Childhood and maternal Health
Sexual and reproductive health

By
Hatim Jaber
MD  MPH  JBCM  PhD
20 +21 -6-2017
Objectives

- Understand Women and child health and rights globally, which is effected by different factors in different societies and countries
- Discuss and plan different interventions to improve women and child health
  Discuss Global and national strategies for prevention of mortality in children: Integrated management of common childhood diseases, Prevention and management of perinatal health problems
- Discuss and plan different interventions to improve women and child health: in sexual and reproductive health as an example.
- Discuss International policies and conventions regarding sexual and reproductive health and rights, Gender inequalities and sexual and reproductive health and rights and Family planning, safe abortion, effective STD programs
<table>
<thead>
<tr>
<th>Topic</th>
<th>Time</th>
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<tbody>
<tr>
<td><strong>Introduction of concepts: MCH</strong></td>
<td>08:00 to 08:10</td>
</tr>
<tr>
<td><strong>Women and child health globally</strong></td>
<td>08:10 to 08:20</td>
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<tr>
<td><strong>Interventions to improve women and child health</strong></td>
<td>08:20 to 08:30</td>
</tr>
<tr>
<td><strong>Integrated management of common childhood diseases</strong></td>
<td>08:30 to 08:40</td>
</tr>
<tr>
<td><strong>Sexual and reproductive health</strong></td>
<td>08:40 to 09:00</td>
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</table>

*Presentation outline 19-6-2017*
Maternal and children health.

Healthy children need healthy mothers.
Maternal health

Maternal health refers to **the health of women during pregnancy, childbirth and the postpartum period.**

While motherhood is often a **positive and fulfilling experience**, for too many women it is associated with suffering, ill-health and even death.

Haemorrhage, infection, HBP, unsafe abortion and obstructed labour still are **major direct causes of maternal morbidity**
Maternal health care.

• Is a concept that encompasses family planning, preconception, prenatal, and postnatal care.

• Goals of *preconception care* can include *providing education, health promotion, screening and interventions* for women of reproductive age to *reduce risk factors* that might affect future pregnancies.
Maternal prenatal care.

• Prenatal care is the comprehensive care that women receive and provide for themselves throughout their pregnancy.

• Women who begin prenatal care early in their pregnancies have better birth outcomes than women who receive little or no care during their pregnancies.
Maternal postnatal care.

• Postnatal care issues include recovery from childbirth, concerns about newborn care, nutrition, breastfeeding and family planning.

• Time just after delivery is especially critical for newborns and mothers, especially during the first 24 hours. Two-thirds of all maternal deaths occur in this postnatal period;.
Maternal health and *developing countries*.

- Most women *do not have a good access* to the health care and sexual health education services.

- A woman in sub-Saharan Africa has a *1 in 16 chance* of dying in pregnancy or childbirth, compared to a *1 in 4,000 risk* in a developing country – the *largest difference between poor and rich countries of any health indicator.*
Maternal health and developing countries.

• At the level of preconception and prenatal care, pregnancy complications and childbirth are *the leading causes of death among women of reproductive age.*

• *Less than one percent* of these deaths occur in developed countries, showing that they could be avoided if resources and services were available.
Maternal death

It is "The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."

Maternal death prevalence is measured by the maternal mortality ratio, maternal mortality rate, lifetime risk of maternal death, and proportion of maternal deaths among deaths of women of reproductive age (PM).
Definitions related to maternal and pregnancy-related mortality

- **Maternal death**
  Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

- **Pregnancy-related death**
  Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.

- **Late maternal death**
  Death of a woman from direct or indirect obstetric causes, more than 42 days, but less than 1 year, after termination of pregnancy.

- **Proportion of maternal deaths (PM)**
  Proportion of maternal deaths among deaths of women of reproductive age.

- **Proportion of pregnancy-related deaths (pregnancy-related PM)**
  Proportion of pregnancy-related deaths among deaths of women of reproductive age.
Definitions related to maternal and pregnancy-related mortality

• **Maternal mortality ratio**
  Number of maternal deaths per 100,000 live births.

• **Maternal mortality rate**
  The ratio of maternal deaths to the women-years of exposure for women aged 15–49 years.

• **Lifetime risk**
  The probability of a 15-year-old girl eventually dying from a maternal cause, assuming she is subjected throughout her lifetime to the risks of maternal death as estimated for that country-year.

• **Annual (continuous) rate of reduction**
  Measure of relative decline per year, defined as: 
  \[ \log(MMR_{t2}/MMR_{t1})/(t1–t2) \] where \( t1 \) and \( t2 \) refer to different years with \( t1 < t2 \), and MMR is the maternal mortality ratio.
WHO 2015 MMR

• Pregnancy-related deaths and diseases remain unacceptably high.

• In 2015, an estimated 303 000 women died from pregnancy-related causes, 2.7 million babies died during the first 28 days of life and 2.6 million babies were stillborn.

• While substantial progress has been made over the past two decades, increased access to, and use of, higher-quality health care during pregnancy and childbirth can prevent many of these deaths and diseases, as well as improve women and adolescent girls’ experience of pregnancy and childbirth.
Key Facts

• Every day, approximately 800 women die from preventable causes related to pregnancy and childbirth.

• 99% of all maternal deaths occur in developing countries.

• Maternal mortality is higher in women living in rural areas and among poorer communities.

• Young adolescents face a higher risk of complications and death as a result of pregnancy than older women.

• Between 1990 and 2013, maternal mortality worldwide dropped by almost 50%.
Maternal mortality ratio (per 100,000 live births) for 2015

Figure 1: Global and regional estimates of maternal mortality ratio from 1990 to 2015. Shaded areas are 80% uncertainty intervals. Shaded areas in background are comparable.
Progress towards achieving the fifth Millennium Development Goal

- Improving maternal health is 1 of the 8 Millennium Development Goals (MDGs). Countries committed to reducing maternal mortality by three quarters between 1990 and 2015.
- Since 1990, maternal deaths worldwide have dropped by 50%.
- In sub-Saharan Africa, a number of countries have halved their levels of maternal mortality since 1990. However, between 1990 and 2013, the global maternal mortality ratio (i.e. the number of maternal deaths per 100 000 live births) declined by only 2.6% per year. This is far from the annual decline of 5.5% required to achieve MDG5.
Where do maternal deaths occur

- Almost all maternal deaths (99%) occur in developing countries. More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia.

- The maternal mortality ratio in developing countries in 2013 is **230 per 100 000 live births** versus **16 per 100 000 live births** in developed countries.
• There are large disparities between countries and also large disparities within countries, between women with high and low income and between women living in rural and urban areas.

• Women in developing countries have on average many more pregnancies than women in developed countries, and their risk of death due to pregnancy is higher.
Women die as a result of complications during and following pregnancy and childbirth. Most of these complications develop during pregnancy. Other complications may exist before pregnancy but are worsened during pregnancy. The major complications that account for nearly 75% of all maternal deaths are:

1. Severe bleeding (mostly bleeding after childbirth)
2. Puerperal Sepsis
3. pre-eclampsia and eclampsia
4. Complications from delivery (vaginal, cervical tears)
5. Unsafe abortion
How can women’s lives be saved

• Most maternal deaths are preventable, as the health-care solutions to prevent or manage complications are well known.

• All women need access to antenatal care in pregnancy, skilled care during childbirth, and care and support in the weeks after childbirth.
How can women’s lives be saved....

• **Severe bleeding** after birth can kill a healthy woman within hours if she is unattended. Injecting oxytocin immediately after childbirth effectively reduces the risk of bleeding.

• **Infection** after childbirth can be eliminated if good hygiene is practiced and if early signs of infection are recognized and treated in a timely manner.

• **Pre-eclampsia** should be detected and appropriately managed before the onset of convulsions.
WHO report 1990-2013

• Eastern Asia experienced the highest average annual decline between 2005 and 2013 at 5.2%
• Latin America and the Carribean experienced the least decline in the same period, at 1.1%.
• Southern Africa as Botswana, South Africa, MMR decreases from 1990 to 2000, mainly as a result of HIV epidemic, and then started to decline most likely due to antiretroviral therapy.
WHO report 1990-2013

- Globally, the total number of maternal deaths decreased by 45% from 1990 to 2013, yielding an average annual decline of 2.6%.
- All regions experienced a decline of 37% in Maternal Mortality Rate (MMR) between 1990 and 2013.
- The highest reduction in the 23-year period was in Eastern Asia (65%) followed by Southern Asia (64%), Northern Africa (57%), Southern Eastern Asia (57%), Sub-saharan Africa (49%), Central Asia (44%), Western Asia (43%), Latin America and the Caribbean (40%).
African Region

- The levels of maternal and newborn mortality are still unacceptably high in this Region and the decline of maternal mortality between 1990 and 2005 in sub-Saharan Africa was only 0.1% per year while to achieve MDG 5 we need a decline of at least 5.5% per year.
It was estimated that in the Eastern Mediterranean Region in 2008:

- **52,000 women** and 510,000 newborns died due to pregnancy and childbirth complications.
- 50% of newborn babies were delivered away from health care facilities.
- 40% of mothers and newborn babies were left unattended by skilled health personnel.
- The total fertility rate was **as high as 4.0 children per woman.**
European Region

- The average maternal mortality ratio for the WHO European Region official figures decreased from an estimated 35 deaths per 100,000 live births in 1990 to 16 in 2008.
Global trends of neonatal, infant and child mortality: implications for child survival
When are child deaths occurring?

• The **10.6 million annual** child deaths are not distributed evenly over the 0-4 year age period.

• More than **70%** of all child deaths occur in the first year of life.

• And of these ... nearly **40%** occur in the first month of life (the neonatal period).
Where are child deaths occurring?

• Only 2 WHO regions account for more than 70% of all under-five deaths:
  - 42% in the African region
  - 29% in South-east Asia region

• Only 6 countries account for 50% of all child deaths (2002 data):
  - India (Sear)
  - Nigeria (Afr)
  - China (Wpr)
  - Pakistan (Emr)
  - Ethiopia (Afr)
  - DR Congo (Afr)
What are under-fives dying of? (excluding neonatal causes of death)

- Pneumonia
- Diarrhoea
- Malaria
- Measles
- HIV/AIDS

\(~ 50\%\)

Malnutrition contributes to more than half of all under-five deaths
What are neonates dying of?

- Preterm births
- Severe infection
- Asphyxia
- Congenital anomalies
- Tetanus

\( \sim 75\% \)
About half of child deaths occur in the neonatal period.

### When do neonates die?

<table>
<thead>
<tr>
<th>Day</th>
<th>% U5 deaths</th>
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<tbody>
<tr>
<td>1st day</td>
<td>20</td>
</tr>
<tr>
<td>By 3rd day</td>
<td>25</td>
</tr>
<tr>
<td>By 7th day</td>
<td>37</td>
</tr>
<tr>
<td>By 28th day</td>
<td>50</td>
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The graph shows the distribution of neonatal deaths by day and week:

- **Week 1**: 74.1% of deaths occur by Week 1, with 39.3% by the 1st day.
- **Week 2**: 12.6% of deaths occur by Week 2, with 2.8% by the 7th day.
- **Week 3**: 10% of deaths occur by Week 3, with 0% by the 28th day.
- **Week 4**: 3.1% of deaths occur by Week 4, with 0% by the 1st day.

Percent (%) distribution:

- 0 10 20 30 40 50 60 70 80

**Week 4**

**Week 3**

**Week 2**

**Week 1**
Progress has been variable

- Neonatal mortality has *fallen at a lower* rate than post-neonatal or early child mortality
- Relatively greater progress has been made in some regions and countries
  
  e.g. neonatal mortality is *now 58%* lower in high income countries than in 1983, compared to 14% reduction in low/middle income countries
- Large variations in mortality rates exist even within the same country
Some emerging and reemerging problems to M & Ch Health.

- HIV/AIDS and TB plus Multiresistant TB.
- Dengue.
- Others viral haemorrhagic fever.
- Old neglected diseases with new burden.
- Cholera outbreaks in Africa and Asia.
- Avian and swyne flu.
- Conflicts, war and infraestructure destruction.
- Bad governance and uneffective polices.
Core interventions to prevent child deaths.

• Preventive interventions:
  • Vaccination
  • Folic acid supplementation
  • Tetanus toxoid
  • Syphilis screening and treatment
  • Pre-eclampsia and eclampsia prevention (calcium supplementation)
  • Intermittent presumptive treatment for malaria in pregnancy
Core interventions to prevent child deaths.

- Preventive interventions:
  - Antibiotics for premature rupture of membranes
  - Detection and management of breech (caesarian section)
  - Labor surveillance
  - Clean delivery practices
  - Breastfeeding
Core interventions to prevent child deaths.

- Preventive interventions:
  - Prevention and management of hypothermia
  - Kangaroo mother care (skin-to-skin contact) for low birth-weight newborns
  - Newborn temperature management
  - Insecticide-treated materials
  - Complementary feeding
Core interventions to prevent child deaths.

- Preventive interventions:
  - Zinc
  - Hib vaccine
  - Water, sanitation, hygiene
  - Antenatal steroids
  - Vitamin A
  - Nevirapine and replacement feeding to prevent HIV transmission
  - Measles vaccine
Core interventions to prevent child deaths.

• **Treatment interventions:**
  • Detection and treatment of asymptomatic bacteriuria.
  • Corticosteroids for preterm labor.
  • Newborn resuscitation
  • Community-based pneumonia case management, including antibiotics
  • Oral rehydration therapy
Core interventions to prevent child deaths.

- Antibiotics for dysentery, sepsis, emerging and reemerging diseases.
- Antimalarials
- Zinc for diarrhea
- Vitamin A in respiratory diseases.
Women’s health challenges

• An estimated 289,000 died in 2013 in PREGNANCY AND CHILDBIRTH, with more than one life lost every 2 minutes

• 225 MILLION women have an UNMET NEED FOR FAMILY PLANNING

• 52% of maternal deaths (in pregnancy, at or soon after childbirth) are attributable to THREE LEADING PREVENTABLE CAUSES – haemorrhage, sepsis, and hypertensive disorders

• 28% Of maternal mortality results from non-obstetric causes such as MALARIA, HIV, DIABETES, CARDIOVASCULAR DISEASE AND OBESITY

• 8% of maternal mortality is attributable to UNSAFE ABORTION

• 270,000 women die of CERVICAL CANCER each year

• 1 IN 3 women aged 15–49 years experiences PHYSICAL AND/OR SEXUAL VIOLENCE either within or outside the home
Child health challenges

- **2.7 MILLION** children who die are NEWBORNS. 60 - 80% are PREMATURE and/or SMALL for gestational age
- **5.9 MILLION** children under the age of five died in 2014 from mostly PREVENTABLE CAUSES
- **43%** due to INFECTIOUS DISEASES with pneumonia, diarrhoea, sepsis and malaria as leading causes
- **2.6 MILLION** babies die in the last 3 months of pregnancy or during childbirth (STILLBIRTHS)
- NEARLY HALF of under-five child deaths are directly or indirectly due to MALNUTRITION. Globally, **25%** of children are stunted and **6.5%** are overweight or obese.
- **LESS THAN 40%** of infants are BREASTFED exclusively up to 6 months
- **1 IN 3** children (200 million globally) fails to reach their full physical, cognitive, psychological and/or socioemotional potential due to POVERTY, POOR HEALTH AND NUTRITION, INSUFFICIENT CARE AND STIMULATION, and other risk factors to early childhood development
Achievement of the MDG 4 & 5 constitutes a particular challenge

- 57 countries: likely to reduce child mortality by 2/3 (1990-2015) but still intra-country disparities
- 16 countries: retrogression/significant increase in child mortality
- Progress slow/stagnating in Sub-Saharan Africa and South Asia
- 42 countries account for 90% of all child deaths
- Over 1 billion children severely deprived of basic health & other social services → Linked to Poverty, Conflict and HIV
Solutions exist ....

- **Skilled care**: skilled care during pregnancy, childbirth and in the post-natal period
- **Infant feeding**: exclusive breastfeeding, complementary feeding and micronutrients
- **Vital vaccines**: measles and tetanus immunization and other conventional and new vaccines
- **Combating diarrhoea**: low osmolarity ORS and zinc in case management of diarrhoea, antibiotics for dysentery
- **Treating pneumonia and newborn sepsis**: prompt treatment with appropriate antibiotics

Where appropriate:
- Combating malaria
- Preventing and caring for HIV (mother and child)
Delivery strategies/tools exist

IMCI – Integrated Management of Childhood Illness
MPS – Making Pregnancy Safer
NUT - Nutrition
RBM – Roll Back Malaria
EPI – Expanded Programme on Immunization

Skilled care
Infant feeding
Vital vaccines
Combating diarrhoea
Antibiotics for pneumonia
Combating malaria
Combating HIV

Community

MPS
IMCI
NUT
EPI
RBM
HIV
Goals of IMCI – Integrated Management of Childhood Illness

IM Neonate CI

• **Standardized case management** of sick newborns and children
• Focus on the **most common causes of mortality**
• Nutrition assessment and counselling for all sick infants and children
• Home care for newborns to
  – promote exclusive breastfeeding
  – prevent hypothermia
  – improve illness recognition & timely care seeking
Essential components of IMNCI

• Improve health and nutrition workers’ skills
• Improve health systems
• Improve family and community practices
Key messages

• Maternal and newborn care and support is essential to achieve a substantial reduction in neonatal mortality
• Improving child survival requires coordinated action between maternal and child health, and other programme areas (e.g. EPI, NUT, RBM, HIV)
• IMCI is an effective delivery strategy for multiple child survival interventions (India has already incorporated newborn care)
• For substantive impact, strong community component must accompany the health system strengthening
Summarry :Children Heath.

- Child's health includes **physical, mental and social well-being** too.
- Each year more than **10 million** children under the age of five die.
- At least **6.6 million** child deaths can be prevented each year if affordable health interventions are made available to the mothers and children who need them.
Underlying causes of Child illness and death.

- **Poverty:** More than 200 million children under five live in absolute poverty, on less than $1 per day.
- **Under-nutrition and malnutrition:** At least 200 million children under five are malnourished.
- **High fertility** and short birth intervals.
Infant mortality

• Critical indicator of population health reflecting the overall state of maternal health as well as quality and accessibility of PHC available to pregnant women and infants.

• Infant Mortality Rate (IMR): number of infant deaths per 1,000 live births in a population.
Other indicators.

• **Neonatal Death**: Death of an infant less than 28 days after birth (<28 days).

• **Postneonatal Death**: Death of an infant between 28 days and one year after birth (28-364 days).

• **Low Birthweight (LBW)**: Birth weight less than 2,500 grams and VLBW 1500.
Infant and neonatal mortality.

- Infant mortality rate is made up of two components:
  - neonatal mortality (death in the first 28 days of life)
  - & postneonatal mortality (death from the infants’ 29th day but within the first year).

- The leading causes of neonatal death include birth defects, disorders related to short gestation (prematurity) and LBW, and pregnancy complications.
Neonatal mortality.

• The most to be preventable are those related to preterm birth and LBW, which represent approximately 20 percent of neonatal deaths.

• Postneonatal death reflects events experienced in infancy, including SIDS (Sudden Infant Death Syndrome), birth defects, injuries, and homicide. SIDS is the leading cause of postneonatal death.
Neonatal mortality.

• Most neonatal deaths usually occur in the first 24 hours of life, and three-quarters of neonatal deaths occur in the first week after birth.

• Most newborn deaths are preventable through affordable interventions. To address the high burden of newborn deaths care must be available during pregnancy, labour and postpartum.
Perinatal and fetal mortality.

• Health of infants depends in large part on their health in utero. A fetus with severe defects or growth problems may not be delivered alive.

• Because only live births are counted in infant mortality rates, perinatal and fetal mortality rates provide a more complete picture of perinatal health than does the infant mortality rate alone.
Perinatal mortality.

- The perinatal mortality rate includes both deaths of live-born infants through the first 7 days of life and fetal deaths after 28 weeks of gestation.

- This rate is a useful overall measure of perinatal health and the quality of health care provided to pregnant women and newborns.
Fetal death.

- Fetal death often is associated with maternal complications of pregnancy, such as problems with amniotic fluid levels and blood disorders.

- Also when birth defects, such as anencephalus, renal agenesis, and hydrocephalus, are present.
Fetal death.

- Rates of fetal mortality are 35 percent greater than average in women who use tobacco during pregnancy and 77 percent higher in women who use alcohol.

- Targeting prenatal risk screening and intervention to high-risk groups is critical to reducing this gap.
Stillbirth (around in the dark)

• Information about 4 million neonatal deaths worldwide is limited, even less information is available for stillbirths (babies born dead in the last 12 weeks of pregnancy) and there are no systematic global estimates.

• The numbers of stillbirths are high and regions in which most stillbirths occur, with under-reporting being a major challenge.
Under-five mortality rate (U5MR).

- Indicates the probability of dying between birth and exactly five years of age, expressed per 1,000 live births, if subject to current mortality rates.

- It has several advantages as a barometer of child well-being in general and child health in particular. It measures an ‘outcome’ of the development process.
Under-five mortality rate (U5MR) is known to be the result of a wide variety of inputs:

- **nutritional status** and the health knowledge of mothers;
- **level of immunization** and oral rehydration therapy;
- **availability of maternal and child health services (including prenatal care);**
Under-five mortality rate (U5MR)

- Income and food availability in the family;
- Availability of safe drinking water and basic sanitation;
- Safety of the child’s environment, among other factors

- U5MR is less susceptible to the fallacy due that is a picture of the health status of the majority of children (and of society as a whole).
Children < 5 years mortality.

- Globally, 80 percent of all child deaths to children under five are due to only a handful of causes:
  - pneumonia (19 %),
  - diarrhea (18 %),
  - malaria (8 %),
  - neonatal pneumonia or sepsis (10 %),
  - pre-term delivery (10 %),
  - asphyxia at birth (8 %),
  - measles (4 %),
  - HIV/AIDS (3 %).
Deaths among infants under 7 days are decreasing more slowly than among older infants.

Source: RHR/WHO, 2003
Where do 4 million newborns die?

1.5 million (38% of all newborn deaths) occur in 4 countries of South Asia.
When do they die?

Up to 50% of neonatal deaths are in the first 24 hours.

75% of neonatal deaths are in the first week – 3 million deaths.
4 million newborn deaths – Why?
almost all are due to preventable conditions

Two thirds of all neonatal deaths are in LBW infants
MDGs and maternal/child health

• Millennium Development Goal 4 aims to reduce child deaths by two-thirds (66%) between 1990 and 2015.

• Millennium Development Goal 5 has the target of reducing maternal deaths by three-quarters (75%) over the same period.
Some conclusions.

• Maternal, neonatal and child mortality has been very persistent in a global context.

• Now 38 percent of all child deaths (4 million) occur in the first month of life.

• More than 10 million children under 5 yr die each year. Most result from preventable and treatable causes. That’s 30,000 children a day.

• Most of these children live in developing countries
Integrated Management of Neonatal and Childhood Illness (IMNCI)

Launched globally in 1995
Objectives of IMNCI Strategy

- To reduce significantly mortality and morbidity associated with the major causes of disease in children.
- To contribute to healthy growth and development of children.
Separate disease specific clinical guidelines and training materials

Separate disease specific training courses

Health worker attempts to “Integrate” guidelines

Integrated clinical guidelines and training materials

Integrated clinical training courses

Integrated clinical case management
Components

♦ Improving case management skills of health workers:
  - Standard guidelines
  - Training (pre-service and in-services)
  - Follow-up after training

♦ Improving the health system to deliver IMNCI:
  - Essential drug supply and management
  - Organization of work in health facilities
  - Management and supervision

♦ Improving Family and Community practices
Interventions currently included in the IMCI strategy

<table>
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<tr>
<th>Promotion of growth (Preventive measures)</th>
<th>Response to sickness (curative care)</th>
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<tbody>
<tr>
<td><em>Community/home-based interventions to improve Nutrition</em>&lt;br&gt;  <em>Insecticide-impregnated bednets</em></td>
<td><em>Early case management</em>&lt;br&gt;  <em>Appropriate careseeking</em>&lt;br&gt;  <em>Compliance with treatment</em></td>
</tr>
<tr>
<td><em>Vaccinations</em>&lt;br&gt;  <em>Complementary feeding</em>&lt;br&gt;  <em>Breastfeeding counselling</em>&lt;br&gt;  <em>Micronutrient supplementation</em></td>
<td><em>Case management of: ARI, diarrhoea, measles, malaria, malnutrition, other serious infection</em>&lt;br&gt;  <em>Iron treatment</em>&lt;br&gt;  <em>Antihelminthic treatment</em></td>
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An integrated approach to managing sick children is, therefore, indicated as is the need for child health programmes to go beyond single diseases and address the overall health of a child.

“Looking to The Child as a Whole”.