



ESSENTIAL INTERVENTIONS, COMMODITIES AND GUIDELINES

for Reproductive,
Maternal, Newborn
and Child Health



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

DRAFT

Publication reference: The Partnership for Maternal, Newborn & Child Health. 2011. *Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health*. Geneva, Switzerland: PMNCH.

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ONE-PAGE SUMMARY OF ESSENTIAL INTERVENTIONS

ESSENTIAL, EVIDENCE-BASED INTERVENTIONS TO REDUCE REPRODUCTIVE, MATERNAL,

CONTINUUM OF CARE	ADOLESCENCE & PRE-PREGNANCY	PREGNANCY (ANTENATAL)	BIRTH
ALL LEVELS: COMMUNITY PRIMARY REFERRAL	<ul style="list-style-type: none"> Family planning (advice, hormonal and barrier methods) Prevent and manage sexually transmitted infections, HIV Folic acid fortification/supplementation to prevent neural tube defects 	<ul style="list-style-type: none"> Iron and folic acid supplementation Tetanus vaccination Prevention and management of malaria with insecticide treated nets and antimalarial medicines Prevention and management of sexually transmitted infections and HIV, including with antiretroviral medicines Calcium supplementation to prevent hypertension (high blood pressure) Interventions for cessation of smoking 	<ul style="list-style-type: none"> Prophylactic uterotonics to prevent postpartum haemorrhage (excessive bleeding after birth) Manage postpartum haemorrhage using uterine massage and uterotonics Social support during childbirth
PRIMARY AND REFERRAL	<ul style="list-style-type: none"> Family planning (hormonal, barrier and selected surgical methods) 	<ul style="list-style-type: none"> Screening for and treatment of syphilis Low dose aspirin to prevent pre-eclampsia (high blood pressure) Antihypertensive drugs (to treat high blood pressure) Magnesium sulphate for pregnancy-induced eclampsia (high blood pressure) Antibiotics for preterm/prelabour rupture of membranes Corticosteroids to prevent respiratory distress syndrome in newborns Safe abortion, where legal Post abortion care 	<ul style="list-style-type: none"> Active management of third stage of labour (to deliver the placenta) to prevent postpartum haemorrhage (<i>as above plus controlled cord traction</i>) Management of postpartum haemorrhage (<i>as above plus manual removal of placenta</i>)
REFERRAL	<ul style="list-style-type: none"> Family planning (surgical methods) 	<ul style="list-style-type: none"> Reduce malpresentation at term with External Cephalic Version (Align the baby for safe delivery) Induction of labour to manage prelabour rupture of membranes at term (Initiate delivery) 	<ul style="list-style-type: none"> Caesarean section for absolute maternal indication (to save the life of the mother) Prophylactic antibiotic for caesarean section Induction of labour for prolonged pregnancy (Initiate labour) Management of post-partum haemorrhage (<i>as above plus surgical procedures</i>)
COMMUNITY STRATEGIES	<ul style="list-style-type: none"> Home visits for women and children across the continuum of care Women's groups 		

NEWBORN AND CHILD MORTALITY, AND PROMOTE REPRODUCTIVE HEALTH

POSTNATAL (MOTHER)	POSTNATAL (NEWBORN)	INFANCY & CHILDHOOD
<ul style="list-style-type: none"> Family planning advice and contraceptives Nutrition counselling 	<ul style="list-style-type: none"> Immediate thermal care (to keep the baby warm) Initiation of early breastfeeding (within the first hour) Hygienic cord and skin care 	<ul style="list-style-type: none"> Exclusive breastfeeding for 6 months Continued breastfeeding and complementary feeding from 6 months. Prevention and case management of childhood malaria Vitamin A supplementation from 6 months of age Routine immunization plus <i>H.influenzae</i>, meningococcal, pneumococcal and rotavirus vaccines Management of severe acute malnutrition Case management of childhood pneumonia Case management of diarrhoea
<ul style="list-style-type: none"> Screen for and initiate or continue antiretroviral therapy for HIV (family planning advice, contraception) Treat maternal anaemia 	<ul style="list-style-type: none"> Neonatal resuscitation with bag and mask (by professional health workers for babies who do not breathe at birth) Kangaroo mother care for preterm (premature) and for less than 2000g babies Extra support for feeding small and preterm babies Management of newborns with jaundice (“yellow” newborns) 	<ul style="list-style-type: none"> Comprehensive care of children infected with or exposed to HIV infection
<ul style="list-style-type: none"> Detect and manage postpartum sepsis (serious infections after birth) 	<ul style="list-style-type: none"> Presumptive antibiotic therapy for newborns at risk of bacterial infection Use of surfactant (respiratory medication) to prevent respiratory distress syndrome in preterm babies Continuous positive airway pressure (CPAP) to manage babies with respiratory distress syndrome Case management of neonatal sepsis, meningitis and pneumonia 	<ul style="list-style-type: none"> Case management of meningitis

WHY REPRODUCTIVE, MATERNAL, NEWBORN AND CHILD HEALTH?

Poor maternal, newborn and child health remains a significant problem in developing countries. Worldwide, 358,000 women die during pregnancy and childbirth every¹ year and an estimated 7.6 million children die under the age of five.² The majority of maternal deaths occur during or immediately after childbirth. The common medical causes for maternal death include bleeding, high blood pressure, prolonged and obstructed labour, infections and unsafe abortions. A child's risk of dying is highest during the first 28 days of life when about 40% of under-five deaths take place, translating into three million deaths.² Up to one half of all newborn deaths occur within the first 24 hours of life and 75% occur in the first week. Globally, the main causes of neonatal death are preterm birth, severe infections, and asphyxia. Children in low-income countries are nearly 18 times more likely to die before the age of five than children in high-income countries.²

Good maternal health and nutrition are important contributors to child survival; Maternal infections and other poor conditions often contribute to newborn adverse outcomes.

The highest maternal, neonatal and under-five mortality rates are in sub-Saharan Africa -and in Southern Asia.² Although substantial progress has been made towards achieving the Millennium Development Goals (MDGs) 4 and 5, the rates of decline in maternal, newborn and under-five mortality remain insufficient to achieve these goals by 2015. Interventions and strategies for improving maternal, newborn and child health and survival are closely related and must be provided through a continuum of care approach. When linked together and included as integrated programmes, these interventions can lower costs, promote greater efficiencies, and reduce duplication of resources. However, few efforts have been made to identify synergies and integrate these interventions across the continuum of care. Despite of the existing plethora of knowledge, there is a lack of consensus on how best to move forward in a coordinated manner so as to achieve progress towards the MDG's. Furthermore consensus is also needed on the level of evidence.

The foremost aim of this global review is to compile existing evidence of the impact of different maternal, newborn and child interventions on conditions linked to the main causes of maternal newborn and under-five deaths. The specific objectives of this review were to:

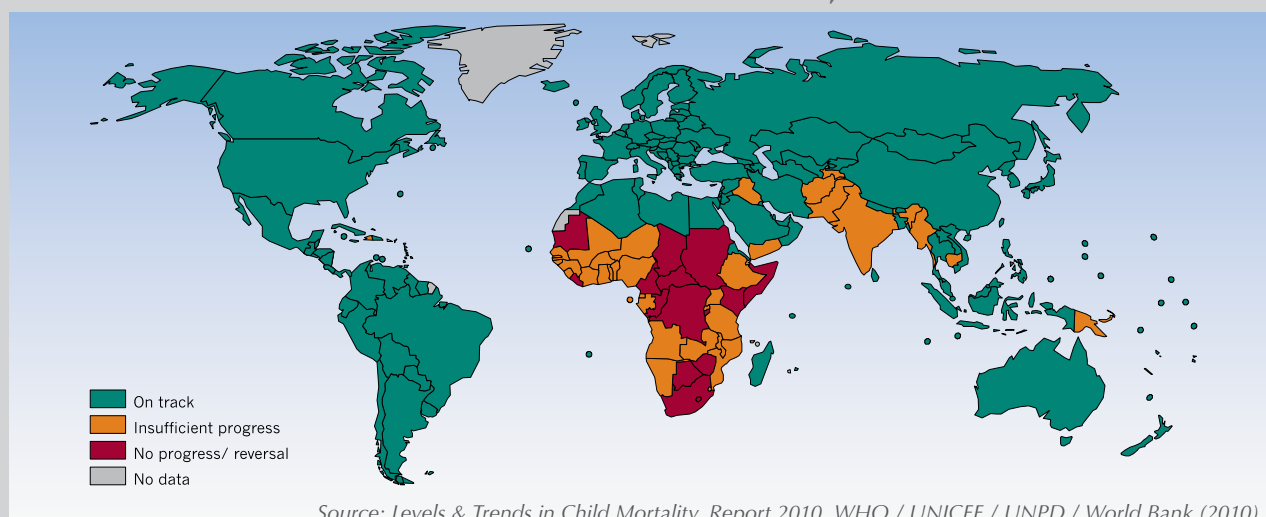
- Develop consensus on the content of RMNCH packages of interventions at each level of the health system across the continuum of care.
- Design an agreement plan on how to scale-up these interventions.
- Identify research gaps in the content of core packages of interventions.
- Build consensus on revised core RMNCH packages to be delivered at each level and agreement on how to scale up.

1. Trends in Maternal Mortality 1990 to 2008. Estimates developed by WHO, UNICEF, UNFPA and The World Bank. (2010)

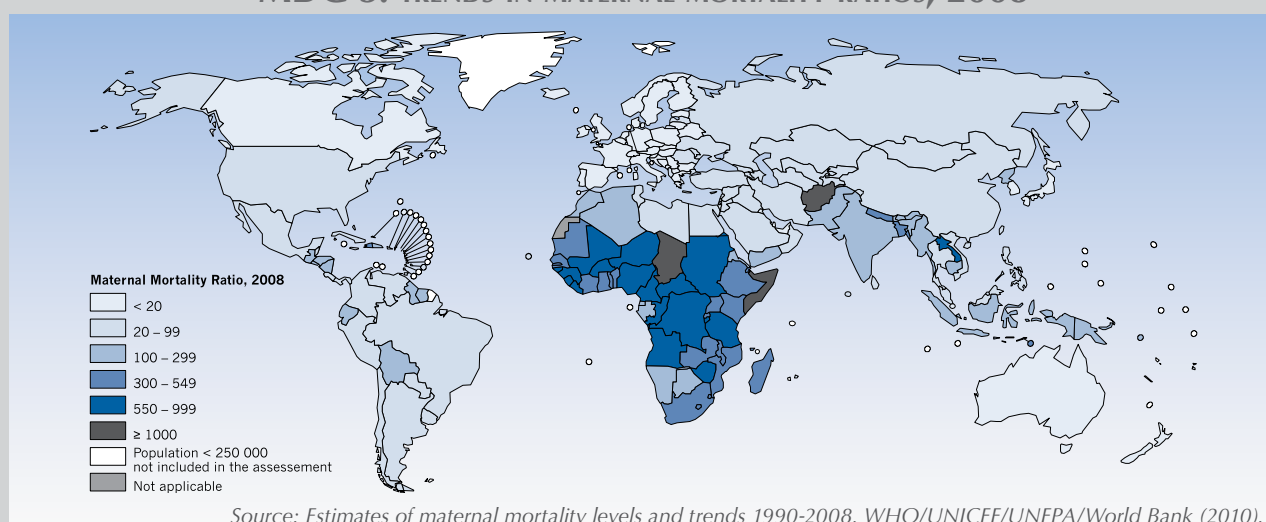
2. Levels & trends in Child Mortality. Report 2011. Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. (2011)

FIGURE 1:

MDG 4: TRENDS IN UNDER-FIVE MORTALITY, 1990 - 2007



MDG 5: TRENDS IN MATERNAL MORTALITY RATIOS, 2008



METHODOLOGY

Search strategy

A total of 142 RMNCH interventions were identified, assessed and selected for this review, based on current WHO recommendations contained in the following publications: Guidelines on HIV and Infant Feeding (2010); Integrated Management of Childhood Illness (2008); Integrated Management of Childhood Illness for High HIV Settings (2008), the Pocketbook on Hospital Care For Children (2005), Integrated Management of Pregnancy and Childbirth clinical guidelines (2007); Recommended interventions for improving maternal and newborn health - Integrated management of pregnancy and childbirth (2007). Interventions published in the Child and Neonatal Lancet Series (2003 and 2005, respectively) as well as in the WHO Recommended interventions for improving maternal and newborn health (2010).

Inclusion criteria comprised the following: (i) the intervention has an alleged impact on reducing maternal, neonatal and child *mortality*; (ii) the intervention is suitable for delivery in low- and middle-income countries, and/or settings where minimal essential care is generally available; and (iii) the intervention is delivered through the health sector (community level up to the referral level of health care).

Relevant reviews for each intervention were identified from the following electronic databases: the Cochrane database of systematic reviews, the Cochrane database of abstract reviews of effectiveness (DARE), the Cochrane database of systematic reviews of randomized control trials (RCT's), and PubMed. The reference lists of the reviews and recommendations from experts in the field were also used as sources to obtain additional publications. The principal focus was on the existing systematic reviews and meta-analysis.

Classification of interventions

The interventions were classified into categories A, B and C, according to the framework provided in **box 1**.

Box 1:

CATEGORY	EVIDENCE FOR INTERVENTION GRADE CATEGORIES	DELIVERY STRATEGIES	ACTION
A	Intervention evidence agreed	Delivery strategy agreed	Disseminate for rapid scale up
B	Intervention evidence agreed	Delivery strategy no consensus	Collate evidence and define gaps in evidence for delivery strategies – seek consensus
C	Intervention evidence still questioned	Delivery strategy no consensus	Further research required

The classification of the effect of interventions according to the evidence available was done based on that used by the Cochrane group, as follows:

A	B	C	D	E
Interventions that are beneficial	Interventions likely to be beneficial	Interventions with a trade-off between beneficial and adverse effects	Interventions of unknown effect, including absence of reviews	Interventions likely to be ineffective or harmful

This classification benefited from being broadly known, recognized and accepted since it is the classification used by the Cochrane systematic review process that has guided this exercise from the beginning. The “evidence” was restricted to published systematic reviews; not including single studies.

The origin of evidence included the following three different levels of delivery of interventions and these were defined in the publication by the World Bank “Providing Interventions”:

COMMUNITY LEVEL/HOME



(1) COMMUNITY LEVEL/HOME – Health care providers at this level includes community health workers and outreach workers. It utilizes resources such as volunteers’ time, local knowledge, and community confidence and trust as channels for delivery of interventions generally related to safe motherhood, nutrition, and simple prevention and treatments. Many countries have attempted to construct links between community-based health care resources and households for

a range of health programs. These programs do not substitute for a health system, but provide a channel for reaching families with information and resources. Community health workers (CHWs) not only promote healthy behaviors and preventive action but can mobilize demand for appropriate services at other levels. The success of community health efforts depends critically on the context, including level of development of infrastructure, services, and socioeconomic resources.

FIRST LEVEL/OUTREACH



(2) FIRST LEVEL/OUTREACH - Health care providers at this level of care includes professionals, outreach workers as well as the community health workers. It includes a range of initiatives that are associated with the Alma Ata Declaration on Primary Health Care approved by WHO in 1978. More recently, the WHO Commission on Macroeconomics and Health described the need for developing services that are close to the client. The basic notion is a common one:

recognition that a certain range of health care services must act as an interface between families and community programs on the one hand, and hospitals and national health policies on the other. There has been substantial convergence in the content of general first level primary care over time: maternity related care (for instance, prenatal care, skilled birth attendance, and family planning), interventions to address childhood diseases (such as vaccine preventable diseases, acute respiratory infections, diarrhea and prevention and treatment of major infectious diseases).

REFERRAL LEVEL/DISTRICT HOSPITAL



(3) REFERRAL LEVEL - This level of delivery of interventions refers to hospitals in general. These can be either district hospitals or referral hospitals. The health care providers at this level are professionals.

District hospitals - Generally designed to serve people with services that are more sophisticated, technically demanding, and specialized than those available at a primary care

facility/first level care, but not as specialized as those provided by referral hospitals. Their range of services includes diagnostics, treatment, care, counseling, and rehabilitation. District hospitals may also provide health information, training, and administrative and logistical support to primary and community health care programs. It concentrates skills and resources in one place for the delivery of interventions for conditions that are either uncommon or difficult to treat. It is also a repository of knowledge and diagnostic tools for assessing whether referral to an even more specialized facility is indicated.

Referral hospitals - Referral hospitals provide complex clinical care interventions to patients referred from the community, primary/first, or district hospital levels. Referral hospitals need to provide many forms of support, including advice on which patients to refer, proper post discharge care, and long-term management of chronic conditions. Referral hospitals can also provide important managerial and administrative support to other facilities, serving as gateways for drugs and medical supplies, laboratory testing services, general procurement, data collection from health information systems, and epidemiological surveillance. They are also the vehicle for disseminating technologies by training new staff and providing continuing professional education for existing staff at different facilities.

Criteria for prioritization

The interventions were prioritized according to the following criteria:

- Interventions expected to have a **significant impact on maternal, newborn and child survival**, addressing the main causes of maternal, newborn and child mortality
- Interventions suitable for implementation in **low- and middle-income countries**; minimal essential care
- Interventions delivered through the **health sector**, from the community up to the 1st referral level of health service provision.

REPRODUCTIVE AND MATERNAL HEALTH INTERVENTIONS

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
PRECONCEPTION/PERICONCEPTUAL INTERVENTIONS				
Family planning ¹⁻³	Community Primary Referral	ALL	<ul style="list-style-type: none"> Barrier methods (male and female condoms, diaphragm, gels, foams) Oral contraceptives (progestin only and combined) Emergency contraceptives and hormonal injections 	<ul style="list-style-type: none"> Medical eligibility criteria for contraceptive use http://whqlibdoc.who.int/publications/2010/9789241563888_eng.pdf Family Planning: a global handbook for providers http://whqlibdoc.who.int/publications/2011/9780978856373_eng.pdf
	Primary Referral	Professional health workers	<ul style="list-style-type: none"> All of the above plus implants Long acting reversible contraceptives (implants) Intrauterine devices Surgical contraception 	
Prevention and management of Sexually Transmitted Infections (STIs), including HIV for prevention of Mother to Child Transmission (PMTCT) of HIV and syphilis. ^{4, 5}	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling Condoms (male and female) Antibiotics in line with essential medicine guidelines 	<ul style="list-style-type: none"> Sexually transmitted and other reproductive tract infection: a guide to essential practice http://whqlibdoc.who.int/publications/2005/9241592656.pdf Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Rapid advice: use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants http://www.who.int/hiv/pub/mtct/advice/en/index.html
	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Materials for counselling Condoms (male and female) Antibiotics in line with essential medicine guidelines Laboratory test kits for STI/HIV Anti-retroviral medicines (refer to the Essential list of medicines) 	
Folic acid fortification and/or supplementation to prevent Neural Tube Defects. ^{6, 7}	Community Primary Referral	ALL	<ul style="list-style-type: none"> Folic acid fortification of staple food e.g. flour Folic acid tablets 	<ul style="list-style-type: none"> Folic Acid for the Prevention of Neural Tube Defects: U.S. Preventive Services Task Force Recommendation Statement http://www.annals.org/content/150/9/626.abstract
PREGNANCY				
Antenatal Care ⁸				<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf WHO Antenatal Care Randomized Trial: Manual for the implementation of the new model http://whqlibdoc.who.int/hq/2001/WHO_RHR_01.30.pdf
Iron and folic acid supplementation during pregnancy. ⁹⁻¹¹	Primary Referral Community	ALL	<ul style="list-style-type: none"> Iron and Folic acid 	<ul style="list-style-type: none"> Guidelines for the use of iron supplements to prevent and treat iron deficiency anaemia http://www.who.int/nutrition/publications/micronutrients/guidelines_for_iron_supplementation.pdf Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf
Tetanus immunization in pregnancy for preventing neonatal tetanus. ^{12, 13}	Primary Referral Community	ALL	<ul style="list-style-type: none"> Vaccine (TT vaccine) 	<ul style="list-style-type: none"> Neonatal tetanus http://www.who.int/immunization_monitoring/diseases/neonatal_tetanus/en/index.html Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Prevention and management of malaria in pregnancy a) Prophylactic antimalarial for preventing malaria in pregnancy ^{14, 15} b) Provision and promotion of use of Insecticide Treated Nets for preventing malaria in pregnancy ¹⁶	Primary Referral Community	ALL	<ul style="list-style-type: none"> Antimalarial drugs according to the situation/context Insecticide Treated Nets 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Insecticide treated bednets: a WHO position statement http://www.who.int/malaria/publications/atoz/itnspospaperfinal.pdf
Interventions for smoking cessation during pregnancy for improving birth outcomes ¹⁷	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for individual and group counselling and behavioural change interventions on smoking cessation 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf
Screening and treatment of Syphilis ^{18, 19}	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Onsite tests and laboratory equipment Penicillin Counselling material 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf The Prevention and management of congenital syphilis: an overview and recommendations http://www.who.int/bulletin/volumes/82/6/424.pdf
Prevention and management of HIV and Prevention of Mother to Child Transmission in Pregnancy. ²⁰⁻²²	Community Primary Referral	ALL	<ul style="list-style-type: none"> HIV test kits Antiretroviral drugs Cotrimoxazole Counselling material 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Rapid advice: use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants http://www.who.int/hiv/pub/mtct/advice/en/index.html
Prevention and management of hypertension in pregnancy: a) Calcium supplementation in pregnancy ²³⁻²⁵	a) Community Primary Referral	a) ALL	a) Calcium	<ul style="list-style-type: none"> WHO recommendations for the prevention and treatment of pre-eclampsia and eclampsia http://whqlibdoc.who.int/publications/2011/9789241548335_eng.pdf Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
b) Low-dose Aspirin for the prevention of pre-eclampsia in high risk women ^{25, 26}	b) Primary Referral	b) Professional health workers	b) Low dose Aspirin	
c) Use of antihypertensive drugs for treating severe hypertension in pregnancy ^{25, 27}	c) Primary Referral	c) Professional health workers	c) Methyldopa, Hydralazine, Nifedipine	
d) Prevention and treatment of Eclampsia ^{25, 28, 29}	d) Primary Referral	d) Professional health workers	d) Magnesium Sulphate (Injection)	
Reduce malpresentation at term using External Cephalic Version (> 36 weeks) ³⁰⁻³³	Referral	Professional health workers	<ul style="list-style-type: none"> Stethoscope 	<ul style="list-style-type: none"> Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Management of prelabour rupture of membranes and preterm labour:				
a) Induction of labour for management of prelabour rupture of membranes at term. ³⁴	Referral	Professional health workers	<ul style="list-style-type: none"> • Uterotonic (Oxytocin and/or Misoprostol) • Partograph • Stethoscope 	<ul style="list-style-type: none"> • Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf • WHO recommendations for induction of labour http://whqlibdoc.who.int/publications/2011/9789241501156_eng.pdf
b) Antibiotics for management of preterm rupture of membranes. ³⁵	Primary Referral	Professional health workers	<ul style="list-style-type: none"> • Antibiotic (Erythromycin) 	<ul style="list-style-type: none"> • Managing Complications in Pregnancy and Childbirth A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf • Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf
c) Corticosteroids for prevention of neonatal respiratory distress syndrome ^{36, 37}	Primary Referral	Professional health workers	<ul style="list-style-type: none"> • Corticosteroids (Betamethasone, Dexamethasone) 	<ul style="list-style-type: none"> • Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
Management of unintended pregnancy: ³⁸	Primary Referral	Professional health workers	<ul style="list-style-type: none"> • Materials for counselling, health education and health promotion • Medications for induced abortion (Mifepristone, Misoprostol) • Vacuum aspiration equipment • Uterotonics (Misoprostol, Oxytocin) • Antibiotics in line with essential medicine guidelines • Surgical procedures when required 	<ul style="list-style-type: none"> • Safe abortion: technical and policy guidance for health systems. Geneva, World Health Organization, 2003 http://whqlibdoc.who.int/publications/2003/9241590343.pdf • World Health Organization: Clinical practice handbook for safe abortion care. World Health Organization. Geneva. 2011. In Press • Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
CHILDBIRTH				
Social support during childbirth ³⁹	Community Primary Referral	ALL		<ul style="list-style-type: none"> • Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf
Prophylactic antibiotic for caesarean-section. ⁴⁰	Referral	Professional health workers	<ul style="list-style-type: none"> • Antibiotics (Ampicillin or Cefazolin) 	<ul style="list-style-type: none"> • Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
Caesarean section for absolute maternal indication (e.g. obstructed labour and central placenta previa) (established practice)	Referral	Professional health workers	<ul style="list-style-type: none"> • Surgical environment 	<ul style="list-style-type: none"> • Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
Prevention of postpartum haemorrhage				
a) Prophylactic uterotonic to prevent postpartum haemorrhage ^{41, 42}	Community Primary Referral	ALL	<ul style="list-style-type: none"> • Uterotonics (Oxytocin, Misoprostol) 	<ul style="list-style-type: none"> • WHO recommendation for prevention of postpartum haemorrhage http://whqlibdoc.who.int/hq/2007/WHO_MPS_07.06_eng.pdf

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
b) Active management of third stage of labour to prevent postpartum haemorrhage ⁴³⁻⁴⁷	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Uterotonics (Oxytocin, Ergometrine) 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf WHO recommendation for prevention of postpartum haemorrhage http://whqlibdoc.who.int/hq/2007/WHO_MPS_07.06_eng.pdf
Induction of labour for prolonged pregnancy ⁴⁸	Referral	Professional health workers	<ul style="list-style-type: none"> Uterotonics (Oxytocin, Misoprostol) 	<ul style="list-style-type: none"> Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf Managing prolonged and obstructed labour http://www.who.int/making_pregnancy_safer/documents/3_9241546662/en/index.html WHO recommendations for induction of labour http://whqlibdoc.who.int/publications/2011/9789241501156_eng.pdf
Management of post-partum haemorrhage e.g: a) uterine massage b) uterotronics ^{46, 49}	Community Primary Referral	Community health workers Primary and Referral	<ul style="list-style-type: none"> Uterotonics (Oxytocin, Ergometrine, Misoprostol) 	<ul style="list-style-type: none"> Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
c) manual removal of placenta (only by professional health workers)	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Uterotonics (Oxytocin, Ergometrine, Misoprostol) IV fluids Blood transfusion Surgical facilities 	<ul style="list-style-type: none"> WHO guidelines for the management of postpartum haemorrhage and retained placenta http://whqlibdoc.who.int/publications/2009/9789241598514_eng.pdf
POSTNATAL - MOTHER				
Advice and provision of family planning ⁵⁰	Community Primary Referral	ALL	<ul style="list-style-type: none"> Barrier methods (male and female condoms, diaphragm, gels, foams) Oral contraceptives (progestin only and combined) Emergency contraception and hormonal injections 	<ul style="list-style-type: none"> Medical eligibility criteria for contraceptive use http://whqlibdoc.who.int/publications/2010/9789241563888_eng.pdf Family Planning: a global handbook for providers http://whqlibdoc.who.int/publications/2011/9780978856373_eng.pdf
	Primary Referral	Professional Health Workers	<ul style="list-style-type: none"> All of the above plus implantants Long acting reversible contraceptives (implants) Intrauterine devices Surgical contraception 	
Prevent, measure and treat maternal anaemia ⁵¹	Referral	Professional health workers	<ul style="list-style-type: none"> Ferrous Salt (liquid or tablet) Ferrous Salt+Folic Acid (tablet) Folic Acid (tablet) Hydroxycobalamine (Injection) Lab tests Blood products 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Detection and management of postpartum sepsis. ⁵²	Referral	Professional health workers	<ul style="list-style-type: none"> Antibiotics (Ampicillin, Gentamicin, Metronidazole) 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors http://whqlibdoc.who.int/publications/2007/9241545879_eng.pdf
Screening and initiation or continuation of Antiretroviral therapy for HIV ²⁰	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Antiretroviral medicines HIV test kits 	<ul style="list-style-type: none"> Pregnancy, Childbirth, Postpartum and Newborn Care: a guide to essential practice http://whqlibdoc.who.int/publications/2006/924159084X_eng.pdf Rapid advice: use of antiretroviral drugs for treating pregnant women and preventing HIV infection in infants http://www.who.int/hiv/pub/mtct/advice/en/index.html



NEWBORN CARE INTERVENTIONS - BIRTH AND POSTNATAL

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
IMMEDIATE ESSENTIAL NEWBORN CARE (AT THE TIME OF BIRTH)				
Promotion and provision of thermal care for all newborns to prevent hypothermia (immediate drying, warming, skin to skin, delayed bathing) ⁵³	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion 	<ul style="list-style-type: none"> WHO essential newborn care http://www.who.int/making_pregnancy_safer/documents/newborncare_course/en/index.html WHO. Thermal protection of the newborn: a practical guide (Part of training material) http://www.who.int/making_pregnancy_safer/documents/ws42097th/en/ WHO. IMCI chart booklet (2008) http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html
Promotion and support for early initiation and exclusive breastfeeding (within the first hour) ⁵⁴⁻⁵⁷	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion 	<ul style="list-style-type: none"> WHO. Infant and Young child feeding - Programming Guide http://www.who.int/child_adolescent_health/documents/9241591218/en/index.html WHO. IMCI chart booklet (2008) http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html Infant young child feeding counselling: An integrated course http://www.who.int/nutrition/publications/infantfeeding/9789241594745/en/index.html (Part of training material)
Promotion and provision of hygienic cord and skin care. ⁵⁸	Community Primary Referral	ALL	<ul style="list-style-type: none"> Cord clamp and scissors Clean birth kit for health facilities 	<ul style="list-style-type: none"> WHO Essential newborn care http://www.who.int/making_pregnancy_safer/documents/newborncare_course/en/index.html WHO. IMCI chart booklet (2008) http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html WHO. IMPAC - Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice (2006) http://www.who.int/making_pregnancy_safer/documents/924159084x/en/index.html
Neonatal resuscitation with bag and mask for babies who do not breath at birth ⁵⁹⁻⁶¹	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Training aids and devices to maintain competencies Newborn resuscitation device (Ambu Bag, bag-mask and suction device) 	<ul style="list-style-type: none"> American Academy of Pediatrics Helping babies breathe - The Golden Minute http://www.helpingbabiesbreathe.org/masterTrainers.html Basic newborn resuscitation - (WHO) http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/MSM_98_1/en/index.html
Newborn immunization	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Vaccines, syringes, safety boxes, cold chain equipment 	<ul style="list-style-type: none"> WHO Vaccine Position papers http://www.who.int/immunization/position_papers/en/
NEONATAL INFECTION MANAGEMENT				
Presumptive antibiotic therapy for the newborns at risk of bacterial infection. ⁶²	Referral	Professional health workers	<ul style="list-style-type: none"> Antibiotics (ampicillin and gentamicin or penicillin) 	<ul style="list-style-type: none"> WHO. Managing newborn problems - a guide for doctors, nurses and midwives http://www.who.int/making_pregnancy_safer/documents/9241546220/en/index.html WHO. IMPAC - Pregnancy, childbirth, postpartum and newborn care: a guide for essential practice (2006) http://www.who.int/making_pregnancy_safer/documents/924159084x/en/index.html

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Case management of neonatal sepsis, meningitis and pneumonia. ⁶³⁻⁶⁷	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion Thermometer / digital thermometer Timer Blood sugar sticks (disposable) Nasogastric tube Antibiotics (oral and injectable) 	<ul style="list-style-type: none"> WHO. IMCI chart booklet (2008) http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html WHO. Pocket book of hospital care for children: http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html
INTERVENTIONS FOR SMALL AND ILL BABIES				
Kangaroo mother care for preterm and for < 2000g babies. ^{68, 69}	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion Support Binder for KMC (KMC wrap) Hat Nasogastric tube 	<ul style="list-style-type: none"> WHO Kangaroo mother care: a practical guide http://www.who.int/making_pregnancy_safer/documents/9241590351/en/ WHO. Essential newborn care course (2010) - Training Tool http://www.who.int/making_pregnancy_safer/documents/newborn_care_course/en/
Extra support for feeding the small and preterm baby. ⁷⁰	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Nasogastric tubes Feeding cups Breast pump Syringe drivers Blood sugar testing sticks Materials for counselling 	<ul style="list-style-type: none"> WHO guide for feeding preterm and LBW babies (forthcoming in the web) WHO. Essential newborn care course (2010) - Training Tool http://www.who.int/making_pregnancy_safer/documents/newborn_care_course/en/
Prophylactic and therapeutic use of surfactant to prevent respiratory distress syndrome in pre-term babies ⁷¹⁻⁷³	Referral	Professional health workers	<ul style="list-style-type: none"> Surfactant Oxygen supply/concentrator Pulse oximeter 	<ul style="list-style-type: none"> WHO. IMPAC - Managing newborn problems: a guide for doctors, nurses and midwives (2003) - Guideline http://www.who.int/making_pregnancy_safer/documents/9241546220/en/index.html
Continuous positive airway pressure (CPAP) to manage pre-term babies with respiratory distress syndrome ⁷⁴⁻⁷⁶	Referral	Professional health workers	<ul style="list-style-type: none"> Standard CPAP or bubble CPAP Oxygen supply/concentrator Pulse oximeter 	<ul style="list-style-type: none"> WHO. IMPAC - Managing newborn problems: a guide for doctors, nurses and midwives (2003) - http://www.who.int/making_pregnancy_safer/documents/9241546220/en/index.html
Management of newborns with jaundice. ^{77, 78}	Primary Referral	Professional health workers	<ul style="list-style-type: none"> Bilirubinometer Phototherapy lamp eye shade IV fluids Exchange transfusion kit 	<ul style="list-style-type: none"> WHO. Pocket book of hospital care for children (2005) http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html WHO. IMPAC - Managing newborn problems: a guide for doctors, nurses and midwives (2003) http://www.who.int/making_pregnancy_safer/documents/9241546220/en/index.html

CHILD HEALTH INTERVENTIONS

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
INFANCY AND CHILDHOOD				
Promotion and support for exclusive breastfeeding for 6 months ^{79, 80}	Referral Primary Community	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion, including individual and group counselling 	<ul style="list-style-type: none"> WHO. Exclusive Breastfeeding http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/ WHO. Infant and young child feeding counselling: an integrated course (2006) - Training tool http://www.who.int/nutrition/publications/infantfeeding/9789241594745/en/index.html WHO. Community-based strategies for breastfeeding promotion and support in developing countries (2003) - Technical Review http://www.who.int/child_adolescent_health/documents/9241591218/en/index.html WHO. IMCI chart booklet (2008) http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html
Promotion and support of continued breastfeeding and complementary feeding a) Continued breastfeeding up to 2 years and beyond ⁸⁰ b) Appropriate complementary feeding starting at 6 months ^{81, 82}	Referral Primary Community	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion 	<ul style="list-style-type: none"> WHO. Guiding principles for complementary feeding of the breastfed child (2003) http://whqlibdoc.who.int/paho/2003/a85622.pdf WHO. Guiding principles for feeding non-breastfed children 6-24 months of age (2005) http://www.who.int/child_adolescent_health/documents/9241593431/en/index.html
Prevention and management of childhood malaria a) Provision and promotion of use of insecticide treated bed nets for children ^{14, 83} b) Case management of childhood malaria ⁸⁴	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion Insecticide treated nets Rapid diagnostic tests Antimalarial drugs according to guidelines 	<ul style="list-style-type: none"> WHO. Insecticide-treated mosquito nets: a position statement (2007) http://www.who.int/malaria/publications/atoz/itnspospaperfinal/en/index.html WHO. Guidelines for the treatment of malaria (2010) http://whqlibdoc.who.int/publications/2010/9789241547925_eng.pdf WHO. IMCI chart booklet being updated at http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html WHO. Pocket book of hospital care for children-guidelines for the management of common illnesses with limited resources being updated http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html WHO. Emergency Triage Assessment and Treatment (ETAT) course at http://www.who.int/child_adolescent_health/documents/9241546875/en/index.html

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Comprehensive care of children infected or exposed to HIV infection. ^{4, 85}	Referral Primary	Professional health workers	<ul style="list-style-type: none"> Antiretroviral drugs HIV test kits Cotrimoxazole Psychosocial support Nutritional support 	<ul style="list-style-type: none"> WHO. Guidelines on HIV and infant feeding 2010 http://www.who.int/nutrition/publications/hivaid/9789241599535/en/index.html WHO. Manual on paediatric HIV care and treatment for district hospitals http://www.who.int/child_adolescent_health/documents/9789241501026/en/index.html WHO recommendations on the management of diarrhoea and pneumonia in HIV-infected infants and children http://www.who.int/child_adolescent_health/documents/9789241548083/en/index.html WHO. IMCI chart booklet for high HIV settings http://www.who.int/child_adolescent_health/documents/9789241597388/en/index.html WHO. Pocket book of hospital care for children: guidelines for the management of common illnesses with limited resources http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html
Promote and provide routine immunization plus <i>H.influenzae</i> , meningococcal, pneumococcal, and rotavirus vaccines ^{86, 87}	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion Vaccines, syringes, safety boxes, cold chain equipment 	<ul style="list-style-type: none"> WHO. IMCI chart booklet (2008) - Guideline http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html
Vitamin A supplementation from 6 months of age in Vitamin A deficient populations ^{88, 89}	Community Primary Referral	ALL	<ul style="list-style-type: none"> Vitamin A capsules Material for counselling on Vitamin A rich foods 	<ul style="list-style-type: none"> WHO Guideline: Vitamin A supplementation in infants and children 6-59 months of age (2011) http://www.who.int/nutrition/publications/micronutrients/guidelines/vas_6to59_months/en/index.html
Management of severe acute malnutrition: ^{90, 91} a) without complications (all levels) b) with complications (Referral)	Community Primary Referral	ALL	<p>Community level</p> <ul style="list-style-type: none"> Appropriate ready-to-use therapeutic foods Micronutrient supplements Vitamin A capsules <p>Health Facility level</p> <ul style="list-style-type: none"> Antibiotics Therapeutic food formulations (F75/100) 	<ul style="list-style-type: none"> WHO. Management of severe malnutrition: a manual for physicians and other senior health workers (1999) http://www.who.int/nutrition/publications/severemalnutrition/en/manage_severe_malnutrition_eng.pdf WHO. Pocket book of hospital care for children: guidelines for the management of common illnesses with limited resources http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html
Case management of childhood pneumonia ⁹² a) Vitamin A as part of treatment for measles-associated pneumonia for children above 6 months ^{93, 94} b) Vitamin A as part of treatment for non-measles-associated pneumonia for children above 6 months ^{92, 95-98}	Community Primary Referral	ALL	<p>Community level</p> <ul style="list-style-type: none"> Respiratory rate timers Vitamin A capsules <p>Health Facility level</p> <ul style="list-style-type: none"> Antibiotics <p>Referral level</p> <ul style="list-style-type: none"> Oxygen for severe pneumonia Pulse oximeter 	<ul style="list-style-type: none"> 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) http://www.unicef.org/publications/files/Management_of_Sick_Children_by_Community_Health_Workers.pdf WHO. IMCI chart booklet (2008) - Guideline http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html WHO. Pocket book of hospital care for children - Guideline http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
Case management of diarrhoea: a) Acute watery diarrhoea ⁹⁹⁻¹⁰⁵ b) Dysentery ^{106, 107}	Community Primary Referral	ALL	<ul style="list-style-type: none"> Materials for counselling, health education and health promotion Zinc (tablets / solution) ORS Appropriate antibiotics for dysentery according to guidelines 	<ul style="list-style-type: none"> WHO Guidelines on hand hygiene in health care (2009) http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf WHO. Guidelines for Drinking Water Safety (2011) http://www.who.int/water_sanitation_health/publications/2011/dwc_guidelines/en/index.html WHO. Guidelines for the safe use of wastewater, excreta and greywater (2006) http://www.who.int/water_sanitation_health/wastewater/gsuww/en/index.html WHO. Manual for the Community Health Worker: Caring for the sick child in the community (Working Version) WHO. Management of Sick Children by Community Health Worker (2006) http://www.unicef.org/publications/files/Management_of_Sick_Children_by_Community_Health_Workers.pdf WHO. IMCI chart booklet (2008) - Guideline http://www.who.int/child_adolescent_health/documents/IMCI_chartbooklet/en/index.html WHO. Pocket book of hospital care for children - Guideline http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html
Case management of meningitis	Referral	Professional health workers	<ul style="list-style-type: none"> Appropriate Antibiotics Supportive treatment 	<ul style="list-style-type: none"> WHO. Pocket book of hospital care for children - Guideline http://www.who.int/child_adolescent_health/documents/9241546700/en/index.html

CROSS-CUTTING COMMUNITY STRATEGIES

PRIORITY INTERVENTIONS	LEVEL OF CARE (REFERRAL, PRIMARY, COMMUNITY)	COMMUNITY OR PROFESSIONAL HEALTH WORKERS	KEY COMMODITIES (SUPPLEMENTED BY ANNEX)	PRACTICE GUIDELINES AND TRAINING MANUALS
PRECONCEPTION/PERICONCEPTUAL INTERVENTIONS				
<ul style="list-style-type: none"> Home visits across the continuum of care^{108, 109} Women's groups^{57, 109} 	Community	ALL	<ul style="list-style-type: none"> Material for counselling, health education and health promotion 	<ul style="list-style-type: none"> WHO/UNICEF CHW guidelines <i>Manual for the Community Health Worker: Working Version</i>

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