The IDEAS Project: evaluating complexity in maternal and newborn health in Ethiopia, Nigeria and India

Joanna Schellenberg

12.45-2, Bennett Room,
Friday 15 November, Keppel Street, WC1E 7HT
Outline

• Background, motivation
• Objectives, research questions
• Selected methods and results
• Technical Resource Centre
• Who we are
• Highlights and challenges
IDEAS: Measurement, learning & evaluation of Bill & Melinda Gates Foundation grants in 3 countries

Society for Family Health

COMBINE

Credit: Bill & Melinda Gates Foundation

L10K

Credit: Bill & Melinda Gates Foundation

UP Community Mobilization

Sure Start

Credit: Agnes Becker

Community-based Newborn Care

MaNHEP

Credit: BMGF

Credit: Society for Family Health

North-East Nigeria

PACT

Credit: Neil Spicer

Credit: Bilal Awan

Ethiopia

Uttar Pradesh, India

Manthan

Credit: Manthan

Better Birth

Credit BMGF

Credit: Pact

Credit: Bilal Awan

Credit: Agnes Becker
Hadiza
Northeast Nigeria

Abrihet
Ethiopia

Rani
Uttar Pradesh, India

Nigeria
1 in 29
Lifetime risk of maternal mortality[1]

Ethiopia
1 in 67
Lifetime risk of maternal mortality[1]

India
1 in 170
Lifetime risk of maternal mortality[1]

Hadiza
Northeast Nigeria

Abrihet
Ethiopia

Rani
Uttar Pradesh, India

UK
1 in 4600
Lifetime risk of maternal mortality

Nigeria
1 in 29
Lifetime risk of maternal mortality[1]

Ethiopia
1 in 67
Lifetime risk of maternal mortality[1]

India
1 in 170
Lifetime risk of maternal mortality[1]

IDEAS objectives

1. To build capacity for measurement, learning & evaluation.
2. To characterise innovations.
3. To measure efforts to enhance interactions between families & frontline workers and increase the coverage of critical interventions.
4. To explore scale-up of maternal and newborn health innovations.
5. To investigate the impact on coverage and survival of maternal and newborn health innovations implemented at scale.
6. To promote best practice for policy.

Test the Bill & Melinda Gates Foundation’s maternal and newborn health Theory of Change
BMGF Maternal & Newborn Health Strategy

Theory of change

**Innovation**
Community-based approach to enhancing health, new to the context

**Interaction**
Enhanced interactions between families and frontline workers

**Intervention**
Increased coverage of life-saving interventions

**Improved maternal and newborn survival**

**Scale-up**
An innovation is increased in reach to benefit a greater number of people over a wider geographical area
An **innovation** is a approach to improve maternal and newborn health that is new to the setting.

**Evidence-based, life-saving interventions***

<table>
<thead>
<tr>
<th>Antenatal</th>
<th>Intra-partum</th>
<th>Post-natal &amp; post-partum</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tetanus toxoid</td>
<td>• Delivery attendant: hand washing with soap &amp; use of gloves</td>
<td>• Detection &amp; treatment of maternal sepsis &amp; anaemia</td>
</tr>
<tr>
<td>• Iron</td>
<td>• Prophylactic uterotonics to prevent post-partum haemorrhage</td>
<td>• Clean cord care</td>
</tr>
<tr>
<td>• Syphilis prevention</td>
<td>• Active management of third stage of labour</td>
<td>• Chlorhexidine on cord</td>
</tr>
<tr>
<td></td>
<td>• Caesarean sections</td>
<td>• Thermal care</td>
</tr>
</tbody>
</table>

*Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health. PMNCH & Aga Khan University, 2011
Question 1: What are the innovations?

Innovation
Community-based approach to enhancing health, new to the context

Question 2: Do innovations enhance interactions and increase life-saving intervention coverage? If so, how?

Interaction
Enhanced interactions between families and frontline workers

Intervention
Increased coverage of life-saving interventions

Question 3: How and why does scale-up happen?

Scale-up
An innovation is increased in reach to benefit a greater number of people over a wider geographical area

Question 4: To what extent do scaled-up innovations affect coverage of life-saving interventions and survival?

Improved maternal and newborn survival

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IDEAS
London School of Hygiene & Tropical Medicine
Q1 What are the innovations?

Call Centre
Society for Family Health

HEW training and supervision
Last 10 Kilometers

Safe Childbirth Checklist
Better Birth

Local Government Areas, Gombe & Adamawa state, North-East Nigeria

Zones, Ethiopia

Districts, Uttar Pradesh, India
Characterising grantee innovations

Types of innovation

Demand
- Individual Awareness-raising and Behaviour Change
- Community Mobilisation

Supply
- FLW Capacity-Strengthening
- FLW Motivation
- Job-aids to Enhance Provision
- Infrastructure Development
- Operational Enhancement

Questions linking to the Theory of Change
1. What are the types of innovation?
2. What are the innovations?
3. How do the innovations enhance frontline worker interactions?
4. What kind of enhancement?
5. What is the geographic scope and timing?
## Foundation MNH innovations, by geography and project

<table>
<thead>
<tr>
<th>Innovation type</th>
<th>Nigeria</th>
<th>Ethiopia</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demand</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual awareness raising / beh change</td>
<td>Forum of Mothers-in-Law; Advocacy for men; Mass media event</td>
<td>Family conversations</td>
<td>BCC strategy; Family meetings/ Community gatherings.</td>
</tr>
<tr>
<td>Community Mobilisation</td>
<td>Forum of Mothers-in-Law</td>
<td>PCQI; Community Solutions Fund</td>
<td>Performance monitoring; Family meetings/ Com gatherings</td>
</tr>
<tr>
<td><strong>Supply</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLW Capacity-Strengthen’g</td>
<td>Skilled TBA/PARE deployment; Skilled FOMWAN/EYN deployment.</td>
<td>HEW training and supervision; HDA training.</td>
<td>MNH Care Package.</td>
</tr>
<tr>
<td>FLW Motivation</td>
<td>Financial Incentives for FLW.</td>
<td>Anchors; NFI for HDA</td>
<td>HEW training.</td>
</tr>
<tr>
<td>Job-aids to Enhance Provision</td>
<td>FLWs’ Toolkit</td>
<td>HEW and HDA Toolkit; Family Health Card</td>
<td>MNH care package.</td>
</tr>
<tr>
<td>Infrastructure Development</td>
<td>Call Centre; Emergency Transport Scheme; Upgrade PHC facilities.</td>
<td>Build and support a TBA Forum</td>
<td></td>
</tr>
<tr>
<td>Operational Enhancement</td>
<td>Mapping; Links with pastoralist / remote communities; CDK supplies through PPMV.</td>
<td>Planning for Institutional Strengthening ; Capacity development for Frontline Org’ns; MNCH value network; Enhanced collaboration - CSOs and Government</td>
<td>Anchors; Improved referral linkages; CBDDM; PCQI. Family Health Card</td>
</tr>
</tbody>
</table>
Pathway analysis: community-level neonatal sepsis management in Ethiopia (provisional)

Community sepsis management initiated in 6 zones for CBNC

Sepsis-treatment drugs procured and distributed

Training in sepsis management

Sepsis case identification

Neonatal sepsis treatment at the community level

Intended impact: Reduced neonatal mortality

Q1 What are the innovations?
What are the innovations?

- Community sepsis management initiated in 6 zones for CBNC
- Sepsis-treatment drugs procured and distributed
- Training in sepsis management
- Sepsis case identification
- Neonatal sepsis treatment at the community level

Guide:
- FMOH / RHB / ZHD / Woredas
- Input
- Process

UNICEF/ELMA/USAID funding
FMHACA registers sepsis-treatment drugs, facilitates importation
UNICEF & partners support the procurement and distribution of drugs (or WHO)
HCs supply drugs to HPs re-supply on request
PFSA supplies drugs to HCs (or WHO)

FMOH Policy, strategy, guidance and implementation directions to regions and partners (Leadership/Governance)
FMOH, RHBs/ZHDs mobilizes resources

Woredas conduct training at PHCU level Process)

Partners support FMOH with training materials
FMOH, RHB/ZHD coordinate training

Intended impact:
- Reduced neonatal mortality

Supportive supervision including review meetings and clinical mentoring
Supportive supervision incl. PRCOMM for HEWs, supervision of HDAs
HDAs identify sick neonates
HDAs notify HEWs about sick neonates
HEWs identify sick neonates, refer to HC when possible
HCs refer sepsis cases back down to HP when necessary
HDAs support caretaker in treatment compliance and home management of sick neonates
HEWs deliver quality sepsis treatment (treat appropriately / ensure compliance)
Q1: What are the innovations?

- Community sepsis management initiated in 6 zones for CBNC
- Sepsis-treatment drugs procured and distributed
- Training in sepsis management
  - Partners support FMOH with training materials
- Sepsis case identification
  - HDAs identify sick neonates
  - HDAs notify HEWs about sick neonates
  - HEWs identify sick neonates, refer to HC when possible
  - HEWs deliver quality sepsis treatment (treat appropriately / ensure compliance)
- Neonatal sepsis treatment at the community level
  - HDAs and HEWs improve care-seeking and mobilize community
  - HDAs refer sick newborns to facilities
  - HDAs support caretaker in treatment compliance and home management of sick neonates
  - HEWs deliver quality sepsis treatment (treat appropriately / ensure compliance)
  - Supportive supervision including review meetings and clinical mentoring

Intended impact: Reduced neonatal mortality
Comment

• Reveals gaps in funding, lack of integration, commonalities ... 
• Pathways and process evaluations
  – Theory of change for each innovation
  – Monitoring data central
  – Basis for developing implementation strength measure
Q2 Do innovations enhance interactions and increase life-saving intervention coverage? If so, how?

**Innovation**
Community-based approach to enhancing health, new to the context

**Interaction**
Enhanced interactions between families and frontline workers

**Intervention**
Increased coverage of life-saving interventions

**Improved maternal and newborn survival**

**Scale-up**
An innovation is increased in reach to benefit a greater number of people over a wider geographical area
Q2 Do innovations enhance interactions and increase life-saving intervention coverage? If so, how?

- How do enhanced interactions lead to an increase in critical interventions?
  - Qualitative work, 2014

- Cost-effectiveness
  - Economic modelling

- Surveys of households, frontline workers and health facilities.
- Before & after, intervention & comparison areas.
- Tracking contextual factors.
- Baseline 2012, endline 2014+
Interactions & coverage study area: Uttar Pradesh, India

BASELINE SURVEY (Nov 2012)

- 80 clusters
- 5258 households
- 604 women with recent birth
- 62 Skilled birth attendants
- 155 Unskilled attendants
- 60 Primary health facilities

Uttar Pradesh, 2010:

- MMR: 440/100,000
- NMR: 45/1,000
Interactions & coverage study area: Gombe State, Nigeria

BASELINE SURVEY (June 2012)

- 40 clusters
- 1868 households
- 349 women with recent birth
- 20 Skilled birth attendants
- 41 Unskilled attendants
- 25 Primary health facilities

Nigeria, 2010:
- MMR: 840/100,000
- NMR: 39/1,000
Interactions & coverage study area: Ethiopia

BASELINE SURVEY (June 2012)

80 clusters
4294 households
533 women with recent birth
77 Skilled birth attendants
239 Unskilled attendants
81 Primary health facilities

Ethiopia, 2010:
MMR: 470/100,000
NMR: 35/1,000
## Frequency of interactions

**Women with a birth in last 12 months**

<table>
<thead>
<tr>
<th></th>
<th>NE Nigeria N=348</th>
<th>Ethiopia N=277</th>
<th>UP N=308</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (95% CI)</td>
<td>% (95% CI)</td>
<td>% (95% CI)</td>
</tr>
<tr>
<td>1</td>
<td>Women who had at least one antenatal care visit with a skilled provider</td>
<td>35% (26-43)</td>
<td>32% (22-45)</td>
</tr>
<tr>
<td>2</td>
<td>Women who had at least 4 pregnancy care interactions (any provider)</td>
<td>40% (30-51)</td>
<td>22% (14-33)</td>
</tr>
<tr>
<td>3</td>
<td>Facility deliveries (public or private health centre or hospital)</td>
<td>30% (20-40)</td>
<td>15% (8-24)</td>
</tr>
<tr>
<td>4</td>
<td>Births attended by a skilled attendant (Doctor/nurse/midwife)</td>
<td>22% (14-29)</td>
<td>16% (10-26)</td>
</tr>
<tr>
<td>5</td>
<td>Women had ≥ 1 post-partum check within 2 days of birth</td>
<td>7% (4-9)</td>
<td>4% (2-7)</td>
</tr>
<tr>
<td>6</td>
<td>Newborns had ≥ 1 post-natal check within 2 days of birth</td>
<td>4% (2-7)</td>
<td>4% (2-7)</td>
</tr>
</tbody>
</table>
**Post-natal care processes**: reported content of care amongst newborns who had at least one post-natal contact within 48 hours of birth

<table>
<thead>
<tr>
<th>Care Process</th>
<th>NE Nigeria (N=14)</th>
<th>Ethiopia (N=10)</th>
<th>UP (N=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight checked</td>
<td>% (95% CI)</td>
<td>% (95% CI)</td>
<td>% (95% CI)</td>
</tr>
<tr>
<td>1 Weight checked</td>
<td>14 (3-52)</td>
<td>20 (6-52)</td>
<td>38 (21-57)</td>
</tr>
<tr>
<td>2 Cord checked</td>
<td>29 (11-55)</td>
<td>70 (35-91)</td>
<td>55 (39-71)</td>
</tr>
<tr>
<td>3 Body examined for danger signs</td>
<td>29 (11-55)</td>
<td>20 (6-52)</td>
<td>11 (5-20)</td>
</tr>
<tr>
<td>Caregiver counselled:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Thermal care</td>
<td>0</td>
<td>20 (5-57)</td>
<td>7 (3-17)</td>
</tr>
<tr>
<td>5 Breastfeeding</td>
<td>21 (6-53)</td>
<td>70 (35-91)</td>
<td>63 (48-75)</td>
</tr>
</tbody>
</table>

Do innovations enhance interactions and increase life-saving intervention coverage? If so, how?
### Coverage of live-saving interventions: newborn

Women with a birth in last 12 months

<table>
<thead>
<tr>
<th>Clean cord care</th>
<th>NE Nigeria N=349</th>
<th>Ethiopia N=277</th>
<th>UP N=308</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting using a new blade</td>
<td>77% (70-83)</td>
<td>79% (70-85)</td>
<td>92% (86-95)</td>
</tr>
<tr>
<td>Tying cord with new or boiled string*</td>
<td>61% (51-70)</td>
<td>75% (67-81)</td>
<td>99% (95-100)</td>
</tr>
<tr>
<td>Nothing put on cord</td>
<td>74% (67-80)</td>
<td>69% (61-76)</td>
<td>70% (63-77)</td>
</tr>
<tr>
<td>Newborns with clean cord care*</td>
<td>28% (20-36)</td>
<td>43% (37-52)</td>
<td>49% (42-56)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thermal care</th>
<th>NE Nigeria N=349</th>
<th>Ethiopia N=277</th>
<th>UP N=308</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate drying (&lt;30 minutes)*</td>
<td>95% (92-98)</td>
<td>41% (35-49)</td>
<td>88% (83-92)</td>
</tr>
<tr>
<td>Immediate wrapping (&lt;30 minutes)*</td>
<td>87% (81-92)</td>
<td>57% (47-67)</td>
<td>78% (71-84)</td>
</tr>
<tr>
<td>Delayed bathing (&gt;6hrs)</td>
<td>82% (76-88)</td>
<td>36% (28-46)</td>
<td>24% (18-31)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>NE Nigeria N=349</th>
<th>Ethiopia N=277</th>
<th>UP N=308</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate (&lt;1hr)</td>
<td>40% (33-47)</td>
<td>50% (42-57)</td>
<td>51% (44-59)</td>
</tr>
<tr>
<td>Exclusive (3 days)</td>
<td>43% (36-50)</td>
<td>93% (86-96)</td>
<td>61% (53-69)</td>
</tr>
</tbody>
</table>

*Don’t know responses excluded
Comment

• Challenges
  – Time frame different for all the innovations
  – No integration of demand and supply side investments
Innovation
Community-based approach to enhancing health, new to the context

Interaction
Enhanced interactions between families and frontline workers

Intervention
Increased coverage of life-saving interventions

Scale-up
An innovation is increased in reach to benefit a greater number of people over a wider geographical area

Improved maternal and newborn survival

Q3 How and why does scale-up happen?
Aims
• To understand how to catalyse scale-up of externally funded MNH innovations and identify factors enabling or inhibiting their scale-up

Scale-up definition
• Increasing the geographical reach of externally funded MNH innovations to benefit a greater number of people beyond grantee programme districts

Methods
• 150 in-depth stakeholder interviews in 3 geographies in 2012
• Follow-up in 2014
• Constituencies in the field of MNH:
  • Government, development agencies, civil society
  • Foundation grantees and programme officers
  • Academics/researchers, professional associations, experts
To catalyse scale-up:

- **Integrate scale-up** within plans and resources
- **Design for scale**
- **Build organisational capacity**
- **Advocate** with government decision makers
- Generate and communicate **strong evidence**
- **Align with government**
- **Ensure government involvement**
- **Harmonise efforts** with development partners and implementers
- Invoke **policy champions and networks** of allies/partners
- **Support and build government** capacity for scale-up
- **Work with community leaders** and others to stimulate diffusion
Harmonisation and alignment

- Donors and grantees embracing country coordination mechanisms helps to:
  - Strengthen government strategic coordination of external programmes
  - Coordinate evidence presented to government
  - Share learning to strengthen innovations:
    - Innovations aligned with government policies:
    - Grantees’ evidence aligned with government targets and indicators:

‘People in India are not combining their expertise...instead of wasting time reinventing the wheel we need to come together...’

‘What matters is the government’s priority area and if your idea’s not there, no matter how much you push, replication and scale-up are almost impossible’

‘...the ministry wants to see the results – how the innovation can contribute to the ministry and the health sector...’
Comment

• Challenge of high-quality data collection at a distance
• Link to quantitative work has been challenging
Innovation
Community-based approach to enhancing health, new to the context

Interaction
Enhanced interactions between families and frontline workers

Intervention
Increased coverage of life-saving interventions

Improved maternal and newborn survival

Scale-up
An innovation is increased in reach to benefit a greater number of people over a wider geographical area

Q4 To what extent do scaled-up innovations affect coverage of life-saving interventions and survival?
Where community-based maternal and newborn health innovations have been implemented on a large scale beyond grantee areas, **what is the effect on coverage of critical interventions and how does this depend on implementation strength?** What survival impact can be expected?

**Implementation strength:** the pooled effect of dose, duration, specificity, and intensity of an intervention – in order to determine how much implementation effort is needed to achieve a meaningful change in coverage and health outcomes.
Coverage of ITNs in children under 5 years in July-August 1999 by time since start of social marketing programme (Schellenberg Lancet 2004)

Mortality reduction and coverage of treated nets

Examples of dose-response approach from other public health evaluations

To what extent do scaled-up innovations affect coverage of life-saving interventions and survival?
Our approach

- Victoria 2010 Lancet, “National evaluation platform” concept
  - Untouched comparison areas don’t exist, roll-out often national
  - Dose-response analysis: implementation strength vs coverage change
  - Adjust for contextual factors that change over time
  - Monitoring data for the dose, household survey data for the response

- Local stakeholders views

- Data-informed platform for health (DIPH), dual-purpose
  - Feasibility studies in 3 countries
  - BMGF not keen on us being an implementation partner
  - Pilot work needed

- Implementation strength systematic review

- District level data for decision making systematic review

- ... but no innovations to study in 2010, 2011, 2012
Scale-up, coverage and survival, country-by-country

- **India**
  - Undergoing rapid change given new “Technical Support Unit” to support GoUP

- **Nigeria**
  - Scale-up of SFH innovations to Adamawa State

- **Ethiopia**
  - Community-based newborn care (CBNC)
    - Design
    - Implementation strength: sensitive issue
    - Moving ahead...

Q4 To what extent do scaled-up innovations affect coverage of life-saving interventions and survival?
Comment

• Implementation strength
  – Popular concept but not much relevant literature
  – Threat or opportunity?
  – Developing the methodology

• Timing, time scale
Promoting best practice for policy

• Advocating use of best available evidence to influence policy decisions
• IDEAS will:
  – Synthesise and disseminate maternal & newborn health research findings
  – Disseminate & publish IDEAS own findings
  – Promote exchange of learning
• We aim to:
  – Inform donor strategies, both the Bill & Melinda Gates Foundation and others
  – Influence government policy in Ethiopia, Nigeria & India, and in other countries with high maternal and newborn mortality
  – Influence international policy makers, e.g. WHO
  – Contribute to future research programs.
Technical Resource Centre

• Provides support to BMGF implementation grantees in measurement, learning and evaluation
  – Continuous survey support to SFH
  – Time and motion study with SNL
  – Reviewing protocols, manuscripts

• Lessons:
  – Implementation grantees did not perceive a need for support and were initially defensive.
  – MLE partner support should be built into the grant.
  – Best success where project teams have a clear view of needs and we plan together
  – BMGF programme officers have a key role to play
Communications resources

• Website: blogs, news stories, interactive maps, events posts, image gallery
• Quarterly newsletter: highlight IDEAS and grantee work
• IDEAS twitter account
• TRC web seminars – “how to” guides, technical issues, discussion of recent MNH papers

Website: ideas.lshtm.ac.uk
Newsletter sign up: eepurl.com/j3iBz
Twitter: @LSHTM_IDEAS
Who are we?

- 23 staff
- 20 in London
- 1 Addis
- 1 Delhi
- 1 Abuja
- 4 partner organisations

Team members

- Dr Elizabeth Allen
  Statistician
- Dr Della Berhanu
  Country Coordinator
  Ethiopia
- Dr Zelee Hill
  Qualitative Lead
- Dr Tanya Marchant
  Epidemiologist
- Dr Joanna Schellenberg
  Principal Investigator
- Dr Bilal Avan
  Scientific Coordinator
- Alice Curham
  Assistant Project Manager
- Krystyna Makowiecka
  Technical Resource Centre Coordinator
- Dr Boika Rechel
  Lead on Knowledge Transfer
- Dr Neil Spicer
  Qualitative Lead on Scale-up
- Agnes Becker
  Communications Officer
- Dr Meenakshi Gautham
  Country Coordinator India
- Lindsay Mangham-Jefferies
  Research Fellow in Health Economics
- Kate Sabot
  Research Fellow
- Keith Tomlin
  Data Manager
- Shirine Voller
  Project Manager
- Deepthi Wickremasinghe
  Information Specialist
- Dr Nasir Umar
  Country Coordinator
  Nigeria
Challenges
• Change
• Time-scale
• Partnership not in contracts
• Tension: project thinking and review of a long-term strategy

Highlights
• ‘Ringside seat’
• Dedicated LSHTM team
• Multi-disciplinary
• ‘Nobody knows how to do this’
• Practical, large-scale
• Evaluation
Contact us

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