MCH

Maternal & child health care:
-is one of the main components of (PHC) systems as declared at the Alma Ata Conference
-is the health service provided to mothers (women in their childbearing age) & children.

The targets for MCH: are all women in their reproductive age groups, i.e., 15-49 years of age, children, school age population & adolescents.

Maternal & child health (MCH) programs focus on health issues concerning women, children & families

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.

11. Majority of perinatal deaths are associated with maternal complications, poor management techniques during labour & 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 changes

In the developing countries:
-Most women don’t have access to the health care & sexual health education services
-The leading causes of death among women of reproductive age at the level of preconceptions & prenatal care: is pregnancy complications & childbirth (These deaths can be avoided if resources & services were available)
-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)

Reproductive health care: is the constellation of methods, techniques & services that contribute to reproductive health & well-being through preventing & solving reproductive health problem.
It also includes sexual health (the purpose is enhancement of life & personal relations, & not merely counseling & care related to reproduction & sexually transmitted diseases)

Reproductive health care includes:
family planning counseling, information, education, communication & services, prevention of abortion & the management of the consequences of abortion, treatment of reproductive tract infections, sexually transmitted diseases & other reproductive health conditions,
education for prenatal care, safe delivery, & post-natal care, prevention & appropriate treatment of infertility,
Referral for family planning services & further diagnosis & treatment for complications of pregnancy, delivery & abortion, infertility, reproductive tract infections, breast cancer & cancers of the reproductive system, sexually transmitted diseases & HIV/AIDS

Assessing risk in pregnancy

(A risk factor is the name given to any condition, past or present, which is known to be associated with increased maternal & fetal morbidity)

Epidemiological risk factors Social circumstances

- Maternal Age
- Parity
- General risk factors
- Social circumstances

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

Medical conditions

- Diabetes mellitus
- Anemia
- Hypertension
- Urinary tract infection
- Heart disease
- Epilepsy
- Variety of problems related to drug usage & conditions treated

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

High risk pregnant women are advised for more frequent antenatal visits.

-Reducing maternal mortality crucially depends upon ensuring that women have access to quality care before, during & after childbirth
-Maternal deaths causes grave economic & social hardship for her family & community

Maternal mortality: is a critical indicator of population health reflecting the overall state of maternal health as well as quality & accessibility of PHC.
Maternal mortality ratio is measured per 100000 live birth.

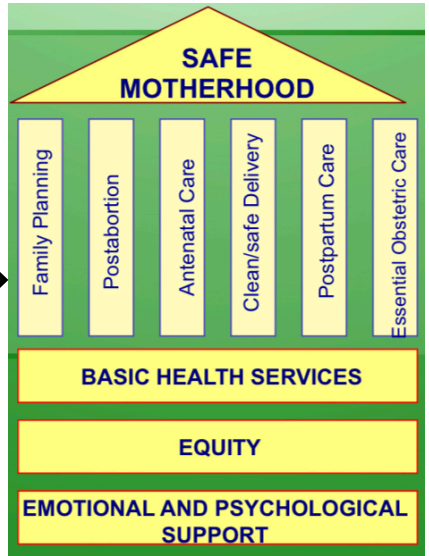
Each year, more than half million die from causes related to pregnancy & childbirth
80% of maternal deaths could be avoided by access to essential maternity & basic health services.

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 (**<2.5kg**)
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

Content of MCH Care Services & Priorities
M.C.H. Care at various **stages** of development: (Services):
1.Maternal
2.Infant & Child

Maternal Health Services:
1.Premarital
2.Preconceptional
3.Conceptional
4.Delivery Care (Centers, Staff & Equipment's)
5.Postnatal & Family Planning Services.

Maternal Services: Essential Health Sector Interventions for Safe Motherhood



Maternal Health Services

1.Premarital (Pre marriage)

Target population:
Couples about to marry.
The newly weds.
Any individual seeking advise.

Main functions
•Family health education
•Sexuality & puberty
•Marriage & parenthood
•Avoiding hazards (smoking, Alcohol, drugs).
•Nutrition & weight monitoring.
•Immunization
•Medical history, past medical history
•Sexually Transmitted diseases
•Past Menstrual history
•Physical examination
•Genetic Counseling
•Fertility investigation
•Hormonal for females
•Semen analyses for males

Premarital screening & genetic counselling (PMSGC)
It's popular in the Middle East, aims to identify β-thalassaemia carriers among couples planning to marry.
Genetic counselling is provided to at-risk couples to ensure they understand the reproductive risks & available options

PMSGC programmes aim to reduce β-thalassaemia births through:
-prevention of at-risk marriages by discouragement during counselling.
-where legal, termination of affected foetuses through prenatal diagnosis (PND) & therapeutic abortion.

Premarital exams are much more common among those with higher education than those with no education

2.Preconceptional

woman's health before she becomes pregnant

Preconception services:
•Past & recent Medical history.
•Social history.
•Controlling risk factors.
•Psychological & social counseling.

3.Conceptional

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

Antenatal care (ANC)
-the services offered to mother & unborn child during Pregnancy
-is an essential part of basic primary healthcare during pregnancy, & offers a mosaic of services that can prevent, detect & treat risk factors early on in the pregnancy.
-is a systemic supervision to monitor the progress of foetal growth & to ascertain the well being of the mother & the foetus

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

4.Delivery Care

Centers, Staff & Equipments

-When, Where & Who
• Clean hands
• Clean delivery service
• Clean cutting of the cord
-How: Normal or C

5.Postnatal & Family Planning Services.

-Observe physical status
-Advise, & support on breast-feeding
-Provide emotional & psychological support.
-Health education on weaning & food preparation.
-Advise on Family Planning

Postnatal care helps prevent complications after childbirth.

Nutrition & weight monitoring in premarital
-BMI: preferred indicator of nutritional status.
-Eating habits: fasting, pica (Pica is a compulsive eating disorder in which people eat nonfood items), eating disorders, megavitamin
-Preconceptional intake of folic acid
-Prematurity, spontaneous abortions, low birth weight, & fetal deaths are complications of severe maternal anaemia (Anemia during pregnancy is commonly associated with poor pregnancy outcome & can result in complications that threaten the life of the mother & fetus)

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 be born with life threatening conditions. These can include:
-brain hemorrhage
-pulmonary hemorrhage
-hypoglycemia
-neonatal sepsis (a bacterial blood infection)
-pneumonia (infection & inflammation of the lungs)
-patent ductus arteriosus (an unclosed hole in the main blood vessel of the heart)
-Anemia (lack of red blood cells)
-neonatal respiratory distress syndrome (a breathing disorder)

Immunization
-Rubella, commonly known as 'German Measles' is a common childhood viral disease that may affect adults as well.
-primary rubella infection in pregnancy, especially in the first trimester, 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.
-Pregnant women & their unborn babies are especially vulnerable. Because MMR vaccine is an attenuated (weakened) live virus vaccine, pregnant women should not get MMR vaccine.
-Women who are planning to become pregnant should check with their healthcare professional to make sure they are vaccinated before they get pregnant.
-Adult women of childbearing age should avoid getting pregnant for at least four weeks after receiving MMR vaccine.

ANC

Why antenatal care is important?
-to ensure a normal pregnancy with delivery of a healthy baby from a healthy mother
-Prevent development of complications
-Decrease maternal & infant mortality & morbidity by affording increased chances of the timely identification of high-risk pregnancies
-Remove the stress & worries of the mother regarding the delivery process
-Teach the mother about child care, nutrition, sanitation & 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.

'focused' ANC (FANC) model: aims at delivering 'reduced but goal-orientated' clinic visits, at which essential interventions should be provided to pregnant women at specified intervals.
-With the FANC model, healthy women with no underlying pregnancy complications should be scheduled a minimum of four ANC visits, & more than four in the case of danger signs or pregnancy-related illnesses
-it is crucial to initiate the care during the first trimester of pregnancy (up to 12 weeks of gestation), & schedule the second visit at 24 to 28 weeks of gestation & the third & fourth visits at 32 weeks & between 36 & 38 weeks of gestation, respectively.

Antenatal care can play a role in identifying danger signs or predicting complications around delivery by screening for risk factors & arranging for appropriate delivey care when indicated.

Antenatal checks & tests:
•Weight & height checks: to calculate BMI (body mass index)
•Urine tests: urine is checked for several things, including protein or albumin
•Blood pressure test
•Blood tests
•Ultrasound scan

What can an **ultrasound scan** be used for?
-To check the baby size.
-To detect abnormalities.
-To show the position of the baby & the placenta. (For example, when the placenta is low down in late pregnancy, a caesarean section may be advised.)
-To check that the baby is growing normally

Access to ANC services consists of several elements, including distance and/or time to a facility, the physical availability of services, cultural & social factors that may impede access, economic & other costs associated with use of services, & the quality of the services offered

Pregnancy risk factors that should be considered in ANC 1.Age under 18 or above 35 2.Height (**less 150 cm**) & Wt. under or over wt. 3.Residency 4.Education 5.Income 6.Parity (Primigravida, More than 6 pregnancies) 7.Past Medical history: Diabetes, cardiac problem, renal disease etc 8.Past obstetric history: Previous caesarean section, vacuum, or forceps delivery -Previous perinatal death, stillbirth -Previous post partum haemorrhage (PPH) -Previous ante partum haemorrhage (APH) 9.General condition of the woman pre-conceptional (Hb level, nutritional, blood pressure & general condition) 10.Social history : Smoking, Alcohol or any drug therapy, workload, status	**Teenage pregnancy** (adolescent) -Children born to very young mothers are at increased risk of sickness & death. -Teenage mothers are more likely to experience adverse pregnancy outcomes & are more constrained in their ability to pursue educational opportunities than young women who delay childbearing. -Teenage childbearing is more common among women in the Mafraq governorate & Syrian women -The proportion of women who have started childbearing decreases with increasing level of education	Antenatal classes in Europe (Topics covered by antenatal classes are): -health in pregnancy, including a healthy diet -exercises to keep fit & active during pregnancy -what happens during labour & birth -coping with labour & information about different types of pain relief relaxation techniques during labour & birth -information about different kinds of birth & interventions -caring for the baby, including feeding -health after birth -"refresher classes" for those who've already had a baby

Maternal Morbidity

Maternal Morbidity -Any departure, subjective or objective, from a state of physiological or psychological maternal well-being during pregnancy, childbirth & the postpartum period up to 42 days of delivery related to changes taking place in these periods. -any health condition attributed to and/or aggravated by pregnancy & childbirth that has a negative impact on the woman's wellbeing	Causes of Morbidities (Most frequently reported maternal morbidities from the most to the least common) 1.Hypertensive disorders 2.Stillbirth 3.Abortion 4.Hemorrhage 5.Preterm delivery 6.Anemia in pregnancy 7.Diabetes in pregnancy 8.Ectopic pregnancy 9.Perineal tears 10.Uterine rupture 11.Depression 12.0bstructed labour 13.Postpartum sepsis	Causes of maternal morbidities in Jordan •Urinary tract infections •Vaginal infections •Anemia •Early bleeding •Hypertension •Gestational diabetes •Preeclampsia •Late bleeding •Multiple pregnancy •Kidney diseases •Thyroid disorders •Disseminated intravascular coagulopathy •Heart Disease

Pregnancy complications

Problem	Symptoms
Anemia Hb.< 10	▪ Feel tired or weak ▪Look pale ▪Feel faint ▪Shortness of breath
Gestational diabetes Too high blood sugar levels during pregnancy	▪Usually, there are no symptoms. Sometimes, extreme thirst, hunger, or fatigue ▪ Screening test shows high blood sugar levels
High blood pressure (pregnancy related) High blood pressure that starts after 20 weeks of pregnancy and goes away after birth	▪ High blood pressure without other signs and symptoms of preeclampsia
Miscarriage **Pregnancy loss from natural causes before 20 weeks. As many as 20 percent of pregnancies end in miscarriage. Often, miscarriage occurs before a woman even knows she is pregnant**	**Signs of a miscarriage can include:** **Vaginal spotting or bleeding*** **Cramping or abdominal pain** **Fluid or tissue passing from the vagina** ***** **Spotting early in pregnancy doesn't mean miscarriage is certain. Still, contact your doctor right away if you have any bleeding.**
Preeclampsia A condition starting after 20 weeks of pregnancy that causes high blood pressure and problems with the kidneys and other organs. Also called toxemia.	High blood pressure Swelling of hands and face Too much protein in urine Stomach pain Blurred vision Dizziness Headaches
Preterm labour – Going into labour before 37 weeks of pregnancy	Increased vaginal discharge Pelvic pressure and cramping Back pain radiating to the abdomen Contractions

Hypertensive disorders
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 characterised by the development of hypertension & 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), & foetal/neonatal mortality & morbidity
Clinically, PE presents as new-onset hypertension in a previously normotensive woman, with systolic & diastolic blood pressure readings of **≥140 and ≥90 mmHg**, respectively, on 2 separate occasions that are at least 6 hours apart, together with proteinuria
-PE can be considered as a disorder of endothelial function with vasospasm. (Fetal ischemia)
-Altered maternal immune response to fetal/placental tissue may contribute to the development of preeclampsia.
-PE can evolve into eclampsia which is a severe complication that is characterised by epileptic seizures (generalised convulsions)
-Preeclampsia occurs in approximately 5% of all pregnancies, 10% of first pregnancies, and 20-25% of women with a history of chronic hypertension.

Risk factors for preeclampsia
-Maternal risk factors:
•First pregnancy
•New partner/paternity
•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 risk factors:
•Chronic hypertension
•Secondary causes of chronic hypertension such as hypercortisolism, hyperaldosteronism, pheochromocytoma, or renal artery stenosis
•Preexisting diabetes (type 1 or type 2), especially with microvascular disease
•Renal disease
•Systemic lupus erythematosus
•Obesity

Anemia of pregnancy
-Anemia is defined during pregnancy as a hemoglobin (Hb) level below **11 gr/ dL**
-During pregnancy, the Hb level is lower than normal, & it varies according to gestational age. Most women with Hb levels below this limit have normal pregnancies.
-20 to 50% of women, & even more in some areas, are considered as anemic.

Pathophysiologic causes of anemia
1.Hemodilution: occurs physiologically in pregnancy. This may result in lower haemoglobin concentrations than in the non-pregnant state.
2.Iron deficiency
3.Folate deficiency: due to Increased turnover or requirements of folate can occur during pregnancy & during lactation; giving rise to Megaloblastic anemia.
+ Malaria can lead to anemia

Anemia is very prevalent among women in developing countries

Anemia makes women more susceptible to infection & less able to withstand infection or the effects of hemorrhage.
It may be associated with low birth weight.

Risk factors for anemia
•Twin or multiple pregnancy
•Poor nutrition, especially multiple vitamin deficiencies
•Smoking, which reduces absorption of important nutrients
•Excess alcohol consumption, leading to poor nutrition
•Any disorder that reduces absorption of nutrients
•Use of anticonvulsant medications

Iron Supplementation
Pregnant women should take iron tablets for at least 90 days during pregnancy to prevent anemia & other complications.

Urinary Tract Infection UTIs (why?)
The short urethra & its intimate relationship with the vagina considerably increase the risk of a woman developing UTIs.

UTIs aetiology <u>in pregnancy</u> (<u>Why?</u>)
1.During pregnancy, urinary tract changes predispose women to infection. Ureteral dilation is seen due to compression of the ureters from the gravid uterus.
2.Hormonal effects of progesterone also may cause smooth muscle relaxation leading to dilation & urinary stasis, & vesicoureteral reflux (VUR) increases.
3.The organisms which cause UTI in pregnancy are the same uropathogens seen in non-pregnant individuals. As in non-pregnant patients, these uropathogens have proteins found on the cell-surface which enhance bacterial adhesion leading to increased virulence.
4.Urinary catheterization, frequently performed during labor, may introduce bacteria leading to UTI. In the postpartum period, changes in bladder sensitivity & bladder overdistention may predispose to UTI.
5.Pregnancy is a state of relative immunocompromise. This immunocompromise may be another cause for the increased frequency of UTIs seen in pregnancy.

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	<u>Risk factors</u> for gestational diabetes •Age •Family or personal history •Excess weight. •Non-white race.	Most women who have gestational diabetes deliver healthy babies. However, gestational diabetes that's not carefully managed can lead to consequences & complications	<u>Complications</u> that may affect the mother •Induced labour or a caesarean section •Polyhydramnios (the excessive accumulation of amniotic fluid) •Premature birth •Pre-eclampsia •Stillbirth •Type 2 diabetes •Uncontrolled blood sugar levels & an increased likelihood of needing a C-section to deliver.

Sexually transmitted diseases STDs These are diseases that are transmitted through sexual contact. Can cause pain, infertility & death if not treated	<u>Examples</u> of STDs: 1)Gonorrhea 2)syphilis 3)Chlamydia. 4)Genital herpes 5)Trichomonas vaginatis

Maternal Mortality

Maternal mortality: 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	Maternal mortality rate is sometimes referred to as maternal mortality ratio as the rate is not calculated using an accurate count of all pregnancies that can result in a maternal death, with stillbirths not included & infants in multiple birth sets over represented in live birth figures.	**Maternal Mortality Ratio**: the number of maternal deaths per 100,000 live births, a measure of the risk of death once a woman has become pregnant. **Maternal Mortality Rate**: the number of maternal deaths (direct & indirect) in a given period per 100,000 women of reproductive age during the same time period.
-Maternal mortality is much higher in developing countries compared to developed nations owing to lack of adequate medical care; high prevalence of infectious diseases, higher total fertility rate & due to health care system difference. -Maternal mortality is the leading cause of death among women of reproductive age in most of the developing world. -Maternal mortality is higher in women living in rural areas & among poorer communities.	-The risk of maternal mortality is also related to the mother's previous health & nutritional status, issues of gender discrimination, & access to health services. -Adolescent pregnancy carries a higher risk due to the danger of incomplete development of the pelvis, & there is a higher prevalence of hypertensive disorders among young mothers. -Frequent pregnancies also carry a higher risk of maternal & infant death.	Maternal Mortality in Jordan has declined -**Direct Causes** of maternal mortality in Jordan •haemorrhage •Thromboembolism •Septicemia -**Indirect Causes** of maternal mortality in Jordan •Cardiovascular diseases •Central nervous system disease & cerebral vascular disease •Communicable diseases •Chronic anemia •Kidney failure
Maternal mortality constitutes a small part of the larger maternal morbidity & suffering, because for every maternal death there are a lot of women suffering from acute & chronic illnesses	Causes of maternal mortality (from the highest to lowest) 1.Severe Bleeding 2.Indirect causes 3.Infections 4.Unsafe abortion 5.Eclampsia 6.obstructed labor & other direct causes (Examples on indirect causes: malaria, diabetes, hepatitis, & anemia)	Skilled care before, during & after childbirth can save the lives of women & newborn babies.

Millennium (Sustainable) Development Goals (MDG): poverty, hunger, disease, illiteracy, environmental degradation, & discrimination against women.	MDG 1: eradicate extreme poverty & hunger MDG 2: Achieve universal primary education MDG 3: promote gender equality & empower women MDG 4: reduce child mortality MDG 5: improve maternal health MDG 6: combat HIV/AIDS, malaria & other diseases MDG 7: ensure environmental sustainability MDG 8: develop a global partnership for development	**MDG 5** includes two targets: Target 5a: Reduce by three quarters the maternal mortality ratio -Maternal mortality ratio -Proportion of births attended by skilled health personnel Target 5b: Achieve a universal access to reproductive health -Contraceptive prevalence rate -Adolescent birth rate -Antenatal care coverage (at least one visit & at least four visits) -Unmet need for family planning

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