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TURNING EVIDENCE INTO POLICY AND ACTION:
SAVING LIVES IN MATERNAL AND NEWBORN HEALTH

Mariam Claeson, Director Maternal Newborn and Child Health
Bill & Melinda Gates Foundation

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## TURNING EVIDENCE INTO POLICY AND ACTION FOR MNCH

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OUR BIG BETS ON WOMEN AND CHILDREN IN THE NEXT 15 YEARS

• The number of children who die before age 5 will be cut in half again
• The number of women who die in childbirth will be reduced by two thirds
~3M NEWBORNS DIE EACH YEAR, AND TEN COUNTRIES ACCOUNT FOR 60%+ OF THOSE DEATHS…

Neonatal Mortality Rate (per 1000 live births), and 10 countries with highest number of neonatal deaths, 2012¹

Source: WHO

¹ Neonatal Mortality Rate (per 1000 live births)

Country and total # of neonatal deaths, 2012

- India: 779,000
- China: 157,400
- Bangladesh: 75,900
- Pakistan: 75,900
- Indonesia: 72,400
- Nigeria: 267,000
- Kenya: 40,000
- Ethiopia: 87,800
- Angola: 41,200
- DRC: 118,100

NMR (per 1K live births):
- <10
- 10-19
- 20-29
- >30

10 countries with highest # of neonatal deaths

Rank; size = relative # of deaths

Country and total # of neonatal deaths, 2012
AND UNLESS CHANGE, THERE IS A LONG ROAD AHEAD...

Time that it will take for each region to reach the same chance of neonatal survival as experienced now by newborns in high income countries based on average annual rate of reduction (AAR) from 2000-2012\(^1\)

1 Sources: UN-IGME estimates for NMR to 2012. Projections based on regional NMR AAR 2000-2012 to reach an absolute NMR of 3, which is current (2012) weighted mean for OECD countries. AAR = average annual rate of reduction.
WHAT WORKS? LESSONS LEARNED IN THE LAST FIVE YEARS

What works?

1. Strong leadership and political will
2. Domestic investment in health increases access to services
3. Bringing simple life-saving interventions closer to the community
4. Use of data and locally-generated and adapted evidence to inform policy and program design decisions
5. Linking community and facility-based care
6. Increasing care-seeking, particularly antenatal care and facility-based delivery
7. Hands-on, skills-based training and group problem-solving improving provider performance
ETHIOPIA: EVIDENCE BASED POLICY & PROGRAMMING FOR IMPACT

- National health policy and comprehensive Health Sector Development Programs, including the Health Extension Program introduced in late 1990s
- Decentralized delivery through Health Extension Workers increased coverage of EPI, iMNCI, ICCM, immunization, nutrition programs
- Per capita expenditure for child health care increased by 82% from 2005 to 2011, resulting in an increase in intervention coverage
- Non-health sector factors and rapid socio-economic development were major contributors to improved child survival

50% lives saved from reduction in malnutrition & increase in coverage of child immunizations and ORT
THE JOURNEY FROM RESEARCH – TO POLICY – TO ACTION
LEARNING FROM NEWBORN CARE IN ETHIOPIA

Causes of newborn death, Ethiopia, 2010

- Preterm birth complications: 35.6%
- Neonatal infections: 29.2%
- Intrapartum related events*: 27.8%
- Other conditions: 2.5%
- Congenital abnormalities: 4.9%

Problem

- Newborn infections are large contributors to newborn mortality (29 – 44%)
- Health Extension Workers (HEWs) did not treat newborn infection/sepsis at the community level
- Mothers and newborns referred to health facilities

Innovation - Solution

COMBINE: **RCT** Integration of community-based management of possible serious bacterial infection by HEWs, in MNCH package when referral is not possible or accepted by the family.

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1 Save the Children. [https://clinicaltrials.gov/ct2/show/NCT00743691](https://clinicaltrials.gov/ct2/show/NCT00743691)
THE JOURNEY FROM RESEARCH – TO POLICY – TO ACTION
STEP BY STEP

Core targets

Increase from 10% to 60%, from 2011 to 2013, in the proportion of newborns with Possible Serious Bacterial Infection who complete a seven-day course of antibiotics

Goals

15% reduction in newborn mortality (in study area, 2009-2013)

Goals

Reduce newborn mortality (national)

National target: % of newborns with Possible Serious Bacterial Infection who complete a seven-day course of antibiotics

National scale

Data & Evidence

COMBINE trial data, CBNC Phase 1 evaluation

Evidence-Based Policies

2011-2012: UNICEF/ BMGF newborn health techno advocacy

2013: FMOH announces newborn health policy breakthrough

$ = BMGF $

$ = $ from other partners

= future activities

Enabling Environment

Supply-side

Demand-side

Supply-side

Quality Care

Improve quality of services for newborns

Effective Tools

2009: COMBINE trial begins (19 woredas, 640K people)

Healthy Practices

2008: Initial research to understand beliefs, attitudes and behaviors in the home

Healthy Practices

Identify and overcome barriers to care-seeking

PHC System

Bolster health system (supply chain, sustainable financing)

Quality Care

2014: National Scale-up of CBNC includes community-based treatment of Bacterial Infections (7 zones, 13M people)

Evidence-Based Policies

2014: National Scale-up of CBNC1 includes community-based newborn health policy breakthrough

$ = future activities

$ = $ from other partners

2008: Initial research to understand beliefs, attitudes and behaviors in the home

$ = $ from other partners

2011-2012: UNICEF/ BMGF newborn health techno advocacy

2013: FMOH announces newborn health policy breakthrough

$ = $ from other partners

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1. CBNC – Community-based newborn care package
Facility-based delivery is increasing globally—also among rural and urban poor; we need to meet women where they are.

Source: DHS, DLHS, AHS
INCREASING THE FOCUS ON FACILITY DELIVERIES
WORKING ACROSS THE QUALITY CONTINUUM

Dimensions of Quality

- **Effective**
  - Adherent to an evidence base
- **Efficient**
  - Maximizes resources
- **Timely**
  - Reduce wait time
- **Patient-centered**
  - Respectful care
- **Equitable**
  - No variation in quality
- **Safe**
  - Minimizes risk

**Quality Planning**
Design a process to meet a target

**Example Approaches**
- Establish quality goals
- Establish process controls
- Resource coordination

**Example Investments**
- IHI (Ethiopia)
- PSHAN (Nigeria)
- UNC (Malawi)

**Quality Control**
Measure actual performance

**Example Approaches**
- Standards and accreditation
- Measure processes and outcomes
- Data capture/analysis
- Track gaps in performance

**Example Investments**
- Mother/Baby Friendly (Global)
- PACT (Nigeria)

**Quality Improvement**
Advance a process to a new target

**Example Approaches**
- In-Service skill building
- Coaching/Mentoring
- Checklist program
- Improvement collaboratives

**Example Investments**
- CARE (Bihar)
- Pronto (Bihar)
- IHI (Malawi)
- Better Birth (UP)

## QUALITY OF CARE RESEARCH TO INFORM POLICY AND PROGRAMMING

### FROM RCT TO QI TESTING AND ADAPTING

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safe Childbirth Checklist</strong> (Uttar Pradesh, India)</td>
<td>Checklist of 29 items addressing the major causes of maternal and neonatal death during the intrapartum period, accompanied by mentoring</td>
</tr>
<tr>
<td><strong>Emergency drills / simulation</strong> (Bihar, India)</td>
<td>Conducting regular drills and simulations for emergency situations (e.g. newborn not breathing) and certifying that providers have completed these simulations</td>
</tr>
<tr>
<td><strong>Mentoring and coaching models</strong> (Bihar and Uttar Pradesh, India)</td>
<td>Nurses coaching and mentoring other nurses to promote adherence to quality practices and to identify opportunities for quality improvement</td>
</tr>
<tr>
<td><strong>Improvement Collaboratives</strong> (Bihar, Ethiopia, Malawi, Ghana)</td>
<td>Team-based process of target setting, testing and adapting process with peer-to-peer learning between health providers</td>
</tr>
<tr>
<td><strong>Accreditation</strong> (Mother-Baby Friendly Hospitals)</td>
<td>WHO and UNICEF-sponsored accreditation program to certify hospitals for providing optimal level of intrapartum and post-natal care.</td>
</tr>
</tbody>
</table>
FROM EFFICACY TO PROGRAM EFFECTIVENESS:
THE CASE OF ANTENATAL CORTICOSTEROIDS

Additional annual lives saved @25pp increase in coverage (000s)

Modern contraceptives
Antenatal corticosteroids
Neonatal resuscitation
Injectable antibiotics
Syphilis detection and treatment
Oral antibiotics
Immediate drying
Tetanus toxoid vaccination
Antibiotics for pPROM
Clean cord care (with CHX)
Exclusive breastfeeding
MgSO4 for pre-eclampsia
Balanced energy supplementation
Micronutrient supplementation
Induction of labor
AMTSL (uterotonics)
ORS
Folic Acid
IPTP
Calcium supplementation

Source: Johns Hopkins analysis; Lives Saved Tool (LiST); Totals for Ethiopia, Malawi, Uttar Pradesh, Bihar and Northern Nigeria (Gombe, Adamawa, Bauchi, Borno, Taraba)

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Antenatal corticosteroids improve survival for preterm newborns, but can be dangerous if over-prescribed

Training community healthcare workers to assess gestational age and administer steroids in Zambia

Grand Challenge funding >10 promising approaches for gestational age measurement in 6 countries

- Phone-based ultrasound with automated measurement
- Light absorption and scattering on newborn skin
- Maternal metabolomic profiling
- Conventional ultrasound with automated interpretation
- Newborn metabolomic profile
- Newborn face and foot analysis
- DNA methylation of cord blood
- Smartphone ophthalmoscope image analysis
- Algorithms combining current measurement techniques
Kangaroo Mother Care
Our hypothesis for HOW to do it > expand the tails
KMC Implementation research agenda

Hypothesis: KMC is good for all newborns while saving most lives in the early management of preterm babies in all settings.
## WHAT IT WILL TAKE - A SYSTEMS APPROACH

**TACKLING KEY DETERMINANTS FOR IMPACT AT SCALE**

### Goals

<table>
<thead>
<tr>
<th>Maternal</th>
<th>Core intervention coverage</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of women with pre-eclampsia who are treated with IV/IM MgS04</td>
<td>% of pregnant women with pPRoM who are not in labor and are given oral erythromycin</td>
<td>By 2030, global MMR of &lt;70 and MMR &lt;140 in each country</td>
</tr>
<tr>
<td>% women who are provided with uterotonic for postpartum hemorrhage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of pregnant women tested for syphilis and given treatment if needed</td>
<td>% of newborns with breathing problems who are resuscitated with bag and mask</td>
<td>By 2030, NMR of &lt;12 in each country</td>
</tr>
<tr>
<td>% of newborns who are dried within 5 minutes of birth</td>
<td>% of newborns receiving skin-to-skin contact within 30 mins of birth</td>
<td></td>
</tr>
<tr>
<td>% of newborns receiving breastfeeding within 1 hour; % of newborns receiving exclusive breastfeeding through first 6 months</td>
<td>% of newborns with suspected sepsis/pneumonia treated with antibiotics</td>
<td></td>
</tr>
</tbody>
</table>

### Supply-side

<table>
<thead>
<tr>
<th>Enabling Environment</th>
<th>Core intervention coverage</th>
<th>Supply-side</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacious and effective tools and practices designed for scale</td>
<td>% of women with pre-eclampsia who are treated with IV/IM MgS04</td>
<td></td>
</tr>
<tr>
<td>Evidence-based policies at the global, national and sub-national levels</td>
<td>Evidence-based policies at the global, national and sub-national levels</td>
<td>Package: Pre-conception, Antenatal, Intrapartum, Post-natal</td>
</tr>
<tr>
<td>Supply-side</td>
<td>1 2 3</td>
<td>2 2</td>
</tr>
<tr>
<td>PHC system resourced and managed for performance (commodities, HR, etc)</td>
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<td>Package: Pre-conception, Antenatal, Intrapartum, Post-natal</td>
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<tr>
<td>Demand-side</td>
<td>2 2</td>
<td>2 2</td>
</tr>
<tr>
<td>Healthy practices in the home and community</td>
<td>Healthy practices in the home and community</td>
<td>Package: Pre-conception, Antenatal, Intrapartum, Post-natal</td>
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### Demand-side

<table>
<thead>
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<th>Core intervention coverage</th>
<th>Demand-side</th>
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</thead>
<tbody>
<tr>
<td>Data and evidence for decision-making and accountability</td>
<td>Policies in related sectors (e.g. Ag, WSH)</td>
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</tr>
<tr>
<td>Improved household conditions (e.g. wealth, education, gender, equity)</td>
<td>Improved services (e.g. water, roads, energy)</td>
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= MNCH team initiative areas

**Core intervention coverage**

- Maternal
  - % of women with pre-eclampsia who are treated with IV/IM MgS04
  - % women who are provided with uterotonic for postpartum hemorrhage
  - % of pregnant women with pPRoM who are not in labor and are given oral erythromycin
- Newborn
  - % of newborns with breathing problems who are resuscitated with bag and mask
  - % of newborns who are dried within 5 minutes of birth
  - % of newborns receiving skin-to-skin contact within 30 mins of birth
  - % of newborns receiving breastfeeding within 1 hour; % of newborns receiving exclusive breastfeeding through first 6 months
  - % of newborns with suspected sepsis/pneumonia treated with antibiotics

**Goals**

- By 2030, global MMR of <70 and MMR <140 in each country
- By 2030, NMR of <12 in each country

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USING EVIDENCE TO STRENGTHEN POLICY, ADVOCACY AND PROGRAMMING

ESSENTIAL INTERVENTIONS, COMMODITIES AND GUIDELINES
for Reproductive, Maternal, Newborn and Child Health

A POLICY GUIDE
for Implementing Essential Interventions for Reproductive, Maternal, Newborn and Child Health (RMNCH)

A GLOBAL REVIEW OF THE KEY INTERVENTIONS RELATED TO REPRODUCTIVE, MATERNAL, NEWBORN AND CHILD HEALTH (RMNCH)

A MULTISECTORAL POLICY COMPRENDIUM FOR RMNCH
A CALL FOR SUSTAINED AND IMPROVED MEASUREMENT OF MNCH IN THE SDG-ERA…

“The Kirkland principles”

**Focus:** Determine a core set of global MNCH coverage indicators, targets, and methods that can be localized.

**Relevance:** Ensure that MNCH coverage data is of primary value in the country in which the data are collected.

**Innovation:** Develop efficient and technically sound methods and tools to collect and use coverage data, including service quality.

**Equity:** Direct resources to those most in need and at highest risk of mortality as a fundamental component of program design, measurement, and management.

**Leadership:** Prioritize measurement and evaluation within the global strategic agenda for RMNCAH, elevating attention to and investment in data collection and use, while fostering country-level capacity, ownership, and accountability.
INTRODUCTION TO MENTAL HEALTH PANEL

Deaths among