Maternal and Child health

# Objectives:

1. Health behaviors and health systems indicators that affect the health, wellness, and quality of life of women, children, and families.
2. Factors can affect pregnancy and childbirth, including: Preconception health status, Age, Access to appropriate preconception and interconception health care, Poverty
3. Health risks may include: Hypertension and heart disease, Diabetes, Depression, Genetic conditions, sexually transmitted diseases (STDs), Tobacco use and alcohol Abuse, Inadequate nutrition, Unhealthy weight
4. Social and Physical Determinants of Maternal Health
5. Social and Physical Determinants of Infant and Child Health
6. How to improve the health and wellbeing of women, infants, children, and families.

# Maternal Health

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

# 1-Maternal and Child Health indicators

Health indicators are the variables that reflect the state of health of people in the community.

They inform about the quality and access of health care. And they are considered as a quantitative measures.

They are used for: Assessment, Comparing, Monitoring

Assessment is when assessing the quality of health care in a given community

Comparing is when comparing the quality of health care between multiple communities

Monitoring is when we want to check if the quality of health care increasing or decreasing

Health indicators for maternal and child health are:

* Maternal Mortality Ratio MMR
  + All maternal death within a period (usually 1 year) / Total number of live births within the same year X 100000
* Skilled attendant at birth
* Exclusive breastfeeding for six months
* Under-five child mortality, with the proportion of newborn deaths
* Children under five who are stunted
* Proportion of demand for family planning satisfied
* Antenatal care coverage

# 2-Factors can affect pregnancy and childbirth

## Preconception health care

It is the medical care given to a woman or man to increase the chance to have a healthy baby.

## Interception health care

It involves helping a woman to understand the importance of being healthy between pregnancies and she need at least 18 months before becoming pregnant again to optimize birth outcome.

## Health status

* Maternal Behaviors
  + Smoking, Alcohol abuse, Failure to consume adequate folic acid
  + May lead to **Poor birth outcome**
* Other conditions
  + Unintended pregnancy, experiencing physical abuse, High stress
  + May lead to **Poor pregnancy outcome**
* Certain maternal health conditions
  + Diabetes, Hypertension, Obesity
  + **Poor infant outcomes** and **Long term negative impact on woman’s health**

## Age

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

The most favorable survival rates were among first births to mothers aged **20-24** and among first and second births to mothers aged **25-29**.

The risk of pregnancy complications **increases** after 35 and continues to rise in 40s.

The odds of genetic problems also jump as woman gets older: At 40, her chance of conceiving a child with Down syndrome is **one in 100**; at 45 it's **one in 30**.

## Access to appropriate Preconception

Talking to a healthcare provider before becoming pregnant at least 6 months.

**Why?**

Because a woman might have a subsequent pregnancy, services in the postpartum period

For example: Accessing services such as Special supplemental nutrition program for women, infants, childrens, so the woman can maintain or regain good health.

## Poverty

Infants born to women living in poverty in USA in 1988 have mortality risk of 60% compared with women living above poverty line.

Women who live in poverty more likely to have poor behaviors and conditions

* Smoking
* Poor dietary habits
* Lower level of education

# Stages of Maternal health

Prenatal care

6-12 months before pregnancy

Perinatal care

From detection of pregnancy until delivery

Postnatal care

After delivery, to insure there is no complications

# Prenatal tests

* Urine sample for infection and confirmation of pregnancy
* Blood pressure, Weight and Height
* Prenatal blood tests
* Complete physical exam, including pelvic exam.
* Gonorrhea and chlamydia cultures.
* HIV tests
* Pap smear test to screen for cervical cancer
* Ultrasound test

# 3-High risk factors in maternal and child health

## Hypertension

It is the **most common** risk factor

Complicates **2-3%** of pregnancies

Preeclampsia

* High blood pressure and signs of organ damage (Usually liver and kidneys), usually after 20 weeks of pregnancy.

Complications of Hypertension:

* Decrease blood flow to placenta
* Premature delivery
* Placental abruption

## Heart disease

## Gestational diabetes

It is when a **non-diabetic** woman develops high blood sugar levels during pregnancy

Blood sugar usually return to normal after delivery. But there is a risk for type 2 diabetes.

Risk factors:

* Age > 25
* Family history
* BMI > 30

Complications:

* Mother: Type 2 diabetes, preeclampsia
* Baby: Increase birth weight, Preterm delivery with respiratory distress syndrome

## Tobacco abuse

~10% of women reported smoking during the last 3 months of pregnancy

Complications:

* Miscarriage
* Risk of Sudden Infant Death Syndrome (SIDS)
* Hard to conceive
* Placenta problems
* Cleft palate

## Alcohol abuse

“When a pregnant woman drinks, so does her baby”

Any amount of alcohol can cause complications

Complications:

* Miscarriage
* Stillbirth
* Fetal alcohol spectrum disorders:
  + Abnormal facial features
  + Small head size
  + Low body weight
  + Learning disabilities

## Sexually transmitted diseases

**HIV / AIDS**

* All women (Pregnant or planning to get pregnant) should test for HIV.
* The chance to transmit the disease to the baby is 1% or less if treated early.

**Herpes**

* Herpes is **safe** during pregnancy (before delivery)
* Herpes lesion are highly contagious so it is better to do **cesarean section**

Syphilis

* Might get transmitted to the baby
* It is linked to premature birth, stillbirth and death in some cases

Gonorrhea

* It is a risk of miscarriage and preterm birth.
* Gonorrhea in newborns most commonly affects the eyes
* It is a risk before and after the pregnancy if not treated for pelvic inflammatory disease.

## Nutrition

Malnutrition

* Mother
  + Fail to gain weight in pregnancy may lead the mother to die while pregnant
* Child
  + Will have low birth weight
  + Restricted fetal growth

Micronutrition

* Iron
  + Mother: Preterm birth, neurological dysfunction and risk of death from bleeding during childbirth
  + Child: Low birth weight
* Vitamin A:
  + Mother: Night blindness
* Folate:
  + Child: Neural tube defect.
* Calcium:
  + Child: Poor skeletal development

## Unhealthy weight

Nearly half of women are overweight or obese before pregnancy, which is associated with a **higher risk of pregnancy complications**. And might lead to a **baby born at unhealthy weight**.

## Genetics factors

More than the half of miscarriages in the early stages of pregnancy are due to **abnormalities of the chromosomes**.

We think genetic factors is the cause of most birth defects

## Postpartum depression

1 in 9 women experience **depression** before, during or after pregnancy

Postpartum depression is depression that occurs after having a baby

Symptoms:

* Extreme worrying about the baby
* Withdrawing from loved ones
* Hopelessness
* Guilt or worthlessness
* Loss of interest in hobbies and activities
* Loss of energy
* Suicidal thoughts

Risk factors:

* Stress
* Preterm delivery
* Having a baby with birth defect or disability

# Postnatal care

Provide postnatal care in the first 24 hours of every birth

Delay facility discharge for at least 24 hours

Visit women who give birth in home within the first 24 hours

Provide every mother and baby 4 postnatal visits on:

* First day
* Third day
* Second week
* Sixth week

# How to improve Maternal health

First 24 hours: assessment of vaginal bleeding, uterine contraction, temperature and heart rate should be done routinely during the first 24 hours

Breastfeeding should be assessed

Women should be asked about their emotional wellbeing, what family and social support they have

Iron and folic acid supplementation should be provided for at least 3 months

Assess for postpartum depression after 10-14 days

After 2-6 weeks, ask about sexual intercourse and possible dyspareunia as a part of an assessment of overall well being

# How to improve child 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.
* All women and newborns should receive care that prevent hospital acquired infections
* A full clinical examination should be done 1 hour after birth. This includes giving vitamin K prophylaxis and hepatitis B vaccination (within 24 hours).
* for every 1,000 babies that are born, almost 6 die during their first year
* The five leading causes of infant death:
  1. birth defects.
  2. preterm birth or low birth weight.
  3. maternal complications of pregnancy.
  4. sudden infant death syndrome (SIDS).

unintentional injuries

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

# Social and physical determinants of maternal and child health

**Biological Determinants**

* Birth weight : low birth weight (< 2.5 kg) & high birth weight (> 4 kg)
* Age of The Mother
* Repeated pregnancies (risk of miscarriage )
* Birth Spacing: < 1 year = 2-4 times risk of mortality.
* Multiple Births: more risk due to low birth weight

**Social Determinants**

The social environment exerts a strong influence on child health especially through :

* + Income
  + Education
  + Health care quality ( developing countries )
  + Environmental conditions
  + Violence ( wars )

**Culture Determinants**

* + Religion
  + Customs
  + Early marriages
  + Sex of child
  + Cleanliness, Eating, Clothing.
  + Child care

**Vaccinations**

* + Before pregnancy: measles, rubella
  + During pregnancy: Tdap vaccine to protect against whooping cough
  + For infants: hepatitis B, TB, Chickenpox
  + ****Flu shot could be taken during or before pregnancy

**Milestones**

* Developmental milestones are behaviors or physical skills seen in infants and children as they grow and develop. such as Rolling over, crawling, walking, and talking.

1st – 2nd month milestones

* Begins to smile at people
* Turns head toward sounds
* Begins to follow things with eyes and recognize people at a distance
* Makes smoother movements with arms and legs

3rd – 5th month milestones

* Smiles spontaneously, especially at people , like to play
* Cries in different ways to show hunger, pain, or being tired
* Uses hands and eyes together, such as seeing a toy and reaching for it
* Recognizes familiar people and things at a distance
* Holds head steady, unsupported
* May be able to roll over from tummy to back

6th – 8th month milestones

* Knows familiar faces and begins to know if someone is a stranger
* Responds to sounds by making sounds
* Responds to own name
* Rolls over in both directions (front to back, back to front)

Begins to sit without support

9th – 12th month milestones

* May be afraid of strangers
* Understands “no’’
* Makes a lot of different sounds like “mamamama” and “bababababa”
* Uses fingers to point at things
* Stands, holding on
* Can get into sitting position
* Crawls

18th month milestone

* Says several single words
* Points to show someone what he wants
* Knows what ordinary things are for; for example telephone
* Walks alone
* Can help undress herself
* Drinks from a cup

2 year milestones

* Shows more and more independence
* Knows names of familiar people and body parts
* Says sentences with 2 to 4 words
* Kicks a ball
* Begins to run and climb

3rd year milestones

* Shows a wide range of emotions
* Dresses and undresses self
* Says first name, age, and sex
* Climbs well, Runs easily

4th year milestones

* Talks about what she likes and what she is interested in
* Tells stories
* Names some colors and some numbers
* cuts and mashes own food with supervision
* Jump

5th year milestones

* More likely to agree with rules
* Speaks very clearly
* Can use the toilet on her own