

Maternal and child health

Lecture - 4

Child Health

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Objectives :

- Explain MNCH(Maternal Neonatal and Child Health (MNCH))**
- Identify objectives and elements of MNCH**
- Define IMCI**
- Recognize the elements of IMCI**

- Describe under-five mortality, its causes and its indices.**
- Describe maternal and child health indicators.**

What is the MNCH (Maternal Neonatal and Child Health)

A majority of the maternal and early newborn deaths can be avoided by ensuring prenatal, postnatal and newborn care and availability of EmONC services within reasonable travel distance.

Maternal, newborn and child health [MNCH] refers to the integrated continuum of care that delivers tools and treatments to mothers and their infants at critical points, and to children in their first five years of life

Why to develop a MNCH

1-To respond to the health and nutrition needs of women, newborns and children under 5 years old.

2-To improve effectiveness, quality and utilization of the MNCH services

What are the elements of the MNCH?

➤ During Pregnancy

- **Tetanus toxoid immunization**
- **Nutrition (iodine, iron, balanced energy-protein supplementation)**
- **Management and prevention of maternal infections (STIs, malaria)**
- **Detection of maternal complications (eclampsia)**
- **Breast feeding counseling**

➤ **During Delivery**

- **Basic care for every delivery (clean, safe, emergency obstetric care)**
- **Early detection and early management of complications, including neonatal resuscitation**

➤ **At Early neonatal period**

- **Essential care for every newborn (drying, warming, prophylactic eye care, prevention of hypoglycemia)**
- **Early detection and treatment of complications**
- **Special care for babies with special needs**

➤ **In Late neonatal period**

- **Exclusive breastfeeding**
- **Appropriate hygiene**
- **Recognition of danger signs**
- **Prevention and management of illness**

➤ **During Childhood**

IMCI(Integrated Management of Childhood Illness)

- **Prevention and management of childhood illness**
- **Immunization**
- **Nutrition interventions**

WHAT IS IMCI?

IMCI is an integrated approach to child health that focuses on the well being of the whole child.

Is the best globally adopted child health plan for management of all children under 5 years of age.

Aims to reduce preventable mortality, minimize illness and disability, and promote healthy growth and development of children under five years of age.

IMCI includes both preventive and curative elements that are implemented by families, communities, and health facilities

The IMCI strategy includes three main components:

- **Improving case management skills of health-care staff**
- **Improving overall health systems**
- **Improving family and community health practices.**

IMCI Strategy



Health-worker component:
Improvements in the case-management skills of health staff through locally adapted guidelines.



Health-service component:
Improvements in the overall health system required for effective management.



Community component:
Improvements in family and community health care practices.

In health facilities, the IMCI OBJECTIVES are :

1-Supports the accurate identification of childhood illnesses in outpatient settings

2-Ensures appropriate combined treatment of all major illnesses

3-Strengthens the counselling of caretakers

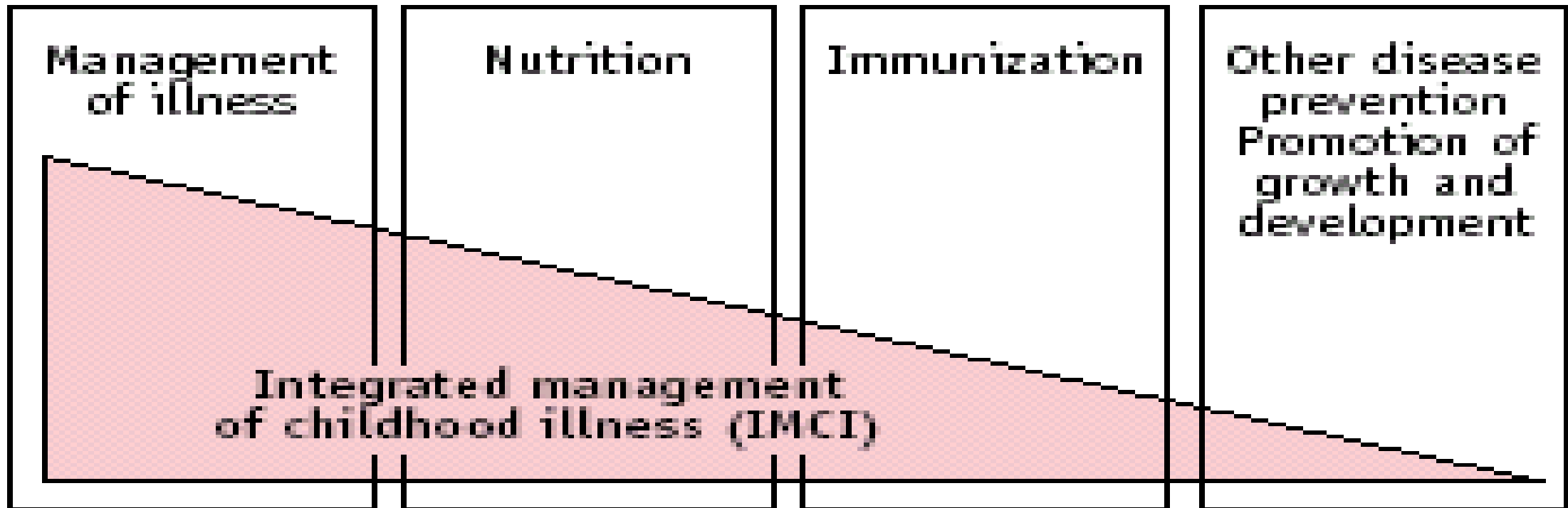
4-speeds up the referral of severely ill children.

In the home setting, IMCI objectives are:

- ✓ **It promotes appropriate care seeking behaviour of parents**
- ✓ **Improved nutrition and preventative care**
- ✓ **Correct implementation of prescribed care**

Key elements of IMCI

Integrated management of childhood illness (IMCI) as a key strategy for improving child health



MCI identifies general danger signs that may call for hospitalization of the child and then bases its assessment on the presence of

1-Cough and difficulty breathing

2-Diarrhea

3-Fever

4-Measles

5-Ear infection

6-Malnutrition

1

- Asses the child for general danger signs and all presenting health problems

2

- Classify the child's illness using the colour coded triage system

3

- Identify specific treatment needed for the child's classification

4

- Treat the child

5

- Council the caretaker to resolve any feeding problems found

6

- Provide follow-up care

The Integrated Case Management Process

Check for danger signs

1. Convulsions
2. Lethargy/ unconsciousness
3. Inability to drink/breastfeed
4. Vomiting

Assess main symptoms

1. Cough/difficulty in breathing
2. Diarrhoea
3. Fever
4. Ear problems

Assess

- Nutrition
- Immunization status and
- Potential feeding problems

Check for other problems

Classify the condition of the child and assign to one of the three color codes and
Identify the treatment actions as per the actions listed in that color band

Urgent referral

1. Pre – referral treatments
2. Advise parents
3. REFER the child

At the referral facility

1. ETAT
2. Diagnosis, treatment and
3. Monitoring and follow up

Treat at the OPD

1. Treat local infection
2. Give oral drugs
3. Advise and teach mother
4. Follow – up

Dr Poonima Tiwari

Home Management

Counsel care taker on how to:

1. Give oral drugs
2. Treat local infections at home
3. Continue feeding
4. Danger signs
5. Follow – up

Steps of IMCI

Assess

Assess

- Check for danger signs
- Assess children about other health problem

Classify

Classify

- Pink :- pre-referral treatment & referral
- Yellow :- specific medical treatment & advice
- Green :- simple advice on home management

Identify

Identify

- Specific treatment needs for the child:-
- If home based :- develop integrated treatment plan

IMCI COLOUR CODING

Classification based on a colour-coded triage system

Red – urgent pre-referral treatments and referral

Yellow – specific medical treatment and advice

Green – simple advice on home management

Cough or Difficulty of Breathing

SIGNS

CLASSIFY AS

IDENTIFY TREATMENT

- Any general danger sign or
- Chest indrawing or Stridor in a clam child

SEVERE PNEUMONIA OR VERY SEVERE DISEASE

- Give first dose of an appropriate antibiotic
- Refer **URGENTLY** to a hospital

Fast breathing

PNEUMONIA

- Give an appropriate oral antibiotic for 5days
- Soothe the throat and relieve the cough with a safe remedy
- Advise mother when to return immediately
- Follow-up in 2days

No signs of pneumonia or very severe disease

NO PNEUMONIA, COUGH OR COLD

- If coughing >30days refer for assessment
- Soothe the throat and relieve the cough with a safe remedy
- Advise mother when to return immediately
- Follow-up in 6days if not improving

DIARRHEA

SIGNS	CLASSIFY AS	IDENTIFY TREATMENT
<p>Two of the following signs:</p> <ul style="list-style-type: none"> • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly 	<p>SEVERE DEHYDRATION</p>	<p>(Urgent pre-referral treatments are in bold print)</p> <ul style="list-style-type: none"> ▶ If child has no other severe classification <ul style="list-style-type: none"> - Give fluid for severe dehydration (Plan C). OR If child also has another severe classification: <p>Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</p> <ul style="list-style-type: none"> ▶ If child is 2 years or older, and there is cholera in your area, give antibiotic for cholera.
<p>Two of the following signs:</p> <ul style="list-style-type: none"> • Restless, irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly. 	<p>SOME DEHYDRATION</p>	<ul style="list-style-type: none"> ▶ Give fluid, Zinc supplements and food for some dehydration (Plan B) ▶ <i>If Child also has a severe classification:</i> <p><i>Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</i></p> <ul style="list-style-type: none"> ▶ Advise mother when to return immediately. ▶ Follow-up in 5 days if not improving. ▶ If confirmed/symptomatic HIV, follow-up in 2 days if not improving.
<ul style="list-style-type: none"> • Not enough signs to classify as some or severe dehydration 	<p>NO DEHYDRATION</p>	<ul style="list-style-type: none"> ▶ Give fluid, Zinc supplements and food to treat diarrhoea at home (Plan A) ▶ Advise mother when to return immediately. ▶ <i>Follow-up in 5 days if not improving.</i> ▶ If confirmed/symptomatic HIV, follow-up in 2 days if not improving.

Two of the following signs:

- Lethargic or unconscious
- Sunken eyes
- Not able to drink or drinking poorly
- Skin pinch goes back very slowly

SEVERE DEHYDRATION

Two of the following signs:

- Restless, irritable
- Sunken eyes
- Drinks eagerly, thirsty
- Skin pinch goes back slowly.

SOME DEHYDRATION

- Not enough signs to classify as some or severe dehydration

NO DEHYDRATION

THEN CHECK FOR ACUTE MALNUTRITION

CHECK FOR ACUTE MALNUTRITION LOOK AND FEEL:

Look for signs of acute malnutrition

- Look for oedema of both feet
- Determine WFH/L* ___ z-score.
- Measure MUAC** ___ mm in a child 6 months or older

If WFH/L less than -3 z-scores or MUAC less than 115 mm, then:

- Check for any medical complication present:
 - Any general danger signs
 - Any severe classification
 - Pneumonia with chest indrawing
- If no medical complications present:
 - Child is 6 months or older, offer RUTF*** to eat. Is the child:
 - Not able to finish RUTF portion?
 - Able to finish RUTF portion?
 - Child is less than 6 months, assess breastfeeding:
 - Does the child have a breastfeeding problem?

CLASSIFY
NUTRITIONAL
STATUS

<ul style="list-style-type: none"> • Oedema of both feet OR • WFH/L less than -3 z-scores or MUAC less than 115 mm AND any one of the following: <ul style="list-style-type: none"> ○ Medical complication present or ○ Not able to finish RUTF or ○ Breastfeeding problem 	<p>Pink : COMPLICATED SEVERE ACUTE MALNUTRITION</p>	<ul style="list-style-type: none"> ➢ Give first dose appropriate antibiotic ➢ Treat the child to prevent low blood sugar ➢ Keep the child warm ➢ Refer URGENTLY to a hospital
<ul style="list-style-type: none"> • WFH/L less than -3 z-score OR • MUAC less than 115 mm AND • Able to finish RUTF 	<p>Yellow: UNCOMPLICATED SEVERE ACUTE MALNUTRITION</p>	<ul style="list-style-type: none"> ➢ Give oral antibiotics for 5 days ➢ Give ready-to-use therapeutic food for a child aged 6 months or more ➢ Counsel the mother on how to feed the child ➢ Assess for possible TB infection ➢ Advise mother when to return immediately ➢ Follow up in 7 days
<ul style="list-style-type: none"> • WFH/L between -3 and -2 z-scores OR • MUAC 115 up to 125 mm 	<p>Yellow: MODERATE ACUTE MALNUTRITION</p>	<ul style="list-style-type: none"> ➢ Assess the child's feeding and counsel the mother on the feeding recommendations ➢ If feeding problem, follow up in 7 days ➢ Assess for possible TB infection ➢ Advise mother when to return immediately ➢ Follow up in 30 days
<ul style="list-style-type: none"> • WFH/L -2 z-scores or more OR • MUAC 125 mm or more 	<p>Green : NO ACUTE MALNUTRITION</p>	<ul style="list-style-type: none"> ➢ If child is less than 2 years old, assess the child's feeding and counsel the mother on feeding according to the feeding recommendations ➢ If feeding problem, follow up in 7 days

*WFH/L is Weight-for-Height or Weight-for-Length determined by using the WHO growth standards charts.

** MUAC is Mid-Upper Arm Circumference measured using MUAC tape in all children 6 months or older.

***RUTF is Ready-to-Use Therapeutic Food for conducting the appetite test and feeding children with severe acute malnutrition.

CLASSIFY CHILD EAR PROBLEM

SIGNS	CLASSIFY AS
<ul style="list-style-type: none">• Tender swelling behind the ear	MASTOIDITIS
<ul style="list-style-type: none">• Pus seen draining from the ear or discharge is reported for less than 14 days or• Ear pain	ACUTE EAR INFECTION
<ul style="list-style-type: none">• Pus is seen draining from the ear or discharge is reported for more than 14 days	CHRONIC EAR INFECTION
<ul style="list-style-type: none">• No ear pain and• No pus seen or reported draining from the ear	NO EAR INFECTION

1 - 4-year Mortality Rate

$$1-4 \text{ MR} = \frac{\text{No. of deaths of children aged 1-4 years during a year}}{\text{Total no. of children aged 1-4Y at the middle of the year}} \times 1000$$

- Mid-year estimated population means population counted on the 1st of July

- **This rate reflects the main environmental factors affecting the child health, such as nutrition, sanitation, communicable diseases and accidents around the home.**
- **It is more advanced indicator of social situation of country than IMR .**
- **25 times higher in developing countries compared to developed countries.**

Causes of 1-4 years mortality

Developing countries

Diarrhea

ARI

Malnutrition

Infectious diseases

Accidents

Developed countries

Accidents

Congenital anomalies

Malignancies

Influenza

Pneumonia

Under-five mortality (child mortality)

Child mortality, also known as under-5 mortality or child death, refers to the death of infants and children under the age of five years.

Nearly half of these deaths are in newborns.

The leading causes of death among children under five are :

1-Preterm birth complications

2-Pneumonia

3-Intrapartum-related complications

4-Diarrhea

5-Congenital abnormalities.

6-Nutritional deficiency Problems include

✓ **Malnutrition**

✓ **Vitamin A Deficiency**

✓ **Iron Deficiency**

✓ **Low Birth Weight**



PROTECTING CHILDREN FROM THE ENVIRONMENT

Each year 1.7 million deaths of children under 5 are linked to the environment.

570,000 deaths



Respiratory infections, including pneumonia

360,000 deaths



Diarrhoea

270,000 deaths



Neonatal conditions, including prematurity

200,000 deaths



Unintentional injuries, such as burns, drowning

200,000 deaths



Malaria

26%



World Health Organization

Reducing environmental risks could prevent a quarter of these deaths.

Under 5 Mortality Rate

**Number of deaths of < 5 years of
age in a given year**

U5MR ----- x 1000

Total number of live births in the same year

Why use the U5MR as the single most important indicator of the state of the world's children?

For the following reasons

1-The U5MR reflects the nutritional health and the health knowledge of the mothers.

2-The level of immunization and ORT use.



3-The availability of maternal and child health services [including the antenatal care].

4-Income and food availability in the family.

5-The availability of clean water and safe sanitation.

6-The overall safety of the child's environment

Child Survival Index

$$\text{CSR} = \frac{1000 - \text{under 5 mortality rate}}{10}$$

This figure shows the percentage of those who survive to the age of 5 years.

U5MR of Iraq in 2006 = 39/1000 live births
CSR = 1000 - 39/10 = 96.1%

INDICATORS OF MATERNAL AND CHILD HEALTH CARE

WHO defines Indicators as
“variables which measure change”

Maternal and child health status is assessed through mortality, morbidity and growth and development and other indicators

1- Maternal mortality ratio

2-Under-five child mortality, with the proportion of newborn deaths

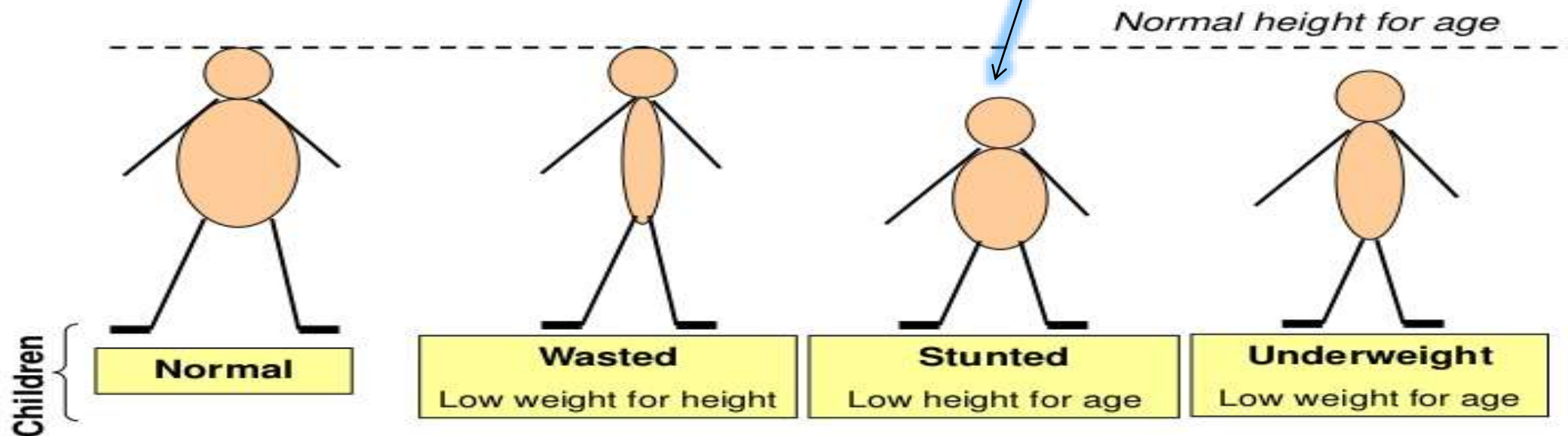
3- Children under five who are stunted

Stunted typically have short heights and low body masses for their age group.

Number of children under five years of age whose length-for-age or height-for age is below minus two standard deviations from the median of the WHO Child growth standards

Stunting reflects continued, long term exposure to poor health and nutrition, particularly during the first two years of life

Different Types of Childhood Malnutrition



More than 40% of
all kids in Tanzania
are stunted.

This line is the median
height of 9-year-olds
worldwide

We couldn't find a 9-year-old
in Mirongoine, Tanzania who
stood taller than this line

SOURCE: World Health Organization, Child Growth Standards, 2014

gatesnotes.com

4. Proportion of demand for family planning satisfied (met need for contraception)

Is defined as the sum of the number of women of reproductive age (15–49 years) who are currently using, or whose partner is currently using, at least one contraceptive method.

Number of women 15–49 years old who are using modern contraceptive methods

Total number of women 15–49 years old with a demand for family planning.

5-Antenatal care coverage

Antenatal care coverage (percentage of women aged 15–49 with a live birth who received antenatal care by a skilled health provider at least four times during pregnancy)

6-Births attended by skilled health personnel

Percentage of births attended by skilled health personnel.

Skilled attendant at birth is a measure of a health system's ability to provide adequate care for pregnant women during labour and delivery.

7-C-sections as a percentage of all births in the population

This indicator is aimed at measuring progress towards the reduction of maternal mortality.

(WHO),state that caesarean section use continues to rise globally, now accounting for more than 1 in 5 (21%) of all childbirths. This number is set to continue increasing over the coming decade, with nearly a third (29%) of all births likely to take place by caesarean section by 2030

According to WHO optimal rate for CS between 10-15%

When c- section rates in a country near 10%, there is significant decrease in maternal and newborn deaths.

When rate goes over 10% , there is no evidence that death rates will improve.

CS rate was (37.8%) in Iraq 2016

8-Three doses of the combined diphtheria, pertussis and tetanus vaccine (percentage of infants aged 12–23 months who received three doses of diphtheria/pertussis/tetanus vaccine)

9-Antiretroviral prophylaxis among HIV-positive pregnant women to prevent vertical transmission of HIV, and antiretroviral therapy for women who are treatment-eligible

10-Exclusive breastfeeding for six months (percentage of infants aged 0–5 months who are exclusively breastfed)

11-Antibiotic treatment for pneumonia (percentage of children aged 0–59 months with suspected pneumonia receiving antibiotics).

12-Postnatal care for mothers and babies (percentage of mothers and babies who received postnatal care visit within two days of childbirth)

Any Question ?

