Reviewed By
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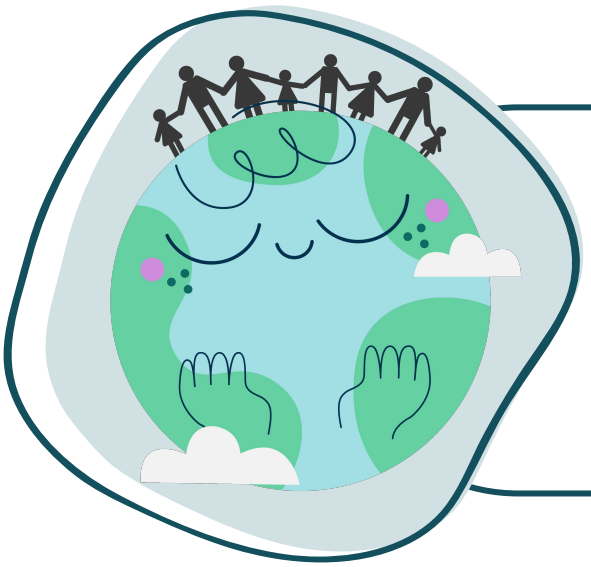

Global Maternal Health

Objectives

- Understand the maternal health issues globally.
- Understand the causes of maternal deaths and mortality.
- Understand the interventions done globally to decrease maternal deaths and morbidly
  - ➢ Antenatal care
  - ➢ Promotion of breast feeding practices.....BFHI
- Discuss and understand what preventive services for maternal health are delivered in KSA.

The Doctor said to refer to the references at the end of the lecture

Color Index

- Main text
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- Doctor notes
- Important
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Editing File

Maternal Health

Definition:

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.

Fast Facts about Maternal Health... WHO Fact sheet sept, 2019

1. Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth.

2. Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide.

3. 94% of all maternal deaths occur in low and lower middle-income countries.

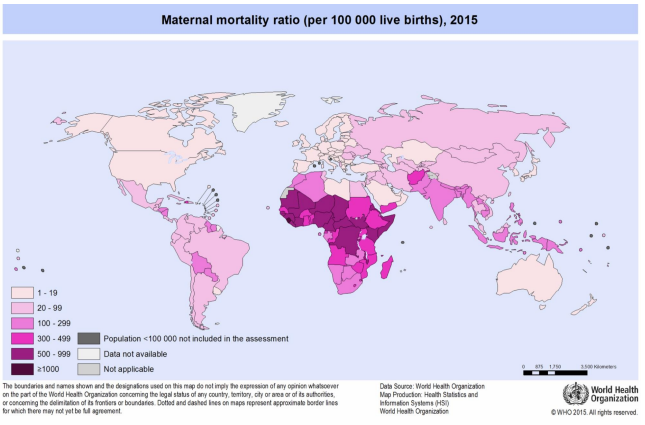
4. Young adolescents (ages 10-14)[1] face a higher risk of complications and death as a result of pregnancy than other women.

5. Skilled care before, during and after childbirth can save the lives of women and new-borns.

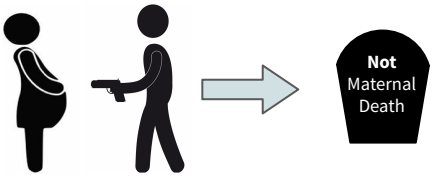
Maternal death:

The death of a women **while pregnant**, (or within **42 days** of termination of pregnancy).

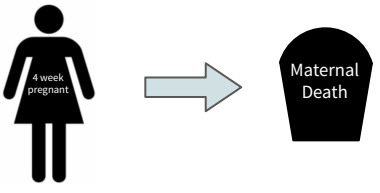
Direct[2] obstetric deaths + Indirect[3] obstetric deaths



Accidental or incidental causes of death[4] are **not** classified as maternal deaths.

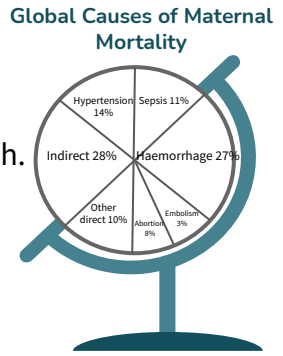


Irrespective of the duration and site of the pregnancy



1: Vulnerable age group, physically and mentally immature.
2: Directly related to pregnancy or within 42 days of termination.
3: Factors that were aggravated by pregnancy.
4: Gun shots, violence, suicide, homicide.

Why women are dying?



- Women die as a result of complications during and following pregnancy and childbirth.
- The major complications that account for nearly 75% of all maternal deaths are:

severe bleeding (mostly after childbirth).[1]

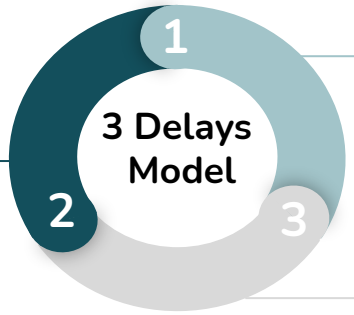
infections[2] (usually after childbirth).

high blood pressure during pregnancy (pre-eclampsia and eclampsia).

complications from delivery[3]. And unsafe abortion.

associated with diseases such as malaria, and AIDS during pregnancy.

Why do women not get the care they need? (Why do these women die?)



Delay in reaching care

Mountains, islands, rivers — poor organization

Delay in decision to seek care

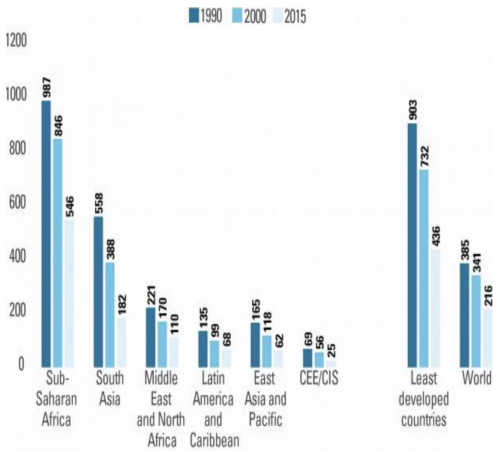
-Lack of understanding of complications
-Acceptance of maternal death
-Low status of women
-Socio-cultural barriers to seeking care

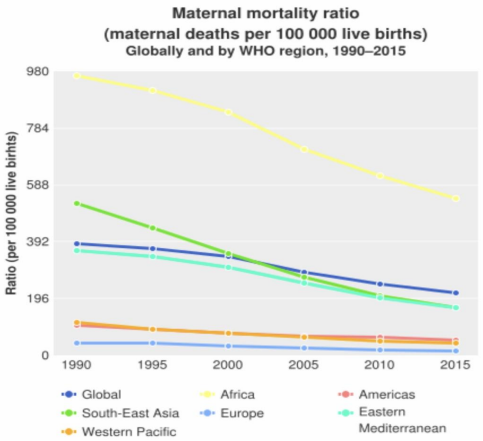
Delay in receiving care

-Supplies, personnel
-Poorly trained personnel with punitive attitude
- Finances

Trends in maternal mortality 1990 - 2015

- Maternal mortality fell by almost half between 1990 and 2015
- Maternal mortality ratio (maternal deaths per 100,000 live births in women aged 15 to 49), by region, 1990, 2010 and 2015



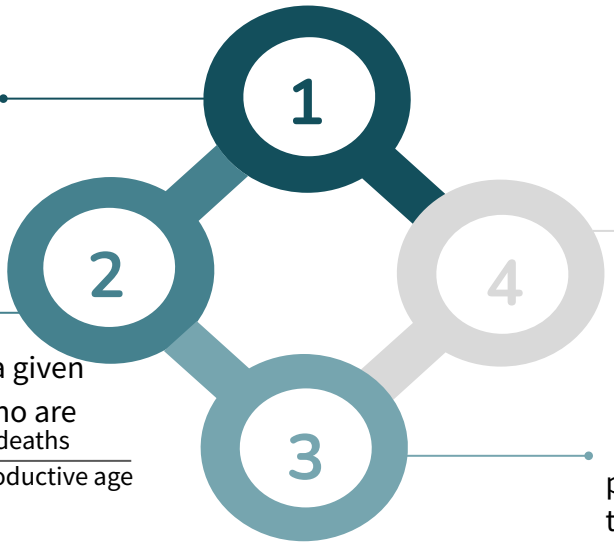


1: postpartum hemorrhage
2: Tetanus so a vaccination is recommended for pregnant women
3: Malsuturing, instrumental or forceps delivery.

Where do Maternal Mortality data come from?

1. Vital registration data - MM Rate and MM Ratio
2. Special studies:
   - ➢ Hospital studies – tracing deaths, interviews
   - ➢ Research, longitudinal studies, verbal autopsy[1]
3. Health service data - maternity registers -MM Ratio
4. Surveys & censuses:
   - ➢ Direct estimation - Rate and Ratio
   - ➢ Sisterhood method[2] (indirect) – Rate and Ratio

Maternal Mortality Indicators[3]



Maternal mortality ratio

The number of maternal deaths per live births = $\frac{\text{Maternal deaths}}{\text{Live births}}$

Maternal mortality rate

The number of maternal deaths in a given period per population of women who are of reproductive age = $\frac{\text{Maternal deaths}}{\text{Women of reproductive age}}$

Life-time risk of maternal morality

= (N of maternal deaths over the reproductive life span) / (women entering the reproductive period)

Proportion maternal

proportion of all female deaths due to maternal causes = (N of maternal deaths in a period / Number of all female deaths in Same period *100

Why has the maternal mortality declined?

Global response

Sustainable Development Goal 3

-3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live

Successful Interventions for Maternal Care

Antenatal care:

- ❑ Nutrition support (anemia, adequate caloric intake).
- ❑ Personal hygiene, dental care, rest (2 hrs) and sleep. (8 hrs), regular bowel habits..enough fiber and fruit intake...avoid constipation.
- ❑ Immunization (mother and the newborn).
- ❑ Drugs; thalidomide (deformed hands), corticosteroids (impair fetal growth). streptomycin (8th nerve damage).
- ❑ Education on delivery and care of the newborn.
- ❑ Identifying high risk pregnancies, smoking and exposure to passive smoking.
- ❑ Emphasizing on ANC visits and maintenance of AN card.
- ❑ Importance and management of lactation (importance/benefits of breastfeeding, exclusive breast feeding, problems arising from breastfeeding).
- ❑ Advise on birth spacing.

1: Interviewing individuals who are familiar with the deceased (family, medical workers) to determine the cause of death.
2: Interviewing the sisters of the deceased.
3: **Remember to multiply by 100 or 1000 to avoid small numbers with decimals**. This is a common mistake students tend to make in the exam

Antenatal care

2016 WHO ANC model

WHO FANC model	2016 WHO ANC model
First trimester	
Visit 1: 8–12 weeks	Contact 1: up to 12 weeks
Second trimester	
Visit 2: 24–26 weeks	Contact 2: 20 weeks Contact 3: 26 weeks
Third trimester	
Visit 3: 32 weeks Visit 4: 36–38 weeks	Contact 4: 30 weeks Contact 5: 34 weeks Contact 6: 36 weeks Contact 7: 38 weeks Contact 8: 40 weeks
Return for delivery at 41 weeks if not given birth.	

Why is ANC critical?

Through timely and appropriate evidence-based actions related to health promotion, disease prevention, screening, and treatment.

1. Reduces complications from pregnancy and childbirth
2. Reduces stillbirths and perinatal deaths
3. Integrated care delivery throughout pregnancy

1 History taking (1st visit)

- Confirm the pregnancy.
- Any previous complications (abortions, stillbirths).
- Calculate LMP (add 9 months and 7 days to the first day of menstruation).
- Record symptoms; fever, vomiting, (**abnormal vaginal bleeding, palpitation, easy fatigability, breathlessness, generalized swelling**,)[1] burning micturition, decreased or absent fetal movements.
- Any concurrent illness; asthma, heart disease, jaundice, HTN, DM, TB[2], HIV[2], STIs, thalassemia, bleeding disorders.
- Family history of twins, congenital malformations.
- History of drug allergies, or drugs.

2 Physical exam

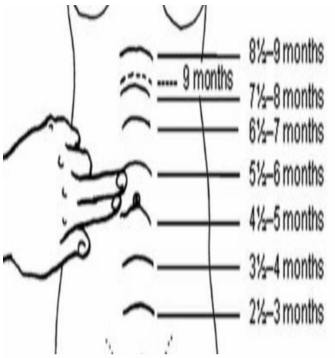
- **General physical;** pallor, pulse (N 60 – 90 mins), respiratory rate (N 18-20 breaths/min), edema (slight edema is normal, if co-existent with any diseases eg: HTN, referral).
- **BP** (every visit)

✱High BP; >= 2 readings 140/90 ✱Urine +2 albumin ✱High BP + albuminuria = preeclampsia ---refer

- **Weight ;** 9-11 kg during pregnancy. Approx. 2 kg /month.
- **Breast exam[3].**

3 Abdominal exam

- At about three months (13-14 weeks), the top of the uterus is usually just above the mother's pubic bone (where her pubic hair begins).
- At about five months (20-22 weeks), the top of the uterus is usually right at the mother's bellybutton (umbilicus or navel).
- At about eight to nine months (36-40 weeks), the top of the uterus is almost up to the bottom of the mother's ribs.
- Babies may drop lower in the weeks just before birth. You can look back at Figure 7.1 in Study Session 7 to see a diagram of fundal height at various weeks of gestation.



1: All are signs of anemia
2: If the pregnant woman is HIV or TB +ve, be prepared to provide drug therapy for the newborn.
3: Checking for any abnormalities, lumps, retracted nipples.

4 Assessment of gestational age

- Routine US + LMP (history).
- Lab investigations:
  - ➢ Pregnancy test, Hb estimation, Urine for albumin and sugar, blood grouping, Rh factor, VDRL, HIV testing, Blood sugar, HBsAg for Hep B.

5 Ultrasound

- Fetal assessment
  - ➢ One ultrasound scan before 24 weeks of gestation (early ultrasound) is recommended for pregnant women to estimate gestational age.
  - ➢ Advantages; improve detection of fetal anomalies and multiple pregnancies, reduce induction of labour for post-term pregnancy, and improve a woman's pregnancy experience.

6 Antenatal care counseling

- **Nutritional recommendations:**
  - ➢ Counselling about healthy eating and keeping physically active during pregnancy is recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy
  - ➢ **Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) of folic acid** is recommended for all acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and pregnant women with preterm birth.
  - ➢ Foods rich in iron; dates, green leafy vegetables, red beans, guavas, red meats
  - ➢ **A pregnant women should avoid smoked meat to protect herself against toxoplasmosis**

7 Antenatal care

- **Maternal assessment**
  - ➢ Hyperglycaemia first detected at any time during pregnancy should be classified as either gestational diabetes mellitus (GDM) or diabetes mellitus in pregnancy.
  - ➢ Health-care providers should ask all pregnant women about their tobacco use (past and present) and exposure to second-hand smoke as early as possible in the pregnancy and at every antenatal care visit.
  - ➢ At every visit, history of TB, HIV, and alcohol intake should also be accessed….in high prevalence areas.

Preventive services

A seven-day antibiotic regimen is recommended for all pregnant women with **asymptomatic bacteriuria (ASB)** to prevent persistent bacteriuria, preterm birth and low birth weight

Tetanus toxoid vaccination is recommended for all pregnant women, depending on previous tetanus vaccination exposure, to prevent neonatal mortality from tetanus.

Tetanus vaccination

Table 2 Guidelines for tetanus toxoid immunization of women who were immunized during infancy, childhood or adolescence[b]

Age at last vaccination	Previous immunizations (based on written records)	Recommended Immunizations	
		At present contact/pregnancy	Later (at intervals of at least one year)
Infancy	3 DTP	2 doses of TT/Td (min.4 weeks interval between doses)	1 dose of TT/Td
Childhood	4 DTP	1 dose of TT/Td	1 dose of TT/Td
School age	3 DTP + 1 DT/Td	1 dose of TT/Td	1 dose of TT/Td
School age	4 DTP + 1 DT/Td	1 dose of TT/Td	None
Adolescence	4 DTP + 1 DT at 4-6 yrs + 1 TT/Td at 14-16 yrs	None	None

[b] Adapted from: Galazka AM. *The immunological basis for immunization series. Module 3: tetanus.* Geneva, World Health Organization, 1993 (WHO/EPI/GEN/93.13), page 17.

Table 1 Tetanus toxoid immunization schedule for women of childbearing age and pregnant women without previous exposure to TT, Td or DTP[a]

Dose of TT or Td (according to card or history)	When to give	Expected duration of protection
1	At first contact or as early as possible in pregnancy	None
2	At least 4 weeks after TT1	1-3 years
3	At least 6 months after TT2 or during subsequent pregnancy	At least 5 years
4	At least one year after TT3 or during subsequent pregnancy	At least 10 years
5	At least one year after TT4 or during subsequent pregnancy	For all childbearing age years and possibly longer

[a] Source: *Core information for the development of immunization policy. 2002 update.* Geneva. World Health Organization, 2002 (document WHO/V&B/02.28), page 130.

Common physiological symptoms

Ginger, chamomile, vitamin B6 and/or acupuncture are recommended for the **relief of nausea** in early pregnancy, based on a woman's preferences and available options.

Advice on diet and lifestyle is recommended to prevent and relieve **heartburn** in pregnancy. Antacid preparations can be offered to women with troublesome symptoms that are not relieved by lifestyle modification.

Non-pharmacological options, such as compression stockings, leg elevation and water immersion, can be used for the management of varicose veins and oedema in pregnancy, based on a woman's preferences and available options.

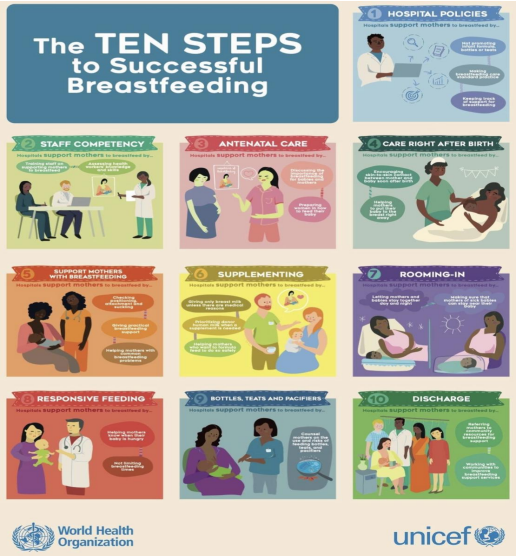
Magnesium, calcium or non-pharmacological treatment options can be used for the relief of **leg cramps** in pregnancy, based on a woman's preferences and available options.

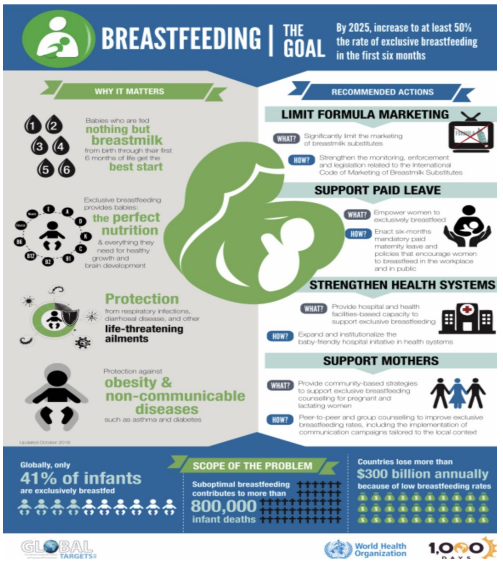
Wheat bran or other fibre supplements can be used to relieve constipation in pregnancy if the condition fails to respond to dietary modification, based on a woman's preferences and available options.

Regular exercise throughout pregnancy is recommended to prevent **low back and pelvic pain**. There are a number of different treatment options that can be used, such as physiotherapy, support belts and acupuncture, based on a woman's preferences and available options.

Baby friendly hospital initiative (BFHI)

- The Baby-friendly Hospital Initiative (BFHI) was launched by WHO and UNICEF in 1991.
- The initiative is a global effort to implement practices that protect, promote and support breastfeeding.





Maternal mortality in KSA

MCH Indicators in KSA	
Under-5 mortality rank	141
Under-5 mortality rate (2012)	9
Infant Mortality rate per 1000 live births (under 1), (2012)	16.2
Annual rate of reduction (%) under-5 mortality rate, (1990-2012)	7.7
Maternal mortality ratio (2010, adjusted)	24
Antenatal care coverage (%) at least 1 visit, 2008	97

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

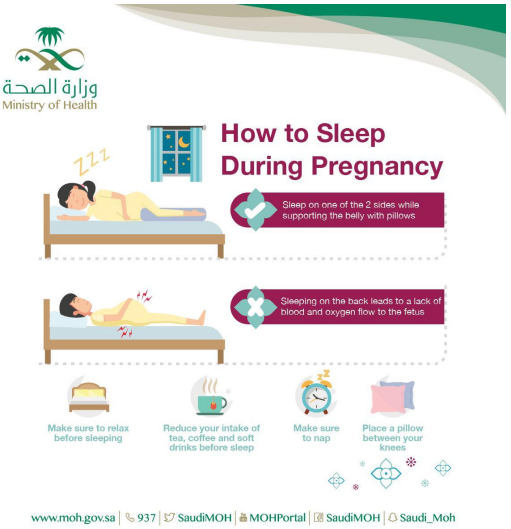
[a] MMR and PM are calculated for women 15-49 years.
[b] Live birth data are from World Population Prospects: the 2015 Revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat; 2015.

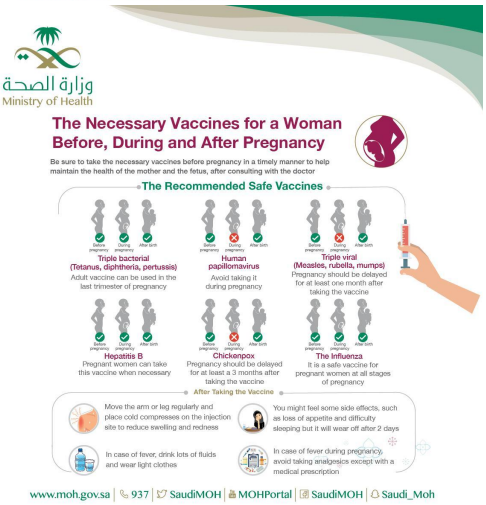
Annual Rate of Reduction	(%)
1990-2015	5.5 [3.7 - 7.5]
1990-2000	6.8 [4.2 - 9.6]
2000-2015	4.7 [2.3 - 7.1]
2005-2015	4.2 [1.4 - 7.1]

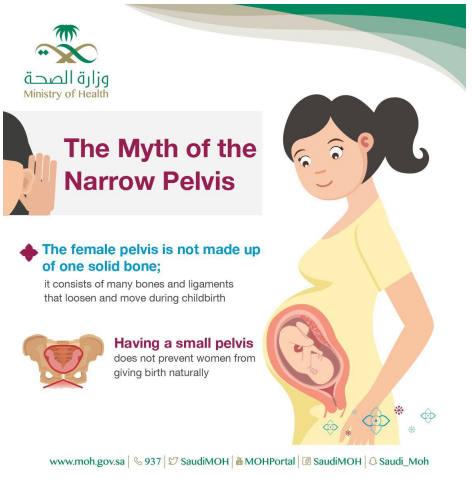
MOH- Mother and Child Health Passport Project

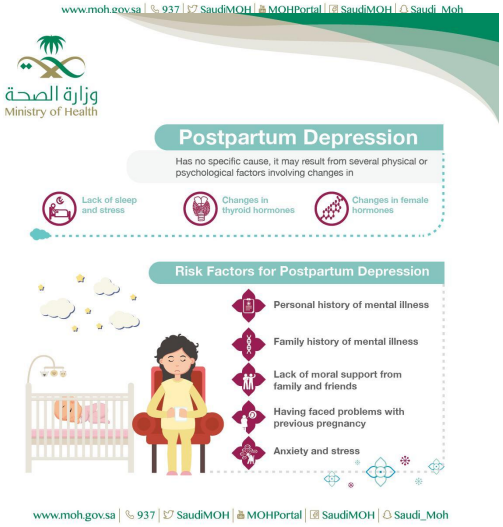
- **Launched : 14 March 2011**
- Provide necessary follow-up care for both mother and child by monitoring the mother's health condition during pregnancy and the child's subsequent health progress until the age of six.
- Reduce both maternal and infant mortality rates.

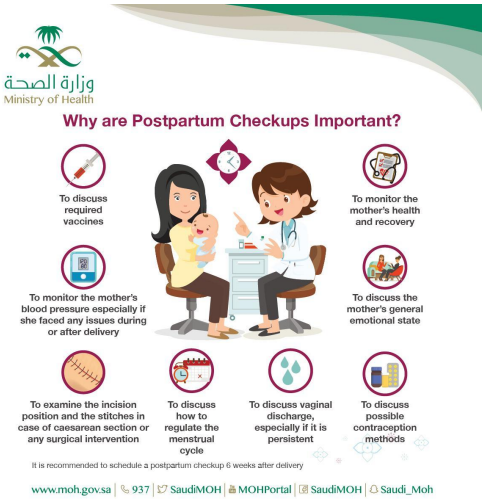
Women's Health (Ministry of Health) Important to know











[Click here to go to the MOH's Website]

Quiz

MCQ

1- What is the number 1 cause of maternal death?

A-unsafe abortion B. Infections C. Bleeding D. high blood pressure during pregnancy

2- Antenatal care is the best time to?

A. Advice on birth spacing B. Advice on taking thalidomide

C. Immunization to the mother only D. Advice to decrease fibers intake

3- which of the following is the definition of maternal mortality ratio?

A-number of maternal death in a given period per population of women in reproductive age

B. Number of maternal deaths per population of women at reproductive age

C. Number of maternal deaths per number of females entering their reproductive age

D. Number of maternal deaths per live births

4- What is the recommended vaccine for pregnant women?

A. Syphilis. B. Malaria. C. Tetanus. D. Rubella

5- Why is antenatal care critical?

A. Reduces complications from pregnancy and childbirth

B. Reduces stillbirths and perinatal deaths

C. Integrated care delivery throughout pregnancy

D. All of the above.

Answers

Q1	Q2	Q3	Q4	Q5
C	A	D	C	D

Thank You and Good Luck

Community Medicine
438

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