Ending preventable maternal deaths worldwide by 2035: A proposal

April 8, 2013
Ending Preventable Maternal Mortality requires ...

**Geographic Focus**
- Intensify programs where most maternal deaths occur

**High Burden Populations**
- Address barriers and scale up access towards equity and respectful maternal and newborn care for those now underserved

**High Impact Practices**
- Base the maternal health strategy on the local causes of maternal and newborn death
- Strategy should emphasize:
  1. Family planning
  2. Quality respectful intrapartum and immediate postnatal care with effective referral
  3. Provide prevention and treatment for obstetric complications and co-morbidities that increase maternal deaths—HIV/AIDS, malaria, tuberculosis, and poor nutrition—during the full spectrum of maternity care.
- Be responsive to emerging health system changes -- financing initiatives, decentralization, privatization, urbanization
Ending Preventable Maternal Mortality requires ...

**Supportive Environment**
- Educate girls and women—as well as men
- Empower women to demand quality services
- Enact smart policy for inclusive economic growth
- Leverage public, private and professional partnerships

**Mutual Accountability**
- Promote transparency and shared accountability for financing and results
- Monitor progress against a common set of metrics
- Ensure communications—electronic and mobile technology—and improve documentation/surveillance and mapping to improve the continuum of care and use of knowledge in programming
Over half of all maternal deaths occur in just eight countries. The geographic focus includes:

- **India**: 56,000 deaths (20%)
- **Nigeria**: 40,000 deaths (14%)
- **DRC**: 15,000 deaths (5%)
- **Pakistan**: 12,000 deaths (5%)
- **Sudan***: 10,000 deaths (4%)
- **Indonesia**: 9,600 deaths (3%)
- **Ethiopia**: 9,000 deaths (3%)
- **Tanzania**: 8,500 deaths (3%)

*Other* 126,900 deaths (45%)


*Sudan and South Sudan*
Figure 1. Map with countries by category according to their maternal mortality ratio (MMR, death per 100,000 live births), 2010
Maternal coverage indicators show widest gap in equity

Child Health Indicators
- Early start of breastfeeding
- DPT immunization
- Fully immunized
- Vitamin A
- Oral rehydration therapy

Maternal Health Indicators
- Family planning needs satisfied
- Antenatal care with a skilled provider
- Antenatal care (≥ 4 visits)
- Skilled birth attendant

Barros, Ronmans, Axelson et al. 2012
Three ways in which contraceptive use/fertility impact on maternal deaths:

1. Reduces the number of times a woman is exposed to pregnancy (especially an unintended pregnancy) -- In many countries, upwards of 40 percent of pregnancies are unintended (either unwanted or mistimed).

2. Ensures healthy timing -- both younger/older ages and higher parity carry higher risk of maternal mortality.

3. The impact of growing annual number of births on the health system.
Family planning can ensure an intended birth

Fertility plays a major role in MMR Reduction:

Unmet need of 222 million women for modern contraception leads to 79,000 pregnancy-related and 572,000 newborn deaths annually.

Causes of maternal death: Population momentum

Proven interventions can address the leading causes of maternal death, both direct and indirect.

- **Preeclampsia**: 18%
- **Eclampsia**: 35%
- **Hemorrhage**: 30%
- **Unsafe Abortion**: 9%
- **Sepsis**: 8%
- **Indirect and Other Direct**: 30%
- **Underlying causes**:
  - Unintended pregnancy
  - Under-nutrition
  - Co-infections

**High Impact Practices**

- Calcium
- Magnesium Sulfate
- Aspirin
- Anti-hypertensives
- Cesarean section
- Active management of the third stage of labor
- Uterotonics: oxytocin & misoprostol
- Blood transfusion
- Family Planning
- Diet, supplementation and fortification
- Iron folate supplements
- De-worming
- Malaria intermittent treatment
- Anti-retrovirals
- Family Planning
- Post-abortion care
- Tetanus toxoid
- Clean delivery
- Antibiotics

Source for Causes: Countdown to 2015
Increase in MH Services Utilization over Decade

African MCH Priority Countries by DHS Survey Phase

Asian MCH Priority Countries by DHS Survey Phase
Quality of care is critical: an important part is respect

- A "veil of silence" has obscured widespread humiliation and abuse of women in facilities during childbirth, a time of intense vulnerability for women.

- In many settings, disrespect of women in childbirth has been “normalized” and is sometimes accepted by women themselves.

- Institutional disrespect and abuse of women can significantly deter women’s use of facility skilled care for normal and emergency birth care.

USAID promotes
Increasing demand for services: Applying the financial “lever”

Rwanda progress

There is a correlation between increased enrollment in **health insurance** and increased institutional deliveries.

- National scale-up efforts have increased coverage from 7% in 2003 to 91% in 2010.
- Institutional deliveries have increased from 31% in 2000 to 52.10% in 2008.

Recent research has shown a correlation between **pay for performance** (P4P) and an increase in institutional deliveries by 21.1%.

Sources: Rajkotia and Charles/USAID; Soucat/WB

Financing Approaches

- Health Insurance
- Conditional cash transfers
- Vouchers
- Free services
- Pay for performance
Improving service quality: Quality improvement has resulted in sustained use of AMTSL to prevent postpartum hemorrhage -- Ecuador

<table>
<thead>
<tr>
<th>Year</th>
<th>Hospitals</th>
<th>Centers</th>
<th>Provinces</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>21</td>
<td>07</td>
<td>05</td>
</tr>
<tr>
<td>2004</td>
<td>43</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>2005</td>
<td>45</td>
<td>08</td>
<td>18</td>
</tr>
<tr>
<td>2006</td>
<td>59</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>2007</td>
<td>75</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>2008</td>
<td>82</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2009</td>
<td>97</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>2010</td>
<td>97</td>
<td>23</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: University Research Corporation.

Direct technical assistance from QAP ends

“Intensive” AMTSL Spread Collaborative
Heterogeneity of HIV Epidemics Worldwide

Indirect Causes of Maternal Mortality

Prevention responses need to be tailored to diverse epidemics
In SSA, the proportion of indirect vs. obstetric causes is greater than in South Asia – reflecting the important contribution of infectious diseases to maternal mortality in Africa.
Maternal mortality is also high in areas of epidemic and endemic malaria.

<table>
<thead>
<tr>
<th>Country</th>
<th>MMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mozambique</td>
<td>490</td>
</tr>
<tr>
<td>Zambia</td>
<td>440</td>
</tr>
<tr>
<td>Malawi</td>
<td>460</td>
</tr>
<tr>
<td>Kenya</td>
<td>360</td>
</tr>
<tr>
<td>Uganda</td>
<td>310</td>
</tr>
<tr>
<td>Tanzania</td>
<td>460</td>
</tr>
<tr>
<td>Nigeria</td>
<td>630</td>
</tr>
<tr>
<td>DRCongo</td>
<td>540</td>
</tr>
<tr>
<td>Rwanda</td>
<td>340</td>
</tr>
<tr>
<td>Senegal</td>
<td>370</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>350</td>
</tr>
<tr>
<td>Rwanda</td>
<td>340</td>
</tr>
<tr>
<td>Mali</td>
<td>540</td>
</tr>
<tr>
<td>Ghana</td>
<td>350</td>
</tr>
<tr>
<td>Liberia</td>
<td>770</td>
</tr>
<tr>
<td>Senegal</td>
<td>370</td>
</tr>
<tr>
<td>Madagascar</td>
<td>240</td>
</tr>
</tbody>
</table>

Clinical burden of Plasmodium falciparum, 2007

Source: 2010 Malaria Atlas Project, available under the Creative Commons Attribution 3.0 Unported License.
Prevalence of Anemia in Pregnant Women

USAID Priority Countries with National Data by Region

- Mali: 76%
- Ghana: 70%
- Senegal: 62%
- DR Congo: 60%
- Tanzania: 53%
- Madagascar: 38%
- Malawi: 38%
- Uganda: 31%
- Ethiopia: 22%
- Rwanda: 20%
- India: 59%
- Nepal: 48%
- Haiti: 50%
Coverage of IFA in Pregnancy for Selected USAID Priority Countries

- **India, 2005/6**: 35
- **Indonesia, 2007**: 23
- **Nepal, 2011**: 20
- **Pakistan, 2005/6**: 25
- **Haiti, 2005/6**: 35

0 IFA, 1-89 IFA, 90+ IFA
### Care during pregnancy, childbirth and beyond

#### Care for Mothers with TB and other infectious diseases
- TB screening and treatment
- STI screening and treatment
  - Screening and treatment for other infections like Hepatitis

#### Care for Mothers and Newborn in Areas With Malaria
- Use of ITNs
- Intermittent Preventative Treatment
- Case management for malaria illness and anemia

#### Care for HIV Positive Mothers and Newborns
- ART initiation or continuation
- Couples counseling and testing
- Prevention of opportunist infections
  - Extra monitoring and treatment for HTN, pre-eclampsia/eclampsia and anemia
- On-going case management for mother and newborn

#### Emergency Care for Mothers and Newborns
- Referral networks
- Surgery and Medical care
- Availability of Blood

#### Standard Care for Maternal and Newborn Health
- Focused Antenatal Care and improved nutrition
- Intrapartum Care
- Postnatal Care

#### Family Planning
- Voluntary access to modern contraceptive methods
- Healthy Timing and Spacing of Pregnancies
- Post-abortion care
Contextual Challenges
Privatization of facility births is increasing especially in Asia. 78% of facility deliveries are in the private sector in Indonesia. Private sector deliveries have doubled in Bangladesh, almost tripled in Cambodia and more than tripled in Nepal.
Nearly 50% of people (LMIC) live in urban areas!
Beware the quintile: Urbanization and the poor (Tanzania 2010)

There is usually greater access to care in urban areas – but not among the poor.

Matthews Z and Adanu R, 2013, Arusha
In summary....

1. **Target setting**—plausible/aggressive target (number or %), timing—by when
   - What to do re countries that have already reached target?
   - Is a flexible target more reasonable for countries that are far from the target?
   - Should we try to link maternal, newborn and child targets (meaning the 5 shifts)?

2. **Reaching the target**—Strategies based on local causes of maternal
   —More data needed
   - Epidemiology and demographics of maternal mortality
   - Integration of care for the causes
   - Demand for care
   - Infrastructure and quality of care

3. **What contextual factors must be considered in the strategies?**
   - Privatization of services
   - Financing initiatives
   - Decentralization
   - Urbanization
   - Subnational variables
Many thanks
## Financial Incentives – Generalized or Africa findings for delivery

<table>
<thead>
<tr>
<th>Incentives</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance based incentives</td>
<td>• Most show association with ↑ quality</td>
</tr>
<tr>
<td></td>
<td>• DRC (small study) did not show association between PBI and institutional deliveries</td>
</tr>
<tr>
<td>Insurance</td>
<td>• Most show positive correlation with SBAs and facility delivery</td>
</tr>
<tr>
<td></td>
<td>• 6 studies show positive correlation with C/S</td>
</tr>
<tr>
<td>User fee exemptions</td>
<td>• ↑ facility delivery rates</td>
</tr>
<tr>
<td></td>
<td>• ↑ C/S rates, in some cases</td>
</tr>
<tr>
<td>Conditional cash transfers</td>
<td>• 6 studies show positive effect on birth with SBAs</td>
</tr>
<tr>
<td></td>
<td>• 3 studies show positive effect on birth in a hospital</td>
</tr>
<tr>
<td>Vouchers</td>
<td>• Most show ↑ SBA or facility delivery</td>
</tr>
</tbody>
</table>

Source: Forthcoming PLoS Med Collection on Financial Incentives for Maternal Health Services