melinda Gates Foundation
- The John D. and Catherine T. MacArthur Foundation
- Ariadne Labs at Brigham & Women's Hospital and Harvard T.H. Chan School of Public Health
- BetterBirth Scientific Advisory Board Members



Thank you and Questions!

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