Strengthening Health Systems: the Role of Maternal Health Indicators

Woodrow Wilson International Center
Global Health Initiative
8 March 2010

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With acknowledgements to
Patsy Bailey, Samantha Lobis, Lynn Freedman
WHO World Health report 2008 describe current health systems as providing
Inverse car
Impoverishing car
Fragmented and Fragmenting
Unsaf
Misdirected
WHO Framework for Strengthening Health Systems


- Health services
- Workforce
- Information for decision making
- Essential drug supply and logistics
- Financing and resource allocation
- Leadership and governance
What we already know:

- Approximately 15% of pregnant women develop complications

- Most maternal deaths are caused by direct obstetric complications that can be treated

- Many direct obstetric complications cannot be predicted or prevented
We know when maternal deaths occur.

<table>
<thead>
<tr>
<th>Complication</th>
<th>Hours</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postpartum</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Antepartum</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Ruptured uterus</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Eclampsia</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Obstructed labor</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
We know when neonates die

50% of deaths occur in the first 24 hours

Asphyxia

75% occur in the first week (3 million)

Preterm/Low Birth Weight

Source: Lawn JE et al. (2005).
We recognize the Maternal and Newborn Care Continuum

- Pre-pregnancy
  - Family planning

- Pregnancy
  - Antenatal care
  - Health education during pregnancy
  - Birth planning

- Delivery
  - Skilled attendance at birth
  - Maternity care
  - PMTCT

- Postpartum, postnatal
  - Postpartum/postnatal care for Mother and Baby, and IMNCI
  - Skilled attendance at birth
  - Identifying/referring newborn illness
Consensus for Maternal, Newborn and Child Health - requires

• Political leadership and community engagement and mobilization

• Effective health systems that deliver a package of high quality interventions

• Removing barriers to access, with services for services women and children being free at the point of use

• Skilled and motivated health workers

• Accountability at all levels

Endorsed by G8, 2009
Consensus for Maternal, Newborn and Child Health will:

• Save lives of 1 million women from pregnancy and childbirth complications
• Save Lives of 4.5million newborns
• Prevent 1.5million stillbirths
• Significant decrease in total number of unwanted pregnancies an half of the unsafe abortions
• Significant decrease in current unmet need for FP services

Endorsed by G8, 2009
Can the EmOC Indicators assess health systems strengthening?

Availability
- Are there enough facilities providing EmOC?
- Are they well distributed?

Utilization
- Are enough women using these facilities?
- Are women with obstetric complications using these facilities?
- Are sufficient critical services being provided?

Quality of Care
- Is the quality of the services adequate?

What services needed in addition to EmOC?
How and when are the EmOC indicators measured?

- Nationally, integrated into HMIS
- Project monitoring
- Needs assessments for EmONC – facility-based surveys of hospitals and health centers
Availability
# EmOC Indicators

## Availability: Are there enough facilities providing EmOC?

<table>
<thead>
<tr>
<th>Indicator (1)</th>
<th>Minimum acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EmOC facilities:</td>
<td>For every 500,000 population</td>
</tr>
<tr>
<td>— Basic</td>
<td>— 5 EmOC facilities where at least 1 is Comprehensive</td>
</tr>
<tr>
<td>— Comprehensive</td>
<td></td>
</tr>
</tbody>
</table>
EmOC Signal functions

1. Parenteral antibiotics
2. Uterotonic drugs
3. Parenteral anticonvulsants
5. Removal of retained products
6. Assisted vaginal delivery
7. Neonatal resuscitation
8. Cesarean delivery
9. Blood transfusion
EmOC Indicators

**Availability: Are facilities well distributed?**

<table>
<thead>
<tr>
<th>Indicator (2)</th>
<th>Minimum acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic distribution</td>
<td>Minimum level is met in sub-national areas</td>
</tr>
</tbody>
</table>
Bhutan: Functioning EmOC Facilities
September 2002

Map showing the locations of EmOC centers in Bhutan, categorized as follows:
- Comprehensive EmOC centers – 6
- Comprehensive EmOC centers (Military) – 2
- Basic EmOC centers - 14
Fulfillment of Recommended Minimum Number of EmOC Facilities, Angola 2007

MoH – Angola Needs Assessment report
Utilization
## EmOC Indicators

### Utilization: Are women using these facilities?

<table>
<thead>
<tr>
<th>Indicator (3)</th>
<th>Minimum acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of births in facilities</td>
<td>Countries should set their own acceptable level</td>
</tr>
</tbody>
</table>
Proportion of births in EmOC facilities and all facilities, Nicaragua, 2006
## EmOC Indicators

### Utilization: Are women with obstetric complications using these facilities?

<table>
<thead>
<tr>
<th>Indicator (4)</th>
<th>Minimum acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Met need for EmOC</td>
<td></td>
</tr>
<tr>
<td>% of women with complications treated in facilities</td>
<td>At least 100% of women with obstetric complications treated in facilities</td>
</tr>
<tr>
<td>(15% of all births expected to have complications)</td>
<td></td>
</tr>
</tbody>
</table>
Experience from the field: Sofala, Mozambique

Met need for EmOC

Met Need for EmOC in EmOC facilities and all facilities Angola

MoH – Angola Needs Assessment report

EmOC  Non-EmOC
# EmONC Indicators

## Utilization

Are sufficient critical services being provided?

<table>
<thead>
<tr>
<th>Indicator (5)</th>
<th>Acceptable levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean section rate</td>
<td>Not less than 5% and not more than 15%, as a proportion of all births in the population</td>
</tr>
</tbody>
</table>

Calculation = \( \frac{\text{Caesarean sections performed in EmOC Facilities}}{\text{total expected live births in area}} \)
Population-based C/S rate by region

- Harari: 9.9%
- Addis Ababa: 7.1%
- Dire Dawa: 2.6%
- National: 0.6%
- Tigray: 0.7%
- Gambela: 0.7%
- Benishangul-Gumuz: 0.7%
- SNNP: 0.4%
- Oromiya: 0.4%
- Amhara: 0.2%
- Somali: 0.1%
- Afar: 0.0%

EmONC Baseline Assessment, MOH, 2009
Quality of Care
**EmOC Indicators**

**Quality of care: Is the quality of the services adequate?**

<table>
<thead>
<tr>
<th>Indicator (6)</th>
<th>Acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct obstetric case fatality rate (DOCFR)</td>
<td>Less than 1%</td>
</tr>
</tbody>
</table>
Direct Obstetric Case Fatality Rates

- **Gisarme, Rwanda**: 2.0% Baseline, 0.9% Follow up
- **Muanza, Tanzania**: 3.0% Baseline, 1.9% Follow up
- **Sofala, Mozambique**: 3.5% Baseline, 1.7% Follow up

The chart compares baseline and follow-up case fatality rates for direct obstetric cases in Gisarme, Rwanda; Muanza, Tanzania; and Sofala, Mozambique.
## EmOC Indicators

**Quality of care: Is the quality of the services adequate?**

<table>
<thead>
<tr>
<th>Indicator (7)</th>
<th>Acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapartum and very early neonatal death rate</td>
<td>To be determined</td>
</tr>
</tbody>
</table>
## Intrapartum & very early neonatal death rate

<table>
<thead>
<tr>
<th>Country</th>
<th>Intrapartum + very early neonatal deaths</th>
<th>Women who delivered</th>
<th>Intrapartum &amp; very early neonatal death rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cusco, Peru 2004</td>
<td>164</td>
<td>19,191</td>
<td>0.85%</td>
</tr>
<tr>
<td>S E Asian country 2008*</td>
<td>625</td>
<td>83,708</td>
<td>0.75%</td>
</tr>
</tbody>
</table>

*283 intrapartum stillbirths excluded due to unspecified BWT
## What services are needed in addition to EmOC?

<table>
<thead>
<tr>
<th>Indicator (8)</th>
<th>Acceptable level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of maternal deaths due to indirect causes</td>
<td>No set acceptable level</td>
</tr>
</tbody>
</table>
Proportion of maternal deaths due to direct and indirect causes, Angola 2007

Causes of maternal deaths

- Indirect: 36%
- Direct: 61%
- No information: 3%

Direct obstetric causes of maternal deaths

- Hemorrhage: 25%
- HDP: 20%
- Pro/Obs Labor: 14%
- Uterine Rupture: 10%
- Sepsis: 8%
- Ect Preg: 6%
- Abortion: 4%
- Other: 13%

Assessing Outcomes

• Near Miss – Severe Acute Maternal Morbidity
• Fresh Stillbirths
• Maternal Death Reviews and Audits
• Confidential Enquiries
How have the indicator data been used?

• **Policy**
  • Human Resource Policies
  • Clinical Management & Training Policies

• **Programming**
  • National strategy and planning
  • Improving the availability, accessibility, utilization and quality of EmONC

• **Monitoring & evaluation**
  • EmOC Indicators integrated into HMIS in > 7 countries
  • Several countries have done more than 1 needs assessment
  • Results useful for monitoring MDG 5
How can the EmOC Indicators measure the WHO Health System Strengthening building blocks?

- **Health services**
  - Are enough facilities providing EmONC services?

- **Workforce**
  - Do facilities have adequate numbers of health workers with the right mix of life-saving skills?

- **Information for decision making**
  - Does HMIS capture key information for monitoring utilization of EmONC?

- **Essential drug supply and logistics**
  - Are essential drugs in stock and equipment functional?

- **Financing and resource allocation**
  - Is the distribution of resources across facilities equitable?

- **Leadership and governance**
  - Are policies, protocols, and good practices being implemented?

*Slide source: P Bailey*