Maternal health

Revised by
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objective:

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

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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.

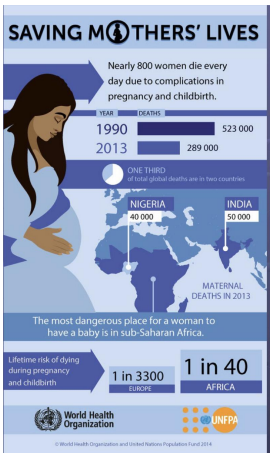
Fast Facts about Maternal Health...WHO Fact sheet sept, 2021

- Every day in 2017, approximately 810 women died from preventable causes related to pregnancy and childbirth.
- Between 2000 and 2017, the maternal mortality ratio (MMR, number of maternal deaths per 100,000 live births) dropped by about 38% worldwide.
- 94% of all maternal deaths occur in low and lower middle-income countries.
- Young adolescents (ages 10-14)[1] face a higher risk of complications and death as a result of pregnancy than other women.
- Skilled care before, during and after childbirth can save the lives of women and new-borns.

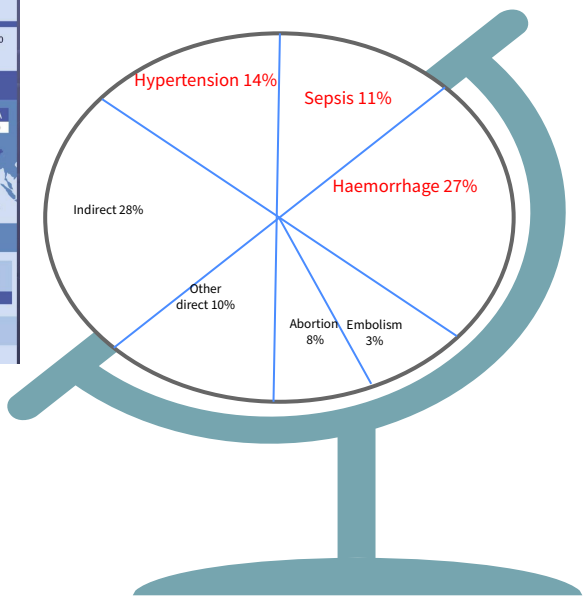
Why women are dying? The causes are same but rates different from country to another

Begin during pregnancy extend postpartum and casing death
Can we prevent it from happening? Yes we can intervene and prevent mother dying باذن الله
The three main killers are 1-haemorrhage. 2-hypertension 3-sepsis
1-From pregnancy
She is not well nourished
Compined with labor issues
And postpartum continues bleeding
2-Happen when there is increase load in body
Undiagnosed preeclampsia in pregnancy
Then clampsia in labour
And then hypertension

3-Poor infection control at the birth weather in hospital or home or mcs center.
Post Delivery sepsis:
Manipulation
Handling
Aseptic technic used for delivery
Can developed during pregnancy,labor,or post labour

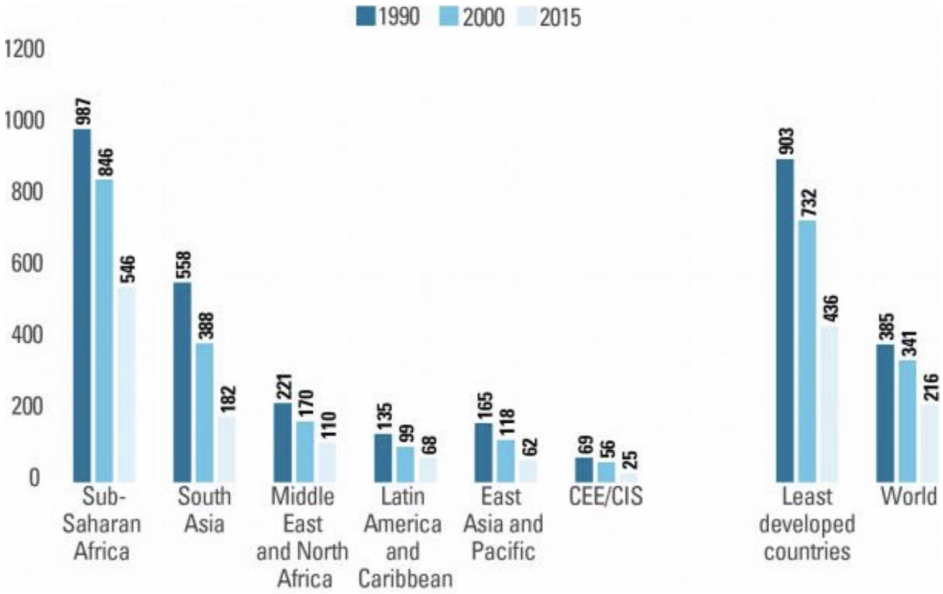


Global Causes of Maternal Mortality



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



Maternal Mortality Indicators : dr:you should know how to calculate for exam and future

Maternal mortality ratio
Maternal mortality rate
Life-time risk of maternal morality
Proportion maternal

Why has the maternal mortality declined?

Global response?
dr:
1-antenatal care
2-breastfeeding promotion
3-Baby friendly hospital initiative
Sustainable Development Goal 3
-3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births.

Antenatal care

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.

What is ANC?

regular check up until the time of delivery and even postpartum

1-Hepatitis b and tetanus toxoid vaccine

2-a lot of dental issue associated with premature labour

3-and to educate women how to prepare herself for deliver: pelvic exercise-how to take care of baby post delivery-how to take care of mother

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

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.	

The minimum visit in case of financial issue or limited n. Of care provider in country
Both have same outcomes

Antenatal care

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). (To find out the expected date of delivery(EDD) (LMP=Last Menstural Period)
- Record symptoms; fever, vomiting, (**abnormal vaginal bleeding, palpitation, easy fatigability, breathlessness, generalized swelling**,") Indicate proteinuria"[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.

For fatigue :Rule out anemia by simple hb no need for cbc
And palpitations :mitral stenosis cause she may got rhd after strept infection in young age and not diagnosed
And now when there is extra burden on heart we can detect it and intervene
Pre-eclampsia(=one stage before HTN) +albuminuria
=indicate hypertension
Smoking history
Husband and his working history
Social support in house
Previous pregnancy Previous surgeries
Cormorbidites running in family

2 Physical exam

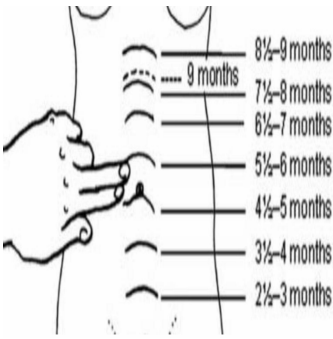
- **General physical;** pallor, pulse (N 60 – 90 mins), respiratory rate (N 18-20 breaths/min), edema (slight edema is normal, if co-existent with any diseases eg: HTN, referral).If we do not monitor weight gain throughout pregnancy she might end up in diabetes postpartum 1st threat in society worldwide
- **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]**.**Rule out abnormality ex:retracted nipple; is the cause of some women failing of feeding babies
-

3 Abdominal exam

Funds Height[4]**:**



- 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:Fundal height is the distance from the pubic bone to the top of the uterus measured in centimeters. After 24 weeks of pregnancy, fundal the height often matches the number of weeks you have been pregnant

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
  - There will be drop in hb in third trimester thus **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 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

How to detect?
Hb 1c in 1st trimester
And monitor and 2nd and 3 rd with gtt to detect if she pre-diabetic

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

No symptoms: no fever or lower (abdominal pain or back pain) but can complian from yellowish irritating urin
*unless she has pencillin sensitivity

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

Tetanus vaccination

Dr:you should know how and when

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.

How many years before next pregnancy? Recommend 3 years
This is Minimal gap and we prescribe OC.

4-As soon baby on his mother breast he will naturally sucks the nipple
And breast start excretion
It show evidence that it helps with placenta expulsion
The recommended months for breastfeeding?
6months then she start weaning baby
with apple and potatoes- and when 2years she complete breastfeeding

TABLE 2

Recommended Milk Intake and Stooling Patterns for Breastfed Infants

Age	Intake (mL per feeding)	Stooling patterns (stools per day)	Stool description
0 to 24 hours	2 to 10	1	Dark green to black, sticky
24 to 48 hours	5 to 15	2	Dark green to black, sticky
48 to 72 hours	15 to 30	6 to 8	Green
72 to 96 hours	30 to 60	6 to 8	Green
> 5 days	60 to 120	6 to 8	Light mustard-seed yellow

Information from references 23 and 24.

Women need To be told about the approximately amount of baby feed

HOW TO ASSESS A BREASTFEED?

Look at the baby's condition

Look at the mother herself

Look at how the mother holds her baby

Observe how the baby respond to the breast

Observe how the mother holds her breast for the baby

Observe the baby's attachment and suckling

Notice how the breastfeed finishes

Observe the condition of the mother's breasts

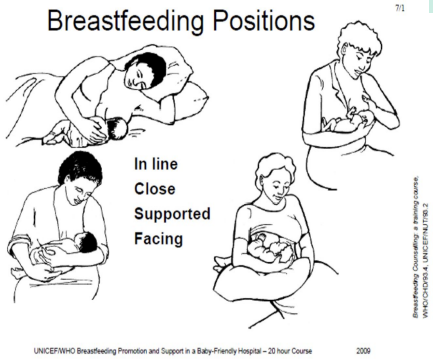
How the mother holds her baby?

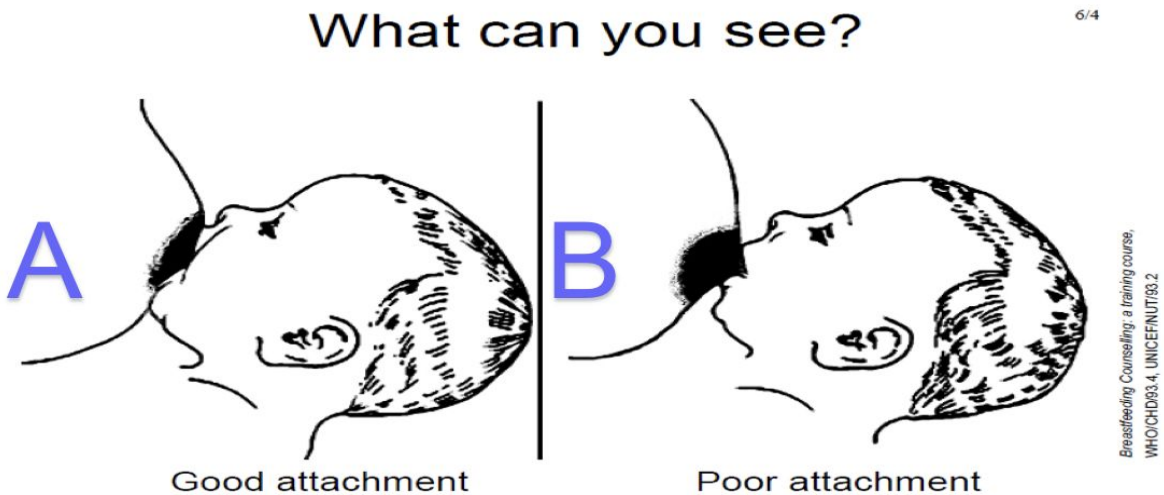
- mother supports the baby's whole body
- calm and relaxed
- the four signs of good positioning of the baby are:
  - the baby should be straight, facing the breast, close to the mother, and supported.

Baby's Position

Remember 4 key points :
1. IN LINE – ear, shoulder, hip in a straight line; neck not twisted/bent forward or backward
2. FACING – the breast with baby's nose to nipple
3. CLOSE to mum's body – baby to breast
4. SUPPORTED – at head, shoulders; newborn – support whole body

Observe the baby's attachment and suckling





How a baby latch

Good attachment

- The baby's **mouth** is wide open.
- The **lower lip** is turned out.
- The **chin** is touching the breast (or nearly so).
- More **areola** is visible above the baby's mouth than below

Poor attachment

- The **mouth** is not wide open.
- The **lower lip** is pointing forward (it may also be turned in).
- The **chin** is away from the breast
- More **areola** is below the baby's mouth (you might see equal amounts of areola above and below the mouth)

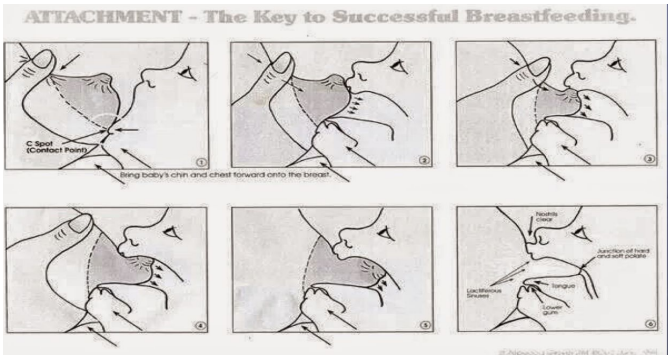
What Are Ways to Ensure an Adequate Latch?

TABLE 3

Signs of Good Positioning and Latch for Successful Breastfeeding

The infant's nose is free from the breast
The infant's chin is pressed against the breast
The infant's cheeks are rounded, not sunken in or dimpled
The infant's mouth is open wide like a yawn
If any areola is visible, more is seen above the infant's top lip, with little to none showing near the chin
The infant's lower lip is flanged outward
The infant's body is in line with the head and facing toward the mother ("tummy to tummy")
Feeding is not painful to the mother after the initial 30 seconds to one minute after latching
The infant has a rhythmic suck and swallow pattern

Information from references 26 and 27.



Signs of effective suckling

- The baby takes slow deep sucks.
- Then he pauses and waits for the ducts to fill up again.
- Then he takes a few quick sucks to start the milk flow.
- As the milk flows, his sucks become deeper and slower again.
- You may see or hear swallowing.
- The babies cheeks are round.

Signs of ineffective suckling

- The baby taking quick shallow sucks all the time.
- The baby may make smacking sounds as he sucks.
- The baby's cheeks may be tense or pulled in as he sucks.
- that mean the baby is not getting much breast milk.

Maternal mortality in 1990-2015

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

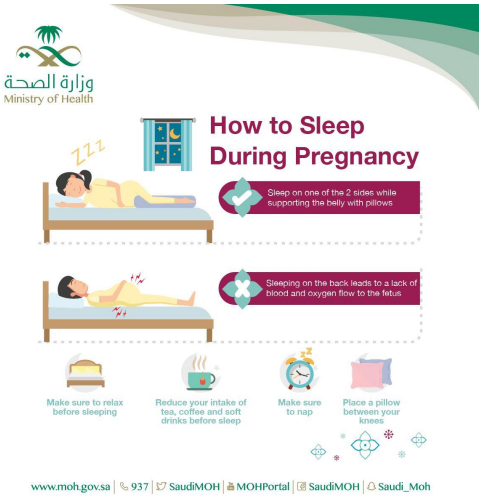
SAUDI ARABIA

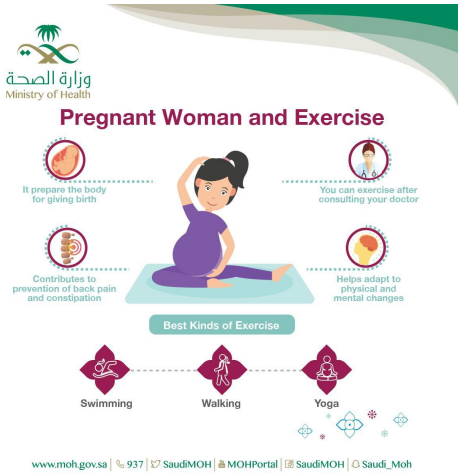
Year	Maternal mortality ratio (MMR)[a]	Maternal deaths	AIDS-related indirect maternal deaths	Live births[b]	Proportion of maternal deaths among deaths of female reproductive age (PM %)
	Per 100 000 live births (lb)	Numbers	Numbers	Thousands	
1990	46 [32-67]	270	0	579	5.6
1995	33 [23-46]	190	0	581	4.2
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

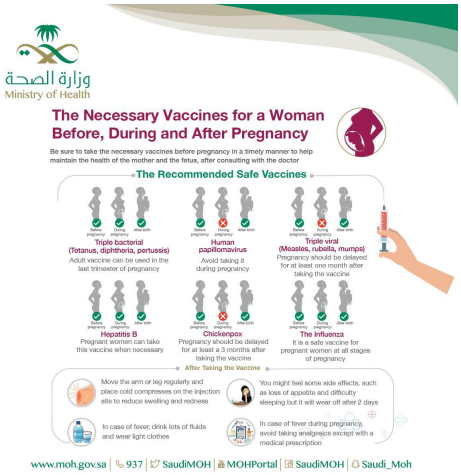
[a] MMR and PM are calculated for women 15-49 years.
[b] Live birth data are from World Population Prospects: the 2015 Revision. New York, Population Division, Department of Economic and Social Affairs, United Nations Secretariat; 2015.

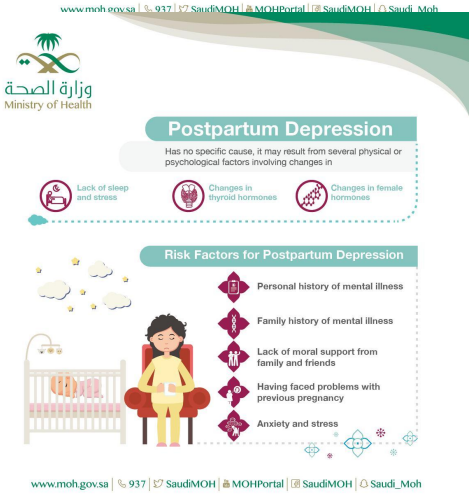
Annual Rate of Reduction	(%)
1990-2015	5.5 [3.7 - 7.5]
1990-2000	6.8 [4.2 - 9.6]
2000-2015	4.7 [2.3 - 7.1]
2005-2015	4.2 [1.4 - 7.1]

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









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

Practice Questions

Q1: all of the following statements are true regarding to maternal health except:

A. Skilled care before, during and after childbirth can save the lives of women and new-borns.	B. the majority of all maternal deaths occur in low and lower middle-income countries.	C. Young adolescents face a lower risk of complications and death as a result of pregnancy than other women.	D. Maternal mortality fell by almost half between 1990 and 2015

Q2: which of the following is not considered as a maternal death

A. unsafe abortion	B. Gun shots	C. Bleeding after childbirth	D. high blood pressure during pregnancy

Q3: which of the following is the definition of maternal mortality rate?

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

Q4: what is the major cause of maternal death worldwide?

A. infection	B. hemorrhage	C. unsafe abortion	D. obstructed labor

Q5: what is the recommended vaccine for pregnant women?

A. syphilis	B. malaria	C. rubbela	D. tetanus

Q6: 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.

Answer key:

1 (C) , 2 (B) , 3 (A) , 4 (B) , 5 (D) , 6 (D)

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