MHC (1+2+3+4)

Maternal and child health care is one of the main components of (PHC) systems as declared at the Alma Ata Conference in 1978.

reproductive age groups, i.e., 15 - 49

*** Objectives & targets of MCH services:**

1.To reduce morbidity & mortality among mothers & children, through health promotion activities rather than curative interventions.

2.To improve the health of women & children through expanded use of fertility regulation methods, adequate antenatal coverage, & care during & after delivery.

3.To reduce unplanned or unwanted pregnancies through sex education & the wider use of effective contraceptives

4.To reduce perinatal & neonatal morbidity & mortality.

5.Promotion of reproductive health & the physical & psychosocial development of the child & adolescent within the family.

6.To reduce the incidence & prevalence of sexually transmitted infections (STIs), in order to reduce the transmission of HIV infection.

7.To reduce the incidence & prevalence of cervical cancer.

8.To reduce female genital mutilation & provide appropriate care for females who have already undergone genital mutilation

9.To reduce domestic & sexual violence & ensure proper management of the victims.

10.To increase political awareness on the need to develop comprehensive intersectoral population policies using all available resources.

*** Justifications for the provision of MCH Care (why) :**

1.Mothers & children make up over 1/2 of the population.

2.Maternal mortality is an adverse outcome of many pregnancies.

3.Miscarriage, induced abortion, & other factors, are causes for over *40%* of the pregnancies in developing countries to result in complications, illnesses, or permanent disability for the mother or child.

4.About *80%* of maternal deaths in developing countries are due to direct obstetric causes (They result from obstetric complications of the pregnant state (pregnancy, labor, & puerperium), from intervention, omissions, incorrect treatment, or from a chain of events resulting from any of the above)

5.Most pregnant women in the developing world receive insufficient or no prenatal care & deliver without help from appropriately trained health care providers.

6.Poorly timed unwanted pregnancies carry high risks of morbidity & mortality, as well as social & economic costs, particularly to the adolescent & many unwanted pregnancies end in unsafe abortion.

7.Poor maternal health hurts women's productivity, their families welfare, & socio-economic development

8.Large number of women suffers severe chronic illness that can be exacerbated by pregnancy & the mother's weakened immune system.

9.Many women suffer pregnancy related disabilities like uterine prolapse after delivery due to early marriage & childbearing & high fertility.

10.Nutritional problems are severe among pregnant mothers. Women with poor nutritional status are more likely to deliver a low-birth-weight infant (<2500g)

11.Majority of *perinatal* deaths are associated with maternal complications, poor management techniques during labor & delivery, & maternal health & nutritional status before & during pregnancy.

12.The large majority of pregnancies that end in a maternal death result in fetal or perinatal death. Among infants who survive the death of the mother, fewer than 10 percent live beyond their first birthday.

13.Ante partum hemorrhage, eclampsia (high blood pressure results in seizures during pregnancy), & other complications are associated with large number of perinatal deaths each year in developing countries plus considerable suffering & poor growth & development for those infants who survive

14.Physiological changes that the mother & her child pass through

15.More sensitive to the environmental factors change

-Assessing risk in pregnancy:

1. Epidemiological risk factors and Social circumstances:

1.Maternal Age.

2. Parity: is defined as the number of times that woman has given birth to a fetus with a gestational age of 24 weeks or more, regardless of whether the child was born alive or was stillborn).

3.social circumstances.

2. Obstetric history:

•History of operative delivery

•History of a stillbirth or neonatal death

•Previous ante-partum hemorrhages

•Previous post-partum hemorrhages

•History of low birth weight infant

3. Medical conditions:

•*Diabetes mellitus*

•*Anemia*

•*Hypertension*

•*Urinary tract infection*

•Heart disease

•Epilepsy

•Variety of problems related to drug usage & conditions treated.

4. Complications arising in pregnancy:

•Hypertensive disorders

•Anemia

•Urinary tract infection

•Ante-partum hemorrhage

•Vaginal bleeding

•Pre-term labour

•Pre-term rupture of membranes

•Abnormal lie/presentation

•Polyhydramnios

•Multiple pregnancy

•Intrauterine growth restriction

•pre-eclampsia.

- Some indicators of health status of women:

1. Maternal Mortality Rate: The most sensitive indicator for maternal health.

2. Malnutrition among women in reproductive age group

3. Teen-age pregnancy

4. Low birth weight delivers (<2500g).

5. Weight gains during pregnancy (normal *8-11kg*)

6. % of women visited ANC clinics

7. % of labor attended by medical staff

8. % of women receiving family planning services

-A woman is sub-Saharan Africa has 1 in 16 chance of dying in pregnancy or childbirth (this the largest difference between poor & rich countries).

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

Maternal and Child Health Services

Premarital.

Preconceptional.

Conceptional: Care during pregnancies and labor: A.N.C. (Risky Pregnancy).

Delivery Care (Centers, Staff and Equipment's).

Postnatal and Family Planning Services.

1-Premarital services : (before marriage)

•Family health education

•Sexuality & puberty

•Marriage & parenthood

•Avoiding hazards (smoking, Alcohol, drugs).

•Nutrition & weight monitoring.

-anemia, BMI, intake of folic acid

-Birth is considered premature, or preterm, when it occurs before the 37th week of pregnancy. A normal pregnancy lasts about 40 weeks.

Premature infants may also be born with life-threatening conditions. These can include: brain hemorrhage, pulmonary hemorrhage, Hypoglycemia, pneumonia, ductus arteriosus, anemia, neonatal respiratory distress syndrome.

•Immunization

-Rubella, commonly known as 'German Measles': is a common childhood viral disease

-primary rubella infection in pregnancy, especially in the **first trimester** (0-12 weeks), can have serious consequences, namely miscarriage, intrauterine fetal demise or congenital rubella syndrome (CRS).

-Vaccination against rubella was fitted into Jordanian Expanded Program for children at 18 months of age. However, this program did not offer rubella vaccination for adolescent girls & adult females which theoretically made the childbearing women as the most susceptible cluster to rubella. Because MMR(3) vaccine is an attenuated (weakened) live virus vaccine, pregnant women should not get MMR vaccine, women should avoid getting pregnant for at least **four** weeks after receiving MMR.

•Medical history, past medical history

•Sexually Transmitted diseases

•Past Menstrual history

•Physical examination

•Genetic Counseling

It's popular in the Middle East, aims to identify β thalassemia carriers among couples planning to marry

•Fertility investigation

•Hormonal for females

•Semen analyses for males

2. Preconception health: (before getting pregnant).

•Past & recent Medical history.

•Social history.

•Controlling risk factors.

•Psychological & social counseling.

3. Antenatal care (ANC) : (conceptiona=during pregnancy)

Objectives of Antenatal care (ANC):

1.Promote & maintain the physical, mental & social health of mother & baby by providing education on nutrition, personal hygiene &birthing process.

2.Detect & manage complications during pregnancy, whether medical, surgical or obstetrical.
3.Assess the risk of complications in later pregnancy, labour or delivery & arrange for a suitable level of care.

4.Develop birth preparedness & complication readiness plan.

5.Help prepare mother to breastfeed successfully, experience normal puerperium, & take good care of the child physically, psychologically & socially .

*** Why antenatal care is important ?** (justifications)

–to ensure a normal pregnancy with delivery of a healthy baby from a healthy mother

-Prevent development of complications

- Decrease maternal and infant mortality (death) and morbidity (disease) by : affording increased chances of the timely identification of high-risk pregnancies.

- Remove the stress and worries of the mother regarding the delivery process

- Teach the mother about child care, nutrition, sanitation and hygiene

- Advice about family planning * The antenatal period is also an ideal opportunity to supply information on future birth spacing, which is recognized as an important factor in improving infant survival.

Antenatal care(ANC):

- Antenatal checks and tests :

*Weight and height checks to calculate BMI (body mass index)

* Urine tests (urine is checked for several things , including protein or albumin)

- Diabetes: High levels of glucose (or sugar) in your urine may indicate pre-existing type 1 or type 2 diabetes or, later on in pregnancy, gestational diabetes (GD).

- Preeclampsia. Protein in urine is sometimes a sign of preeclampsia, or pregnancyinduced high blood pressure.

- A urinary tract infection (UTI). white blood cells in urine may be a sign of a UTI. ((the most cause of maternal morbidity in JORCAN)).

- Dehydration: Dark, colored urine usually signals that there is a need to drink more water.

* Blood pressure test (A rise in blood pressure later in pregnancy could be a sign of pre-eclampsia)

* Blood tests

* ultrasound scan

- To check the baby size.

– To detect abnormalities.

- To show the position of the baby and the placenta. For example, when the placenta is low down in late pregnancy, a caesarean section may be advised (Placenta praevia (low-lying placenta). It may also cause bleeding.

- To check that the baby is growing normally

** * ANC visits : - In low- and middle-income countries (LMICs), ANC utilization has increased since the introduction of the 2002 WHO ANC model, known as 'focused' ANC (FANC), 'reduced but goal-orientated'.

- With the FANC model, healthy women with no underlying pregnancy complications should be scheduled a minimum of four ANC visits, and more than four in the case of danger signs or pregnancy-related illnesses.

1. First visit: during the first trimester of pregnancy (up to 12 weeks of gestation).

2. Second visit at 24 to 28 weeks of gestation.

3. Third visit at 32 weeks

4. Fouth visit between 36 and 38 weeks of gestation.

Pregnancy risk factors that should be considered in ANC:

1-Age under 18 or above 35. in Jordan mean age of females at first marriage 2017 is 26.3 years
2-Height (less 150 cm) And Wt. under or over wt. Short stature may lead to preterm birth, bleeding during delivery.

3-Residency

4-Education

5-Income

6-Past Medical history: Diabetes, cardiac problem, renal disease etc.

7-Past obstetric history: Previous caesarean section, vacuum, or forceps delivery

8. Previous perinatal death, stillbirth

9. Previous Post-partum hemorrhage (PPH)

10. Previous ante partum hemorrhage (APH)

11-General condition of the woman pre-conceptional (Hb level, nutritional, blood pressure and general condition.)

12- Social history: Smoking, Alcohol or any drug therapy, economic status.

****TEENAGE PREGNANCY (adolescent pregnancy) (being pregnant in the age ranging from 15-19 years)**

* Interventions and practice recommendations to manage teenage pregnancy: Encourage long-acting reversible contraception (LARC).

**Pregnancy complications:

A.* HYPERTENSIVE DISORDERS OF PREGNANCY : - Chronic hypertension is defined as : blood pressure exceeding *140/90* mm Hg ***before pregnancy or before 20*** weeks' gestation

* Preeclampsia (PE) : is a multisystem, pregnancy-specific disorder that is characterized by the development of hypertension and proteinuria (elevated levels of protein in the urine) ***after 20*** weeks of gestation.

- PE is a leading cause of maternal, perinatal (from the 20th week of gestation to the 4th week after birth), and foetal/neonatal mortality and morbidity worldwide.

Hypertensive disorders is a leading source of maternal morbidity. (worldwide).

preeclampsia can be thought of as: a disorder of endothelial function with vasospasm. (placental ischemia). * Reduce blood flow from uterus to placenta- placental ischemia-release of proteins from the placenta that go to mother circulations- vasospasm in blood vessels- Hypertension.

* PE can evolve into eclampsia which is a severe complication that is characterized by new-onset of epileptic seizures, due to angiosperms in the brain and brain oedema.

HYPERTENSIVE RISK FACTORS:: (Ca++ supplementation)

MATERNAL:

First pregnancy

Age younger than 18 years or older than 35 years

History of preeclampsia

Family history of preeclampsia in a first-degree relative

Black race

MEDICAL:

Chronic hypertension

Preexisting diabetes (type 1 or type 2)

Renal disease

Obesity

B.Anemia

Anemia is: a medical condition in which there are not enough healthy red blood cells to carry oxygen to the tissues in the body. Anemia during pregnancy is especially a concern because it is associated with low birth weight, premature birth, and maternal mortality.

Anemia is defined during pregnancy as: a hemoglobin (Hb) level ***below 11*** gr/ dL (WHO).

-The critical role of Hb to carry oxygen to the tissues explains the most common clinical symptoms of anemia, which include fatigue, shortness of breath and palpitations.

=20 to 50% of women, and even more in some areas, are considered as anemic.

- Plasma Volume Expansion (PVE) during pregnancy: RBC < PV

* Plasma volume expansion, along with increases in red blood cell (RBC) volume, results in : an expansion of the total blood volume in pregnancy.

* Increased RBC volume is driven by progesterone-mediated increases in erythropoietin, although to a lesser extent than plasma volume. This effect results in a delusional decrease in hematocrit, which is known as the physiologic anemia of pregnancy.

- PATHO-PHYSIOLOGICAL ANEMIA CAUSES:

1. During pregnancy, maternal plasma volume increases to meet the greater circulatory needs of the placenta and maternal organs, with an average increase of 45%. (physio)

2. HEMODILUTION: Hemodilution occurs physiologically in pregnancy. This may result in lower hemoglobin concentrations than in the non-pregnant state. However, many women function well and do not require iron supplementation. (physio)

3. *IRON* DEFICIENCY is responsible for *95%* of anemia of pregnancy. (patho)

4. FOLATE DEFICIENCY due to increased requirements of folate can occur during pregnancy - because of the transfer of folate to the fetus- and during lactation; giving rise to **Megaloblastic anemia**. (patho)

*RISK FACTORS FOR ANEMIA :

1. •Twin or multiple pregnancy

2. •Poor nutrition, especially multiple vitamin deficiencies

3. •Smoking, which reduces absorption of important nutrients

4. •Excess alcohol consumption, leading to poor nutrition

5. •Any disorder that reduces absorption of nutrients

6. •Use of anticonvulsant medications

C. Urinary Tract Infections (UTIs)

The short urethra (The tube from the bladder to where the urine comes out of the body)&its intimate relationship with the vagina considerably increase the risk of a woman developing UTIs. Pregnancy is a state of relative immunocompromised. This immunocompromise may be cause for the increased frequency of UTIs seen in pregnancy.

D. Gestational Diabetes mellitus GDM:

is high blood sugar that develops during pregnancy & usually disappears after giving birth. - It can occur at any stage of pregnancy but is more common in the second half. - It occurs if your body cannot produce enough insulin to meet the extra needs in pregnancy. - In women with gestational diabetes, blood sugar usually returns to normal soon after delivery. But women had

gestational diabetes, has a higher risk of getting type 2 diabetes. - Gestational diabetes can cause problems to the mother as well as her baby during and after birth. But the risk of these problems happening can be reduced if it's detected and well managed. - The most frequently reported perinatal consequence of GDM is macrosomia (usually defined as a neonate weighing over 4 kg) which can increase the risk of caesarean section

** PREVELANCE OF GDM:

In many countries the prevalence of GDM is rising. Some of this is due to:

1. the increasing age at which women are becoming pregnant

2. an increase in obesity amongst women

3. more testing during pregnancy.

*Risk factors for GDM:

Age.

Family or personal history.

Excess weight.

→Complications that may affect the mother from GDM:

1. Caesarean section

2. Polyhydramnios: the excessive accumulation of amniotic fluid — the fluid that surrounds the baby in the uterus during pregnancy.

3. Pre-eclampsia (mother)

4. Type 2 diabetes: 50% mothers develop type 2 diabetes (T2DM) within five to ten years of delivery.

5. An increased risk of macrosomia

6. shoulder dystocia

7. A higher prevalence of obesity

8. T2DM

9. autism spectrum disorders in childhood and early adulthood

**shoulder dystocia: the impaction of the anterior fetal shoulder against the maternal pubic bone after delivery of the fetal head.

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MATERNAL MORTALITY: 42 ~ (mm)

its The death of a woman whilst pregnant or within 42 days of delivery or termination of pregnancy, from any cause related to, or aggravated by pregnancy or its management, but excluding deaths from incidental or accidental causes"(WHO)

mm rate=MATERNAL DEATHS (numerator)/ WOMEN OF REPRODUCTIVE AGE(denominator) .

Maternal mortality is the leading cause of death among women of reproductive age in most of the developing world.

Causes of maternal mortality (from the highest to lowest): diect=80% (all exept 2)

1.Severe Bleeding

2.Indirect causes (like anemia)

3.Infections

4.Unsafe abortion

5.Eclampsia

6.obstructed labor & other direct causes

*Post Natal Care:

• Observe physical status

• Advise, and support on breast-feeding

• Provide emotional and psychological support.

• Health education on weaning (الفطام)and food preparation.

• Advise on Family Planning

• Postnatal care helps prevent complications after childbirth.

• Eighty-three percent of women age 15-49 received a postnatal checkup within two days of delivery; 12% received no postnatal check.

• Eighty-six percent of newborns received a postnatal checkup within two days of birth; 13% received no postnatal check.