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

World Health Organization

THE AGA KHAN UNIVERSITY

The Partnership for Maternal, Newborn & Child Health
Rationale

- **High mortality:**
  - Every year, 7.6 million children die before their 5th birthday
    - 3.1 million babies die in their first month of life
    - 2.4 million infants die between 1–12 months
  - 358,000 women die due to complications of pregnancy and childbirth
  - 2.6 million stillbirths occur
We know where these deaths occur

Burden of child deaths

46% of child deaths occur in Africa and 28% in South-east Asia

More than 50% of all child deaths occur in just six countries: India, Nigeria, DR Congo, Pakistan, China and Ethiopia

We know where these deaths occur

Burden of maternal deaths

Women in Sub-Saharan Africa experience a 1 in 31 chance of dying compared to developed regions where the rate is 1 in 4300

We know the causes of deaths

Causes of deaths in children under 5 years
(7.6 million deaths every year/ around 21,000 preventable deaths every day)

- Children 59%
  - Diarrhoea 14%
  - Pneumonia 14%
  - Other infections 9% (including tuberculosis)
  - Malaria 8%
  - Noncommunicable diseases 4%
  - Injury 3%
  - AIDS 2%
  - Pertussis 2%
  - Meningitis 2%
  - Measles 1%

- Newborns 41%
  - Preterm 12%
  - Asphyxia 9%
  - Sepsis 6%
  - Other neonatal 5%
  - Pneumonia, neonatal 4%
  - Congenital 3%
  - Tetanus 1%
  - Diarrhoea, neonatal 1%

Source: Countdown to 2015, 2010.
We know the causes of deaths

Causes of maternal deaths
(350,000 deaths every year/around 1000 preventable deaths every day)

- Embolism 1%
- Sepsis 8%
- Unsafe abortion 9%
- Other direct 11% (e.g. complications of anaesthesia and caesarian sections, and postnatal depression suicide)
- Indirect 18% (e.g. malaria, HIV/AIDS, cardiac diseases)
- Haemorrhage 35% (i.e. blood loss)
- Hypertension 18% (i.e. high blood pressure)

Adapted from: Countdown to 2015 (2010) and UN Inter-agency Group for Child Mortality Estimation (2011).

Source: Countdown to 2015, 2010.
These deaths could be prevented through the provision of high impact interventions

HOWEVER…

Coverage of essential RMNCH Interventions is uneven

Figure adapted from Countdown to 2015, Decade report. 2010.
Coverage is uneven as some interventions are more difficult to deliver than others and require 24/7 service availability.
A tool for supporting policy-making for women’s and children’s health

- Organizes information on essential interventions along the continuum of care based on level of care, required commodities and human resources
- Useful for planning in service delivery and commodities
- To be used as a guide for developing integrated RMNCH high impact strategy and monitoring tools
- To be used by development partners to align their support to countries in RMNCH related efforts
56 interventions are essential to have available to all. Examples of these interventions include:

<table>
<thead>
<tr>
<th>Continuum of care</th>
<th>Adolescence &amp; pre-pregnancy</th>
<th>Pregnancy (Antenatal)</th>
<th>Childbirth</th>
<th>Postnatal (mother)</th>
<th>Postnatal (newborn)</th>
<th>Infancy &amp; childhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>All levels: Community</td>
<td>▪ Family planning (advice, hormonal and barrier methods)</td>
<td>▪ Iron and folic acid supplementation</td>
<td>▪ Prophylactic uterotonics to prevent postpartum haemorrhage (excessive bleeding after birth)</td>
<td>▪ Family planning advice and contraceptives</td>
<td>▪ Immediate thermal care (to keep the baby warm)</td>
<td>▪ Exclusive breastfeeding for 6 months</td>
</tr>
<tr>
<td>Primary Referral</td>
<td>▪ Prevent and manage sexually transmitted infections, HIV</td>
<td>▪ Tetanus vaccination</td>
<td>▪ Manage postpartum haemorrhage using uterine massage and uterotonic</td>
<td>▪ Nutrition counselling</td>
<td>▪ Initiation of early breastfeeding (within the first hour)</td>
<td>▪ Continued breastfeeding and complementary feeding from 6 months</td>
</tr>
<tr>
<td></td>
<td>▪ Folic acid fortification/ supplementation to prevent neural tube defects</td>
<td>▪ Prevention and management of malaria with insecticide treated nets and antimalarial medicines</td>
<td>▪ Social support during childbirth</td>
<td>▪</td>
<td>▪ Hygienic cord and skin care</td>
<td>▪ Prevention and case management of childhood malaria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Prevention and management of sexually transmitted infections and HIV, including with antiretroviral medicines</td>
<td></td>
<td>▪</td>
<td></td>
<td>▪ Vitamin A supplementation from 6 months of age</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Calcium supplementation to prevent hypertension (high blood pressure)</td>
<td></td>
<td>▪</td>
<td></td>
<td>▪ Routine immunization plus H.influenzae, meningococcal, pneumococcal and rotavirus vaccines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Interventions for cessation of smoking</td>
<td></td>
<td>▪</td>
<td></td>
<td>▪ Management of severe acute malnutrition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>▪</td>
<td></td>
<td>▪ Case management of childhood pneumonia</td>
</tr>
</tbody>
</table>

Key findings
# Reproductive and maternal health interventions

## PRECONCEPTION/PERICONCEPTUAL INTERVENTIONS

<table>
<thead>
<tr>
<th><strong>Priority Interventions</strong></th>
<th><strong>Level of Care (Community, Primary, Referral)</strong></th>
<th><strong>Community or Professional Health Workers</strong></th>
<th><strong>Key Commodities (Supplemented by Annex)</strong></th>
<th><strong>Practice Guidelines and Training Manuals</strong></th>
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</thead>
</table>
| Family planning*          | Community Primary Referral                    | Community workers primary and referral and professional health workers | • Barrier methods (male and female condoms, diaphragm, gels, foams)  
• Oral contraceptives (progestin only and combined)  
• Emergency contraceptives and hormonal injections | • Medical eligibility criteria for contraceptive use  
• Family Planning: a global handbook for providers  
• Surgical Care at the District Hospital  
pgs 9-8, 11-19 |
| Primary Referral          | Professional health workers                   |                                             |                                             |                                             |
|                           |                                               |                                             |                                             |                                             |

* Priority interventions include family planning, primary care, and referral.
### Example of information provided

#### Reproductive and maternal health interventions

**PREGNANCY**

<table>
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<tr>
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</tr>
</thead>
</table>
| Antenatal Care Essential Package | Primary Referral | Professional health workers | • Fetal stethoscope  
• Scale  
• Sphygmomanometer  
• Haemoglobinometer | • Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice [http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf](http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf)  
### Example of information provided

**Reproductive and maternal health interventions**

**CHILDBIRTH**

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</tr>
</thead>
</table>
| b) Active management of third stage of labour to prevent postpartum haemorrhage | Primary Referral | Professional health workers | • Uterotonics (Oxytocin, Ergometrine) | • Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice [http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf](http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf)  
### Reproductive and maternal health interventions

#### POSTNATAL - MOTHER

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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Folic Acid (tablet)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Hydroxycobalamine (injection)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Lab tests</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Blood products</td>
<td></td>
</tr>
</tbody>
</table>
### Example of information provided

#### Newborn care interventions

**IMMEDIATE ESSENTIAL NEWBORN CARE**

<table>
<thead>
<tr>
<th><strong>PRIORITY INTERVENTIONS</strong></th>
<th><strong>LEVEL OF CARE (COMMUNITY, PRIMARY, REFERRAL)</strong></th>
<th><strong>COMMUNITY OR PROFESSIONAL HEALTH WORKERS</strong></th>
<th><strong>KEY COMMODITIES (SUPPLEMENTED BY ANNEX)</strong></th>
<th><strong>PRACTICE GUIDELINES AND TRAINING MANUALS</strong></th>
</tr>
</thead>
</table>
| Promotion and provision of thermal care for all newborns to prevent hypothermia (immediate drying, warming, skin to skin, delayed bathing)³⁵ | Community Primary Referral | Community workers primary and referral and professional health workers | • Materials for counselling, health education and health promotion | • WHO essential newborn care [link](http://www.who.int/making_pregnancy_samer/documents/newborncare_course/en/index.html)  
• WHO. Thermal protection of the newborn: a practical guide (Part of training material) [link](http://www.who.int/making_pregnancy_samer/documents/ws42097th/en/)  
### Example of information provided

**Newborn care interventions**

**NEONATAL INFECTION MANAGEMENT**

<table>
<thead>
<tr>
<th>Priority Interventions</th>
<th>Level of Care (Community, Primary, Referral)</th>
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</tr>
</thead>
</table>
## Example of information provided

### Newborn care interventions

**INTERVENTIONS FOR SMALL AND ILL BABIES**

<table>
<thead>
<tr>
<th>Priority Interventions</th>
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<th>Practice Guidelines and Training Manuals</th>
</tr>
</thead>
</table>
| Kangaroo mother care (KMC) for preterm and for < 2000g babies | Primary Referral | Professional health workers | • Materials for counselling, health education and health promotion  
• Support Binder for KMC (KMC wrap)  
• Hat  
• Nasogastric tube | • WHO | Kangaroo mother care: a practical guide  
www.who.int/making_pregnancy_safer/documents/9241590351/en/  
• WHO, Essential newborn care course (2010) - Training Tool  
www.who.int/making_pregnancy_safer/documents/newborncare_course/en/ |
### INFANCY AND CHILDHOOD

**Example of information provided**

**Child health interventions**

<table>
<thead>
<tr>
<th>Priority Interventions</th>
<th>Level of care (Community, Primary, Referral)</th>
<th>Community or professional health workers</th>
<th>Key commodities (supplemented by annex)</th>
<th>Practice guidelines and training manuals</th>
</tr>
</thead>
</table>
| Promotion and support for exclusive breastfeeding for 6 months[^78][^79] | Community Primary Referral | Community workers primary and referral and professional health workers | • Materials for counselling, health education and health promotion, including individual and group counselling | • WHO. Exclusive Breastfeeding  
[www.who.int/nutrition/topics/exclusive_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/)  
• WHO. Infant and young child feeding counselling: an integrated course (2006) - Training tool  
• WHO. Community-based strategies for breastfeeding promotion and support in developing countries (2003) - Technical Review  
• WHO. IMCI chart booklet (2008)  
### INFANCY AND CHILDHOOD

<table>
<thead>
<tr>
<th>PRIORITY INTERVENTIONS</th>
<th>LEVEL OF CARE (COMMUNITY, PRIMARY, REFERRAL)</th>
<th>COMMUNITY OR PROFESSIONAL HEALTH WORKERS</th>
<th>KEY COMMODITIES (SUPPLEMENTED BY ANNEX)</th>
<th>PRACTICE GUIDELINES AND TRAINING MANUALS</th>
</tr>
</thead>
</table>
| Case management of childhood pneumonia<sup>52</sup>  
  a) Vitamin A as part of treatment for measles-associated pneumonia for children above 6 months<sup>53, 94</sup>  
  b) Vitamin A as part of treatment for non-measles-associated pneumonia for children above 6 months<sup>92, 95-98</sup> | Community Primary Referral | Community workers primary and referral and professional health workers | Community and Health Facility level  
  • Respiratory rate timers  
  • Vitamin A capsules  
  • Appropriate antibiotics  
  Referral level  
  • Oxygen for severe pneumonia  
  • Pulse oximeter |  
  • WHO. Manual for the Community Health Worker: Caring for the sick child in the community (Working Version)  
  • WHO and UNICEF. Management of Sick Children by Community Health Worker (2006)  
  • WHO. IMCI chart booklet (2008) - Guideline  
  • WHO. Pocket book of hospital care for children - Guideline  
Research methodology

Selection of interventions

Essential interventions were prioritized according to the following criteria:

- Evidence of their efficacy, effectiveness and impact on survival;
- Their delivery through the different levels of the health sector;
- Their suitability for implementation in low- and middle- resource settings.

Classification of interventions

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>EVIDENCE FOR INTERVENTION CATEGORIES</th>
<th>DELIVERY STRATEGIES</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Intervention evidence agreed</td>
<td>Delivery strategy agreed</td>
<td>Disseminate for rapid scale-up</td>
</tr>
<tr>
<td>B</td>
<td>Intervention evidence agreed</td>
<td>Delivery strategy no consensus</td>
<td>Collate evidence and define gaps in evidence for delivery strategies – seek consensus</td>
</tr>
<tr>
<td>C</td>
<td>Intervention evidence still questioned</td>
<td>Delivery strategy no consensus</td>
<td>Further research required</td>
</tr>
</tbody>
</table>
Active management is superior to expectant management. This was seen with statistically significant results in the outcomes of blood loss, postpartum haemorrhage, severe postpartum haemorrhage, need for blood transfusion and post partum anaemia.

**TABLE 1. Summary impact estimates of active management of third stage labour**

<table>
<thead>
<tr>
<th>Reproductive Health Outcomes</th>
<th>Maternal Outcomes</th>
<th>Pregnancy Outcomes</th>
<th>Newborn/Infant Outcomes</th>
<th>Child Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active management versus expectant management of third stage of labour. (Abalos 2009)b</td>
<td>Blood loss (reduced) (weighted mean difference (WMD)) = -79.33, 95%CI [-94.29, 64.37]</td>
<td>Postpartum haemorrhage: RR= 0.38, 95%CI [0.32, 0.46]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Severe postpartum hemorrhage: RR=0.38 95%CI [0.15, 0.97]</td>
<td>Blood transfusion: RR=0.34, 95%CI [0.22, 0.53]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maternal Anaemia: RR=0.40, 95%CI [0.29, 0.55]</td>
<td></td>
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</tr>
</tbody>
</table>
## Active management of third stage labour

### TABLE 2. Level of health care at which the intervention can be delivered

<table>
<thead>
<tr>
<th>Intervention category</th>
<th>Intervention</th>
<th>Community - household</th>
<th>Community - first level facilities</th>
<th>Outreach</th>
<th>Secondary level referral facilities</th>
<th>Tertiary</th>
<th>Cross-cutting e.g. fortification and poverty alleviation/cash support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>Active management of third stage of labour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 3. Supportive delivery strategies and care providers for this intervention

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mass media (including social marketing strategies, health days, etc)</th>
<th>Facilitated community and advocacy groups</th>
<th>Family members</th>
<th>Lay health workers</th>
<th>Trained Community Health Workers (outreach workers)</th>
<th>Other cadres of community- and facility-based health workers (e.g. dispensers, technicians, vaccinators)</th>
<th>Traditional birth attendants (TBAs)</th>
<th>Community-based professional midwives</th>
<th>Nursing staff</th>
<th>Medical (doctors) in first-level and other facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active management of third stage of labour</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Active management of third stage labour

Background references


Cochrane reviews

- McDonald SJ, Abbott JM, Higgins SP. Prophylactic ergometrine-oxytocin versus oxytocin for the third stage of labour. Cochrane Database of Systematic Reviews 2004;Issue 1. Art. No.: CD000201;
- Peña-Martí G, Comunián-Carrasco G. Fundal pressure versus controlled cord traction as part of the active management of the third stage of labour. Cochrane Database of Systematic Reviews 2007;Issue 4. Art. No.: CD005462;

GRADE and LiST tool reviews

<table>
<thead>
<tr>
<th>GRADE and LiST tool reviews</th>
<th>Key RCTs</th>
<th>Reports from agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
**Vitamin A Supplementation**

**Vitamin A supplementation in children after six months of age reduces all-cause mortality and diarrhoea specific and measles specific mortality**

**TABLE 1. Summary impact estimates of vitamin A supplementation**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All cause mortality:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RR 0.75 [95% CI 0.65-0.87] a (Imdad et al. 2011)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RR 0.76 (95% CI: 0.69-0.83) a (Imdad 2010)</td>
</tr>
</tbody>
</table>

|                              |                   |                    |                         | Cause specific Mortality - Diarrhoea: |
|                              |                   |                    |                         | RR 0.68 [95% CI 0.57-0.81] a (Imdad et al. 2011) |
|                              |                   |                    |                         | RR 0.72 (95% CI: 0.57-0.91) a (Imdad 2010) |

|                              |                   |                    |                         | Cause specific Mortality - Pneumonia: |
|                              |                   |                    |                         | RR 1.02 [95% CI 0.78-1.33] a (Imdad et al. 2011) |

|                              |                   |                    |                         | Cause specific Mortality - Measles: |
|                              |                   |                    |                         | RR 0.81 [95% CI 0.58-1.14] a (Imdad et al. 2011) |
|                              |                   |                    |                         | RR 0.50 (95% CI: 0.37-0.67) a (Imdad 2010) |

|                              |                   |                    |                         | Increased risk of vomiting within the first 48 hours |
|                              |                   |                    |                         | RR 2.75; 95% CI: 1.81-4.19 (Imdad 2010) |

a = GRADE system used  

b = GRADE system not used
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</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>Vitamin A supplementation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
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**TABLE 3. Supportive delivery strategies and care providers for this intervention**

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<tr>
<td>Vitamin A supplementation</td>
<td>•</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ = Actual evidence  ● = Plausible evidence
Vitamin A Supplementation

Background references


GRADE and LiST tool reviews


Cochrane reviews


Other meta-analyses in indexed publications | Key RCTs | Reports from agencies
---|---|---
6 | 93 | 1
Thank you