Maternal & Child health
Student-led seminar

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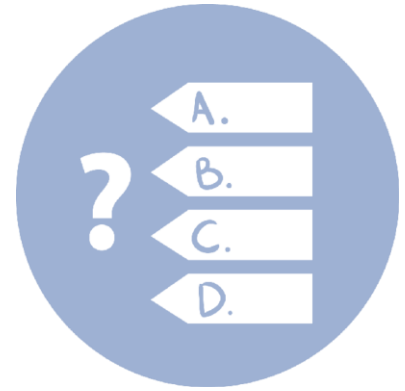
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Objectives:

- Health behaviors and health systems indicators that affect the health, wellness, and quality of life of women, children, and families.
- Factors affecting pregnancy and childbirth, including preconception health status, Age, access to appropriate preconception and interconnection health care, and poverty.
- Health risks that include hypertension and heart disease, diabetes, depression, genetic conditions, sexually transmitted diseases (STDs), inadequate nutrition, unhealthy weight, tobacco use and alcohol abuse.
- Social and physical determinants of maternal health.
- Social and physical determinants of infant and child health.
- How to improve the health and well-being of women, infants, children, and families.

Check your phones to answer the MCQs.

Q1. What is the leading cause of morbidity and mortality among children ?

A. Unintentional injuries

B. Cancer

C. Congenital anomalies

D. Malnutrition

Q2. What is the newborn normal weight ?

A. 1.5 kg

B. 2.5 kg

C. 5 kg

D. 8.5 kg

Q3. Which of the following is the most common complication of pregnancy ?

A. Hypertension

B. Preeclampsia

C. Gestational diabetes

D. Depression

Q4. What is the recommended duration of exclusive breastfeeding?

A. Two months

B. Six months

C. One year

D. Two years

Q5. Which of the following vaccines is given at first class primary school age ?

A. Hepatitis A

B. Hepatitis B

C. Varicella

D. Pneumococcal conjugate (PCV)

Maternal health:

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

- It encompasses the **health care** dimensions of f**amily planning**, **preconception**, **prenatal**, and **postnatal** care in order to ensure a positive and fulfilling experience in most cases and reduce maternal morbidity and mortality in other cases.

Do you know that:

- More than **135 million** women give birth per year

- About **16 million girls** aged between 15 and 19 give birth each year

Do you know that:

World Health Organization

- About **22 million abortions** continue to be performed unsafely each year.

- Nearly **830 women die** every day due to complications during pregnancy and childbirth.
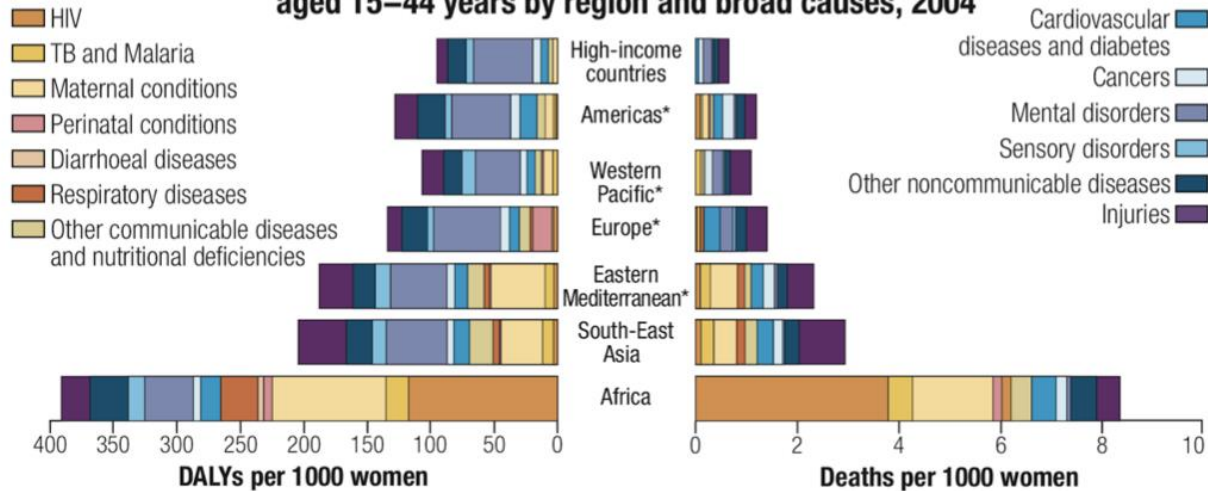
Do you know that:

- Most maternal deaths can be prevented.

- Many women **don't see a skilled health professional** enough during pregnancy.

Do you know that:

● The lack of skilled care is the main obstacle to better health for mothers.

Figure 1 **Mortality and disease burden (DALYs) in women aged 15–44 years by region and broad causes, 2004**

* High-income countries are excluded from the regional groups.
Source: World Health Organization.[1]

Child health:

- A state of physical, mental, intellectual, social and emotional well-being and not merely the absence of disease or infirmity.

Do you know that:

- More than 1 in 4 child deaths could be prevented by cleaning up the environment

- Asthma prevalence in children is increasing worldwide

Do you know that:

- Unintentional injuries such as :

Burns	Drowning	Poisoning	RTA	Falls

  are the leading cause of morbidity and mortality among children in the United States.

- 18% of children in the United States are considered obese.

- Nearly one-third of high school students play video or computer games for 3 or more hours on an average school day.*

Health Systems Indicators

What are health indicators?

- A health indicator is a measure designed to summarize information about a given priority topic in population health or health system performance.

- They provide comparable and actionable information across different geographic, organizational or administrative boundaries and/or can track progress over time.

How many Maternal, Newborn, and Child health indicators are there?

11

Health Indicators

What are they ?

Maternal Mortality Ratio

Skilled attendant at Birth

Exclusive Breastfeeding for 6 months

Under 5 Mortality Rate

Children under five who are stunted

Proportion of demand for family planning satisfied

What are they ?

Antenatal care coverage

Antiretroviral prophylaxis

Postnatal care for mothers and babies within two days

Three doses combined of diphtheria tetanus-pertussis

Antibiotic treatment for suspected pneumonia

Maternal mortality ratio:

- **Maternal death** is the 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.

- The **maternal mortality ratio** (MMR) is the **ratio** of the number of **maternal deaths** during a given time period per 100,000 live births during the same time-period.

Maternal mortality in 1990-2015

WHO, UNICEF, UNFPA, World Bank Group, and United Nations Population Division Maternal Mortality Estimation Inter-Agency Group

SAUDI ARABIA

Year	Maternal mortality ratio (MMR)[a]	Maternal deaths	AIDS-related indirect maternal deaths	Live births[b]	Proportion of maternal deaths among deaths of female reproductive age (PM %)
	Per 100 000 live births (lb)	Numbers	Numbers	Thousands	
1990	46 [32-67]	270	0	579	5.6
1995	33 [23-46]	190	0	581	4.2
2000	23 [16-34]	130	0	566	2.9
2005	18 [12-27]	100	0	578	2.3
2010	14 [8-23]	84	0	613	1.9
2015	12 [7-20]	72	0	619	1.6

[a] MMR and PM are calculated for women 15-49 years.
[b] Live birth data are from World Population Prospects: the 2015 Revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat; 2015.

Annual Rate of Reduction	(%)
1990-2015	5.5 [3.7 - 7.5]
1990-2000	6.8 [4.2 - 9.6]
2000-2015	4.7 [2.3 - 7.1]
2005-2015	4.2 [1.4 - 7.1]

Skilled attendant at birth

Definition: An accredited health professional who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth.

Exclusive breastfeeding for six months

Definition: Percentage of infants ages zero to five months who are exclusively breastfed.
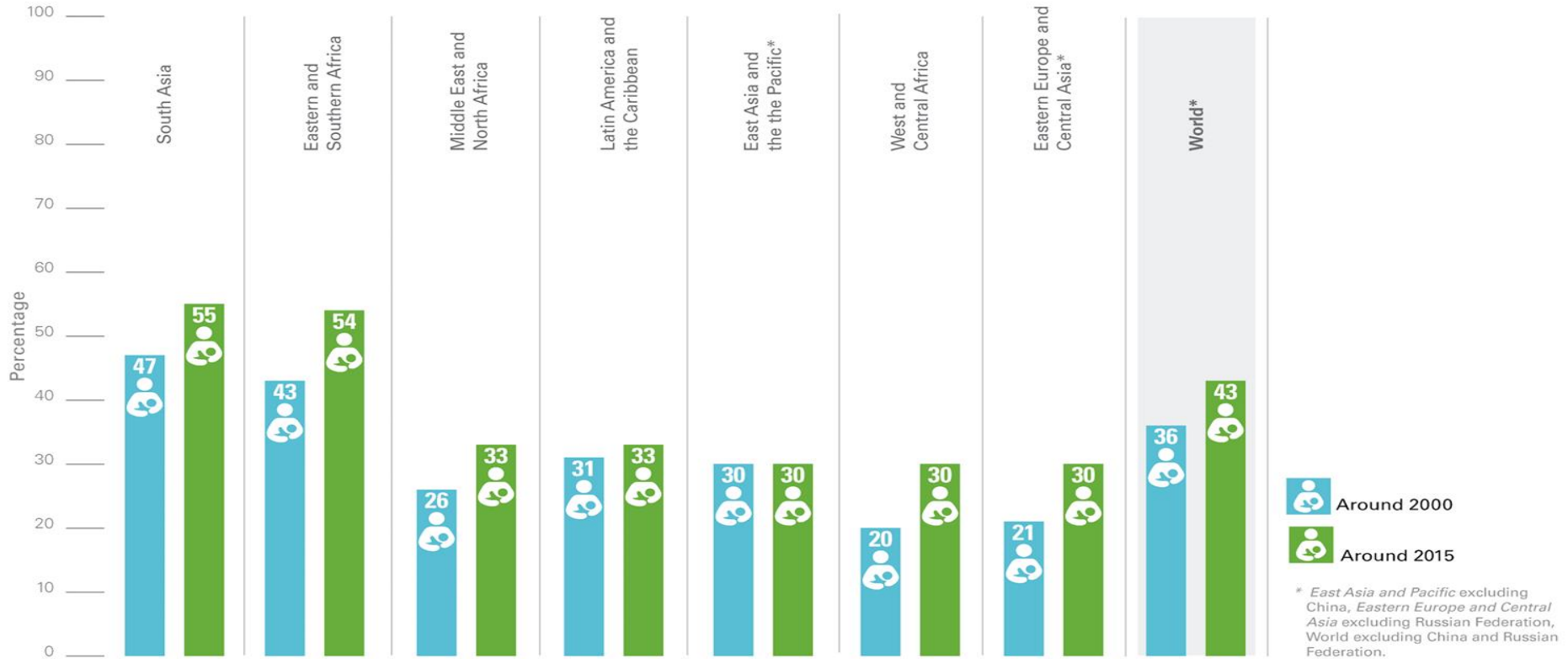
Recommendations from WHO

Exclusive breastfeeding for 6 months.

After 6 months?

Breastfeeding rates around the world

Proportion of demand for family planning satisfied

Definition: Percentage of women of reproductive age (15-49 years or age), who have their need for family planning satisfied.
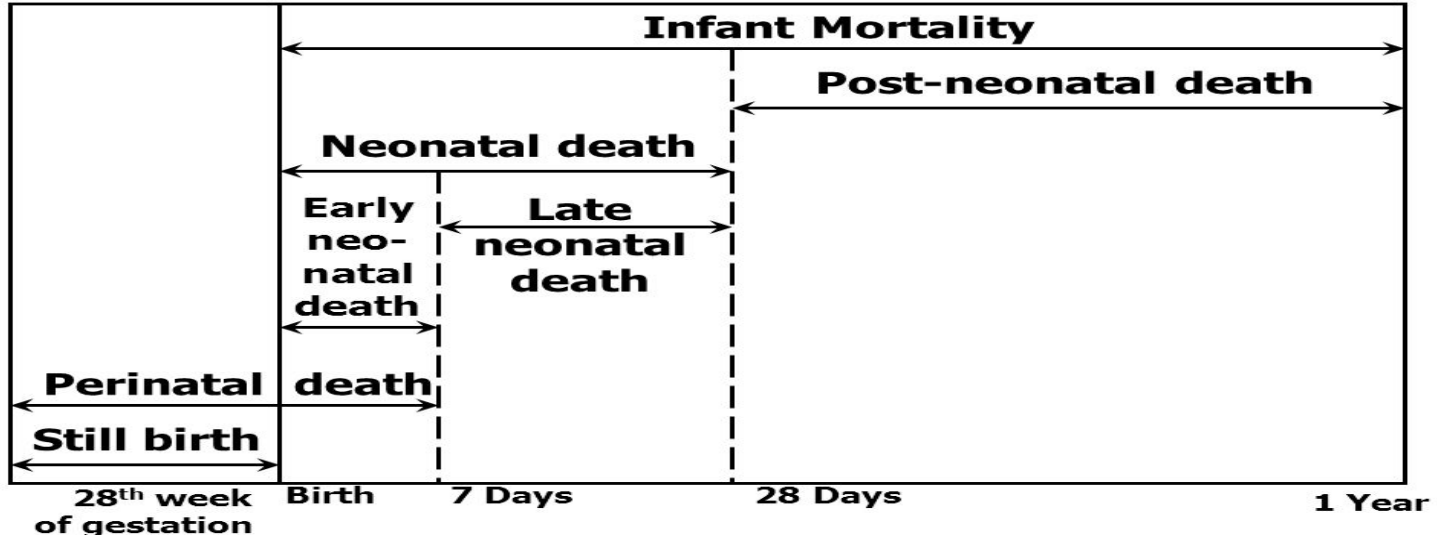
This indicator enables:

- Providing contraceptive services to women and their partners who wish to make decisions about timing of pregnancies.
- Contributes to maternal and child health by preventing unintended pregnancies and pregnancies that are too closely spaced.

Infant health indicators

MCH

Mortality in and around infancy

Perinatal Mortality rate

Deaths between 28th week of gestation to less than 7 days of life expressed as per 1000 of total births (live and still) Reflects maternal health status, quality of maternal care and obstetric services.

Neonatal Mortality rate

Deaths in the first 28 days of life expressed as per 1000 of total live births. Reflects primarily quality of obstetric care and neonatal care as well as maternal nutrition and health status
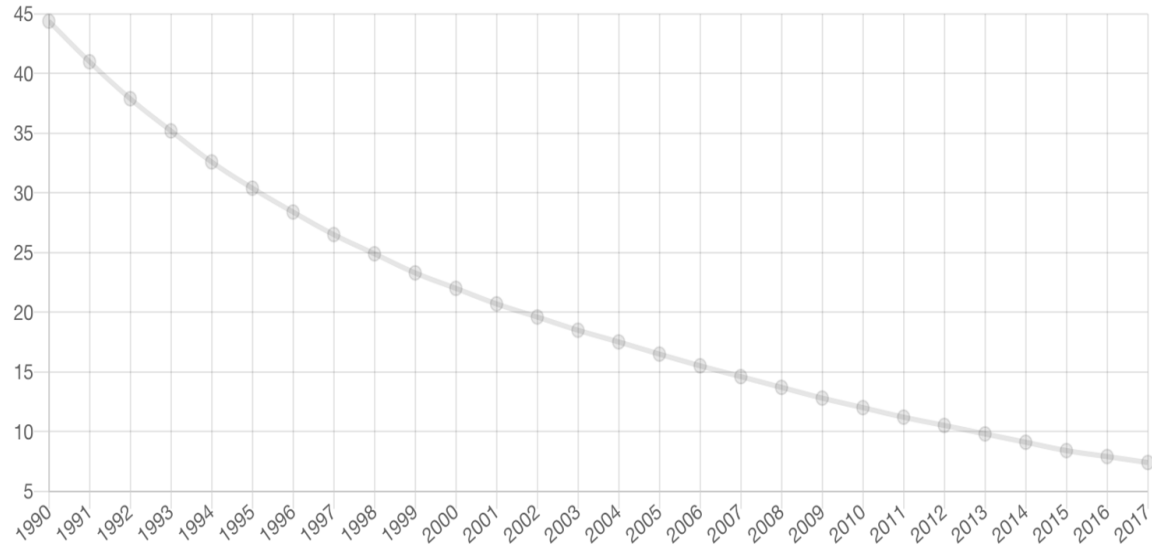
Post neonatal Mortality rate

Deaths between 28 days of life to less than 1 year expressed as per 1000 of total live births.
Reflects infants' health care, nutrition and sanitation of the environment.

Under-5 Mortality

Deaths below 5 years expressed as per 1000 of the number of children below the age of 5 years.

Factors that can affect pregnancy and Childbirth

Case Discussion:

- Aisha is a 29-year old lady, She smokes 15 cigarettes a day. She came to the Primary Care Clinic at KKUH for consultation about getting pregnant for the first time. On examination : Her BP was 150/90 mmhg and Her BMI was 34.

Case Discussion:

- What is the role of family physician here and how would you manage this patient?

- What is your Advice?

1. Preconception:

Preconception health care :

Is the medical care of a woman or man receives from the doctor or other health

professionals that aimed to increase the chance of having a healthy baby.

1. Preconception:

What is involved in preconception counseling?

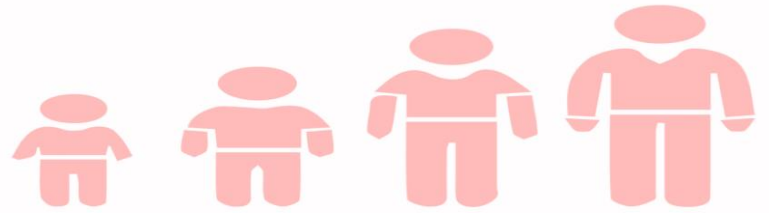Questionnaire, Blood work, Urinalysis ..etc

A)Maternal behaviors like : Tobacco use , alcohol use , failure to consume adequate folic acid.

B)Other conditions like : unintended pregnancy , experiencing physical abuse , experiencing high levels of stress.

C)Certain maternal health conditions like : Diabetes , hypertension , obesity

2. Age:

• The chances of surviving the first year of life were better for infants born to mothers aged 20-34 years than for those born to mothers of other ages.

• The risk of pregnancy complications, such as high blood pressure and gestational diabetes, increases after 35. The odds of genetic problems also increases with age.

3. Antenatal Care:

Is the care received from healthcare professionals during

pregnancy.

1- Folic acid and vitamin D supplements.

2- Nutrition, diet and food hygiene.

3- Lifestyle factors : smoking, recreational drug use and drinking alcohol.

4- Antenatal screening tests.

4. Interconception Health Care:

- Interconception health involves helping a woman **understand the importance of being healthy between pregnancies** and the need to wait at least **18 months** before becoming pregnant again to help optimize birth outcome.

5. Poverty:

- The findings in analysis of NMIHS indicate that, for infants born to women living in poverty in the United States in 1988, overall excess mortality risk was approximately 60% compared with infants born to women living above the poverty level.
- Those living in poverty were more likely to smoke, to have poorer dietary habits, lower levels of education, and engage in higher risk and health-demoting practices.

6. Access to preconception and interconception Health care:

1. Talking to a health-care provider before becoming pregnant at least 6 months.

2. Accessing services such as the Special Supplemental Nutrition Program for Women, Infants, and Children.

Risk Factor in maternal and child health

Risk Factor in maternal and child health

1. Hypertension
2. Heart Disease
3. Gestational diabetes
4. Tobacco & alcohol use
5. Sexually transmitted diseases
6. Nutrition
7. Unhealthy weight
8. Genetic factor
9. Postpartum depression

RISK FACTORS

Hypertension

- **Most common** and complicating 2-3% of pregnancies.

- Risk for problems especially for **Preeclampsia**.

- Decreased blood flow to the placenta.

Heart disease

- Complicates 1% to 4% of pregnancies
- Congenital heart disease (CHD) is the most common pre existing condition.
- Hypertension the most common acquired condition.
- Incidence is increasing likely due to increasing maternal age and CVD risk factors.

Diabetes

- Onset of high blood sugar levels during pregnancy.
- 7% .
- Blood sugar usually returns to normal soon after delivery but it is a risk factor for type 2 diabetes.

- Risk factors for Gestational Diabetes Mellitus (GDM)?
  Age 25.
  BMI ≥ 30.
  Family or personal history.

Unhealthy weight

- Recent CDC studies showed that pregnants who are overweight or obese are associated with a higher pregnancy complication. **Such as**:
  1- Preeclampsia.
  2- GDM.
  3- Stillbirth.
  4- Cesarean delivery.

Unhealthy weight

Recommended weight Gain during Pregnancy (Pounds)			
Before pregnancy Weight	**BMI**	**Recommended Total Range of increased Weight**	**Recommended increased weight in 2nd & 3rd trimester**
Underweight	Less than 18.5	28–40	1 (1-1.3)
Normal weight	18.5–24.9	25–35	1 (0.8-1)
Overweight	25–29.9	15–25	0.6 (0.5-0.7)
Obese	30 and greater	11–20	0.5 (0.4-0.6)

Unhealthy weight

Gaining less ⟶ Small baby

Gaining more ⟶ large baby

Inadequate nutrition

- Inadequate or deficient nutrition for **mother** such as :
  1. **Iron** → morbidity and mortality, Preterm birth and Neurological dysfunction.
  2. **Vit A**→ Night-blindness.
- Inadequate or deficient in nutrition for **neonate** such as:
  1. **Folate** → deficits in the development of the neural tube.
  2. **Calcium** → restricts fetal skeletal development.
  3. **Iron** → intrauterine growth retardation and low birth weight.

Tobacco use

Dangers of SMOKING During Pregnancy

- Smoking effects:
  1. Harder for a woman to get pregnant.
  2. Premature birth
  3. Certain birth defects(Cleft lip or cleft palate)
  4. Risk of miscarriage(placenta can separate).
  5. Sudden Infant Death Syndrome (SIDS).
- Second hand smoke effects:
  Low birth weight, asthmatic attack and SIDS.

Alcohol

- Fetal alcohol spectrum disorders (FASDs):
  lifelong physical,behavioral, and intellectual disabilities.

- Complication of drinking alcohol: Miscarriage, stillbirth.
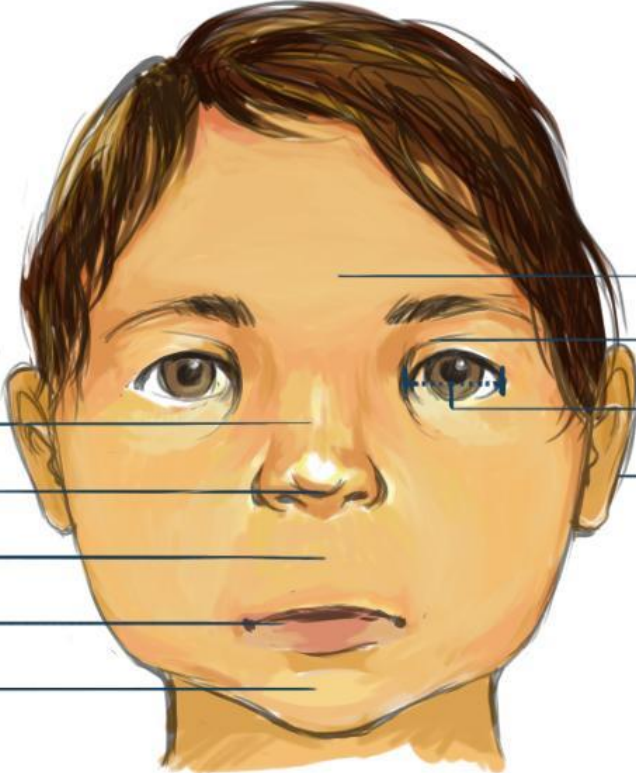
FETAL ALCOHOL SYNDROME

Microcephaly (small forehead)

Epicanthal folds

Short palpebral fissures

Minor ear abnormalities

Low nasal bridge

Short nose and flat midface

Smooth philtrum

Thin upper lip

Micrognathia (small jaw)

Sexually transmitted diseases

- Risk of transmitting HIV To the newborn. (Perinatal **HIV/AIDS**)
- It's recommended that all women who are pregnant or planning to get pregnant should get tested for HIV as early as possible.
- If a woman is treated for HIV early in her pregnancy, the risk of transmitting HIV to her baby can be **1**% or less **HOW**?

Sexually transmitted diseases

Worth mentioning STDs:

1. Chlamydia and Gonorrhea

2. Syphilis

3. Herpes simplex virus

4. Hepatitis B & C
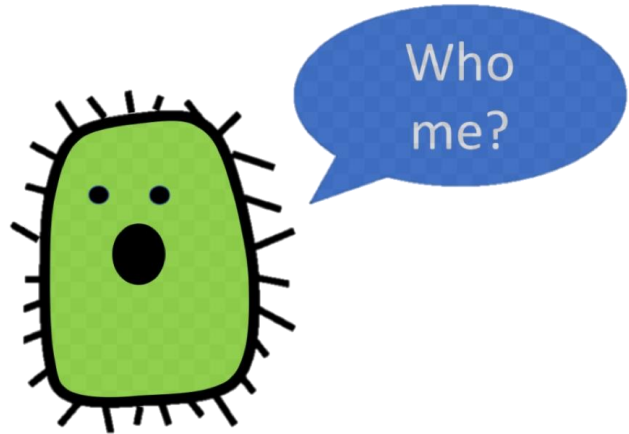
Depression

- Depression, a mood or emotional state that is marked by feelings of low self-worth or guilt and a reduced ability to enjoy life

- Can lead to:
  1. Poor nutrition.
  2. Drinking, smoking and suicidal behavior.

- Babies born to mothers who are depressed may be less active, show less attention and be more agitated than babies born to moms who are not depressed.

Genetic conditions

- More than 50 percent of miscarriages in the early stages of pregnancy are due to abnormalities of the chromosomes.

- Examples:
  1. Cystic fibrosis
  2. Marfan syndrome
  3. PCKD
  4. Neurofibromatosis.

Social and Physical Determinants of Maternal and Child Health

Social and Physical Determinants of maternal Child Health

A range of biological, social, environmental, and physical factors have been linked to maternal, infant, and child health outcomes.

1- Biological Determinants:

•Birth Weight: low birth weight (< 2.5 kg) & high birth weight (> 4 kg).

•Age of The Mother : <19 years or >over 30 years.

•Repeated pregnancies : risk of miscarriage.

•Birth Spacing: < 1 year = 2-4 times risk of mortality.

•Multiple Births: more risk due to low birth weight.

•Family Size: 3 or more children, more frequent/prolonged illness.

2- Social Determinants:

INCOME

EDUCATION

NUTRITION

VIOLENCE

HEALTH CARE
QUALITY
(DEVELOPING
COUNTRIES)

ENVIRONMENTAL
CONDITIONS

CULTURE

How to improve the health and well-being of women, infants, children, and families

Do you know that:

• approximately 830 women die every day from causes related to pregnancy and childbirth.

• **5.9 million** children under age five died in 2015, 16000 every day.

• With quality health care, many of these deaths could be prevented.

WHAT ARE PREGNANT WOMEN **DYING** FROM?

28%

Pre-existing medical conditions exacerbated by pregnancy (such as diabetes, malaria, HIV, obesity)

3%

Blood clots

8%

Abortion complications

9%

Obstructed labour and other direct causes
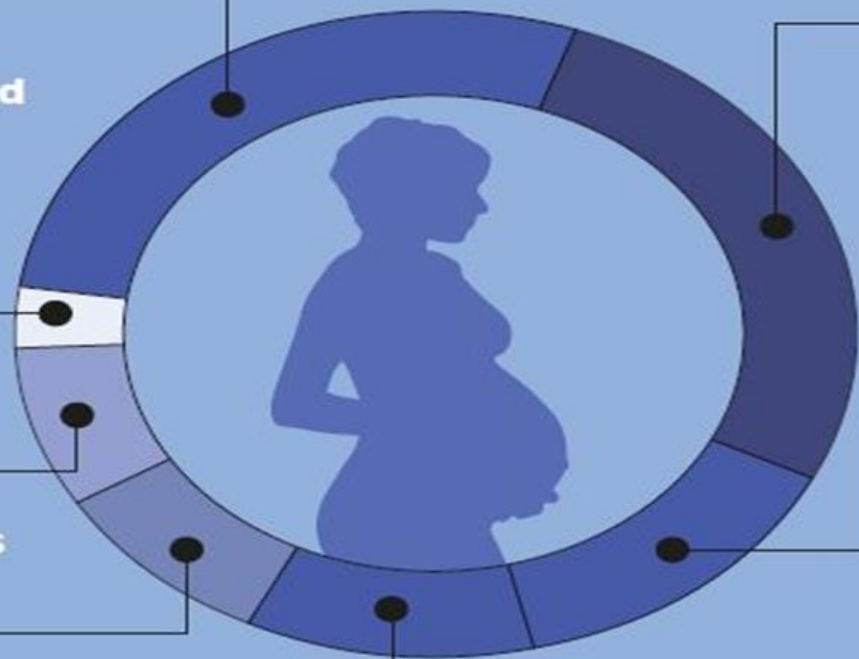
27%

Severe bleeding

14%

Pregnancy-induced high blood pressure

11%

Infections (mostly after childbirth)

How to improve Maternal health?

- **First 24 hours**:

  assessment of **vaginal bleeding, uterine contraction, Temperature & heart rate** should be done routinely during the **first 24 hours.**

- **Breastfeeding**

  should be assessed.

- **Emotional wellbeing:**

  women should be asked about their emotional status and what family & social support she has.

How to improve Maternal health?

- **Postpartum depression:**

  After **10–14 days**, all women should be assessed for postpartum depression

- **Sexual intercourse:**

  All women should be asked about sexual intercourse and possible dyspareunia as part of an assessment of overall well-being **2–6 weeks after birth.**

- **Iron and folic acid:**

  supplementations should be provided for at least 3 months after delivery**.**

How to improve infancy health?

• **Infant mortality:**

Causes:

- Birth defects

- Preterm birth and low birth weight

- Congenital anomalies

- Maternal complications of pregnancy.

- Sudden Infant Death Syndrome (SIDS).

- Injuries (e.g., suffocation).
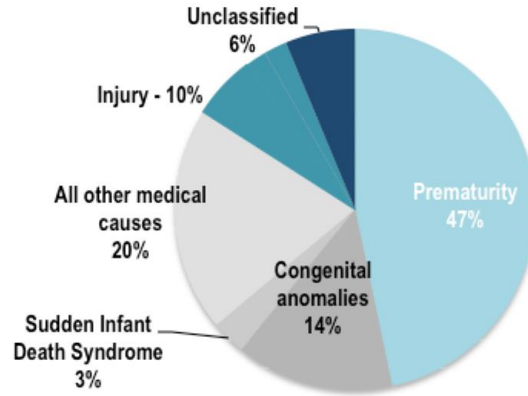
How to improve infancy health?

•Promote early and exclusive breastfeeding (EBF).

• Evidence shows EBF **reduces the risks of mortality and morbidity** and improves post-neonatal outcomes.

•**Preterm and low-birth-weight** babies should be identified as soon as possible and should be provided special care.

•A full clinical examination should be done 1 hour after birth. This includes giving **vitamin K prophylaxis** and **hepatitis B vaccination** (within 24 hours).

Prenatal care

- Definition: Health care that a pregnant woman receives from an obstetrician or a midwife. Services needed include dietary and lifestyle advice, weighing to ensure proper weight gain, and examination for problems of pregnancy.

What is your role as a family physician?

Quality antenatal care will:

Encourage women to seek **skilled care at childbirth**

Reduce stillbirths, childbirth complications and newborn deaths

Help women get care and counselling for HIV, malaria, TB and other conditions

Quality antenatal care should be available for all women to ensure a positive pregnancy experience.

World Health Organization

Perinatal care

- Definition: The care of women and a fetus or newborn given before, during, and after delivery from the 28th week of gestation through the 7th day after delivery.

Postnatal care

- Babies should receive care for 6–8 weeks after the birth.

Advices given on:

- Breastfeeding.

- Management of common and serious health problems.

How to improve maternal and child health?

Vaccinations:

Before pregnancy: Measles | Rubella.

During pregnancy: Vaccine to protect against whooping cough.

To the infant: Hepatitis B | TB | Chickenpox.

Childhood Immunization Schedule in KSA - 2013

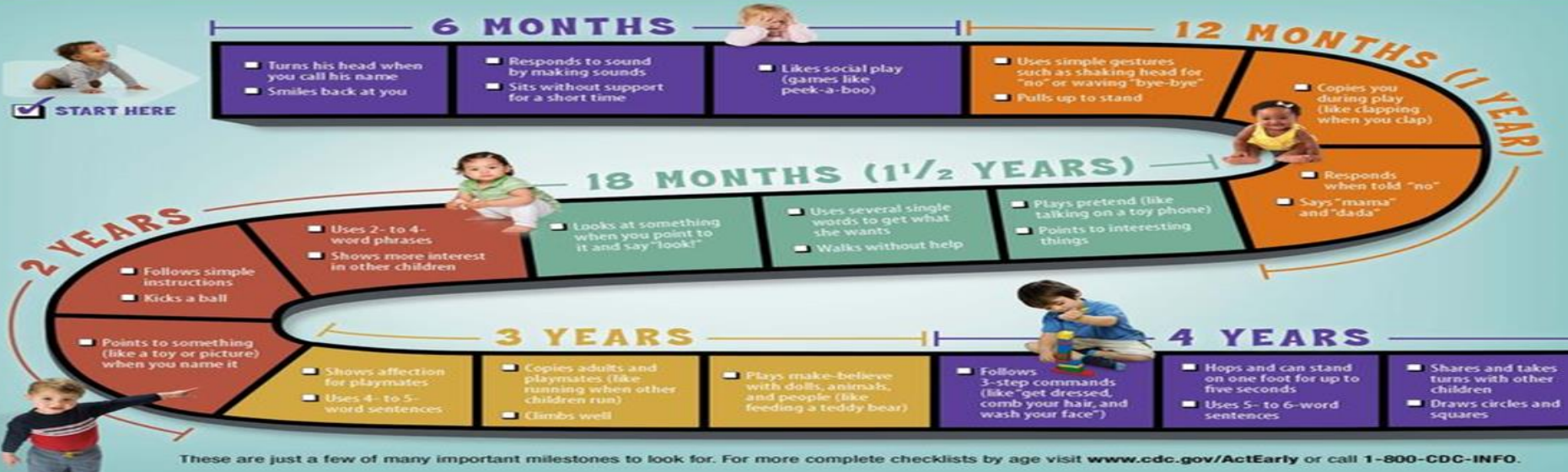| Age:	Vaccines:
At birth	BCG / Hepatitis B
2 Months	IPV /DTaP / Hepatitis B/ Hib/Pneumococcal Conjugate (PCV)/Rota
4 Months	IPV /DTaP / Hepatitis B/ Hib/Pneumococcal Conjugate (PCV)/Rota
6 Months	OPV/IPV /DTaP/ Hepatitis B/ Hib/Pneumococcal Conjugate (PCV)
9 Months	Measles / Meningococcal Conjugate quadrivalent (MCV4)
12 Months	OPV/ MMR/ Pneumococcal Conjugate (PCV)/Meningococcal Conjugate quadrivalent (MCV4)
18 Months	OPV/DTaP/Hib/ MMR/ Varicella/ Hepatitis A
24 Months	Hepatitis A
First class Primary School age	OPV/ DTaP(Td) / MMR/Varicella

What do we mean by child development milestones?

Milestones

- A **growth chart** is used by pediatricians and other health care providers to follow a child's growth over time.
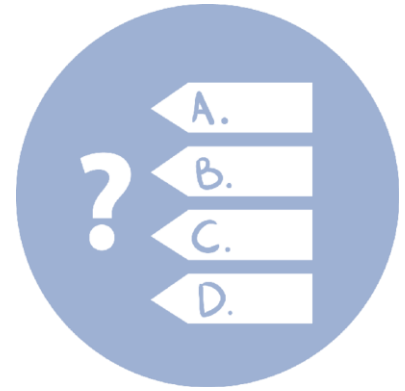

Your Child's Early Development is a Journey
Check off the milestones your child has reached and share your child's progress with the doctor at every visit.

START HERE

6 MONTHS
- Turns his head when you call his name
- Smiles back at you
- Responds to sound by making sounds
- Sits without support for a short time
- Likes social play (games like peek-a-boo)

12 MONTHS (1 YEAR)
- Uses simple gestures such as shaking head for "no" or waving "bye-bye"
- Pulls up to stand
- Copies you during play (like clapping when you clap)
- Responds when told "no"
- Says "mama" and "dada"

18 MONTHS (1½ YEARS)
- Looks at something when you point to it and say "look!"
- Uses several single words to get what she wants
- Walks without help
- Plays pretend (like talking on a toy phone)
- Points to interesting things

2 YEARS
- Uses 2- to 4-word phrases
- Shows more interest in other children
- Follows simple instructions
- Kicks a ball
- Points to something (like a toy or picture) when you name it

3 YEARS
- Shows affection for playmates
- Uses 4- to 5-word sentences
- Copies adults and playmates (like running when other children run)
- Climbs well
- Plays make-believe with dolls, animals, and people (like feeding a teddy bear)
- Follows 3-step commands (like "get dressed, comb your hair, and wash your face")

4 YEARS
- Hops and can stand on one foot for up to five seconds
- Uses 5- to 6-word sentences
- Shares and takes turns with other children
- Draws circles and squares

These are just a few of many important milestones to look for. For more complete checklists by age visit www.cdc.gov/ActEarly or call 1-800-CDC-INFO.

Child Care:

- **Child care** is the caring for and supervision of a child or children, usually from age six weeks to age thirteen.

- Child care is the action or skill of looking after children by a day-care center, babysitter, or other providers.

- Child care if done efficiently could help prevent harm and promote a healthy and safe environment to the children to grow.

Check your phones to answer the MCQs.

Q1. What is the leading cause of morbidity and mortality among children ?

A. Unintentional injuries

B. Cancer

C. Congenital anomalies

D. Malnutrition

Q2. What is the newborn normal weight ?

A. 1.5 kg

B. 2.5 kg

C. 5 kg

D. 8.5 kg

Q3. Which of the following is the most common complication of pregnancy ?

A. Hypertension

B. Preeclampsia

C. Gestational diabetes

D. Depression

Q4. What is the recommended duration of exclusive breastfeeding?

A. Two months

B. Six months

C. One year

D. Two years

Q5. Which of the following vaccines is given at first class primary school age ?

A. Hepatitis A

B. Hepatitis B

C. Varicella

D. Pneumococcal conjugate (PCV)

Q6. Which of the following is a macro determinant in maternal and child health?

A. Social factors

B. Community

C. Public health

D. Specialized care

Q7. Which of the following is assessed routinely during the first 24 h after delivery?

A. Dyspareunia

B. Postpartum depression

C. Temperature

D. Urine output

Q8. Which of the following is the commonest cause of infant mortality?

A. Neonatal hemorrhage

B. Respiratory distress of newborns

C. Injuries

D. Preterm birth

Q9. Which of the following is the most common and complicating risk factor in Pregnancies?

A. Tobacco Smoking

B. Hypertension

C. Sexully transmitted diseases

D. Genetic Disorders

Q10. Which of the following Risk Factors is the cause of more than 50% of miscarriages in pregnancies?

A. Tobacco Smoking

B. Hypertension

C. Sexully transmitted diseases

D. Genetic Disorders

References:

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ROLE PLAY

THANK YOU

ANY QUESTIONS?