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From the Director's desk

Hello Friends ! it took a while to reach you after our first letter, we will work hard to be regular in future and continue communicating with you on issues relevant to patient care and implementation of National Programs. Although there is continous decline in MMR from 388 maternal deaths per lac live births in 2004-06 to 244 maternal deaths per lac live births in 2011-13 but we are still among the few States reporting high maternal deaths. Within the continuum of reproductive health care, antenatal care (ANC) provides a platform for important health-care functions, including health promotion, screening and diagnosis, and disease prevention. It has been established that by implementing timely and appropriate evidence-based practices, ANC can save lives. Crucially, ANC also provides the opportunity to communicate with and support women, families and communities at a critical time in the course of a woman's life. Women's positive experiences during ANC and childbirth can create the foundations for healthy motherhood.

Looking into the dismal coverage of 4 ANC visits – ranging from 12% in Jalore to overall 44% in our State, this time we are sharing summary of WHO guidelines on Ante Natal Care.

For feedback- sihfwraj@ymail.com

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SIHFW's Activities.....

Capacity Building through SIHFW in November 2017 – January 2018

	Training Course	No. of Participants
1020 Specialists/Medical Officers trained	Foundation Course	158
	NUHM	152
	Routine Immunization	97
	NSSK	95
	IMEP	76
	Leprosy	64
	RKSK	42
	Malaria, Chikungunya and Dengue under NVBDCP	42
	Safe Abortion	40
	F-IMNCI	37
	BEmOC (Refresher)	33
	BEmOC	32
	Onsite BEmOC	31
	BEmOC (ToT)	30
	Injectables (ToT)	20
	F-IMNCI (ToT)	15
	NPPCD	15
	Laprocopic Sterilization	11
	Onsite Training (MTP)	8
	CAC	7
	FBNC Observership	5
2916 Paramedics trained	Routine Immunization	951
	NSSK	704
	Nurse Mentoring	463
	SBA	239
	SBA (Refresher)	194
	SNCU Online	90
	Nurse Mentoring (ToT)	82
	F-IMNCI	63
	RKSK	49
	RKSK – Peer Educators (ToT)	46
	Onsite Mentoring (ToT)	24

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	FBNC Observership	11
2088 NHM staff and Others trained	Equipment and Inventory Management	976
	DAP Rakshaks	210
	PFMS and Bhamashah DBT engine	107
	Orientation of staff (Drug Control)	100
	Orientation on HBNC Vouchers	92
	Orientation of PHM (NUHM)	89
	FP-LMIS Software	86
	Orientation of DM/DEO under IDSP	70
	Foundation of Accountants (NHM)	65
	Orientation of Pharmacists (NHM)	57
	Partners under PPP mode of NUHM	53
	ASHA (ToT)	53
	Swasthya Magdarshak and Doctors under BSBY	50
	RKSK – Ayush MOs	31
	Healthcare Professionals and law enforcement officials under NTCP	29
	RBSK – Mobile Dental Van Workers	20
545 attended Workshops and Meetings	Review Meeting of NTCP	105
	Workshop on dengue control under NVBDCP	90
	State Level Workshop on Immunization	78
	Review meeting of activities under NAM	75
	CME - Diabetes and Women	45
	Review meeting on IMI	45
	Review Meeting of IDSP	38
	Workshop on Cold Chain	34
	Review Meeting of SIHFW-UNICEF partnership	25
	Orientation on Assessment of Yashoda Intervention	10

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Participants Feedback Desk

Medical Officers of Foundation Course appreciated the sessions which they found interactive and informative. Special mention was given to the stress management and meditation session.

In the words of Dr. Naresh Malav "…training was helpful to resolve our confusions and we learnt about all aspects of working at phc – admin, finance, service rules and programs…".

Monitoring of trainings/ District visit - 25 visits	Training of Peer Educators under RKSK- Bundi (2); Udaipur (1)
	Training on Comprehensive Abortion Care - Jaipur (2)
	Training on on-site CAC - Jodhpur (1)
	Training of Nurse Mentoring Burst 3- Dausa (1); Karauli (1); Dholpur (1); Kota (1); Pali (1); Bikaner (1); Rajsamand (1); Ajmer (1); Sirohi (1)
	Training on BEmOC for MOs/LMOs - Jaipur (1)
	Training on NSSK - Jaipur (2); Chittorgarh (1)
	Training on Community Action for Health - Bikaner (1)
	Training of Health Workers under UHC - Ajmer (1)
	Training on SBA - Chittorgarh (1); Jodhpur (1); Churu (1); Dholpur (1); Rajsamand (1)
	District Visits - Sawai Madhopur (1); Barmer (1); Jalore (1); Karauli (1); Dholpur (1)

SIHFW's participation

•	Dr. Vishal Singh, Faculty, attended the Sector expert consultation on health systems and Maternal and child health issues - IIHMR & Tata Trust, Jaipur (Nov. 1).
•	Dr. Mamta Chauhan, Faculty, was a part of the Community mobilization for Daughters are Precious Campaign (DAP Rakshak program) and was the main speaker at Jayoti Vidhyapeeth University, Jaipur (Nov. 17).
•	Ms. Archana Saxena, Research Officer, was a part of the Community mobilization for Daughters are Precious Campaign (DAP Rakshak program) and was the main speaker at Jayoti Vidhyapeeth University, Jaipur (Nov. 17).
•	Dr. Vishal Singh, Faculty, attended the Core group meeting of Chirayu Program, Jaipur (Nov. 20).
•	Ms. Archana Saxena, Research Officer, attended Training on Mentoring Skills at HCM-RIPA, Jaipur (Nov. 22-24).
•	Dr. Bhumika Talwar, Research Officer, took session on Quality Assurance and carried out the External Assessment at District Hospital, Hanumangarh (Nov. 22-24).
•	Dr. Amita Kashyap, Director, attended Workshop on Maternal Death Audit & Response organized by PGI at Chandigarh (Nov. 23-24).
•	Dr. Mamta Chauhan, Faculty and Ms. Nishanka Chauhan, Senior Research Officer, attended the Sector Expert Consultation on NCD, Jaipur (Nov. 24).
•	Mr. Aseem Mohd. Malawat, Consultant (RCH) – Management, took session on Quality Assurance and carried out the External Assessment at District Hospital, Pali (Nov. 27-30).
•	Dr. Mamta Chauhan, Faculty, took session on Quality Assurance and carried out the External Assessment at District Hospital, Kota (Nov. 28-30).
•	Dr. Vishal Singh, Faculty, and Dr. Mamta Chauhan, Faculty were invited to take sessions in the In-service training on FIC (ICD -10 & ICF) for paramedics and non-medical persons at CBHI, Jaipur (Dec. 11; Jan. 15).
•	Dr. Vishal Singh, Faculty, monitored DH, SDH (Gangapur City), CHC (Chauth ka Barwada; Malarana Dungar), PHC (Hamargarh) under the Chirayu program in Sawai Madhopur (Dec. 13-15).
•	Mr. Aseem Mohd. Malawat, Consultant (RCH) – Management, carried out the External Assessment at DH Karauli and SDH Hindaun City (Dec. 18).
•	Mr. Ejaz Khan, Research Officer and Ms. Lovely Acharya, TA (Finance), attended HACT (Harmonised Approach to Cash Transfer) and Financial Management Training Programme, organized by UNICEF in Jaipur (Dec. 21).
•	Dr. Mamta Chauhan, Faculty took sessions in the Training of Service Providers on Quality Assurance at Sikar (Jan. 17-18).

•	Dr. Mamta Chauhan, Faculty, Dr. Ajapa A. Chomal, SRO and Ms. Archana Saxena, RO were part of the Community mobilization for Daughters are Precious Campaign (DAP Rakshak program) and were the key speakers at Shaheed Bhagat Singh Girls PG College, Jaipur (Jan. 24).
•	Dr. Amita Kashyap, Director and Dr. Vishal Singh, Faculty represented Rajasthan in National Consultation on Community Action for Health held at the India International Center, New Delhi (Jan. 24).
•	Dr. Amita Kashyap, Director attended the CTI Meeting at NIHFW, New Delhi (Jan. 29).
•	Mr. Ejaz Khan, RO, attended the Workshop on CPAP at AIIMS, Jodhpur (Jan. 29-30).
•	Ms. Nishanka Chauhan, SRO and Mr. Hemant Yadav, RO participated in the Training on Demographic Data Analysis for Health Personnel at NIHFW, New Delhi (Jan. 29-Feb. 2).

Up-coming Activities at SIHFW

February - March, 2018	
1.	Foundation Course for newly recruited MOs (Feb. 12-24; March 5-17; 15-27)
2.	Training on Routine Immunization for MOs (Feb. 6-8; 20-22; March 6-8; 20-22)
3.	Training on Leprosy for MOs (Feb. 2; 5; 9; 12; 14; 15; 16; 19; 23; 26; 27; 28)
4.	ToT on Nurse Mentoring Burst 4 (Feb 5-6; 14-15; 19-20)
5.	Training of Medical Officers on Malaria, Chikungunya and Dengue under NVBDCP (Feb. 5-7; 14-16; 19-21; 26-28; March 12-14; 20-22)
6.	Training of Obstetricians and Paediatricians on NPPCD (Feb. 12)
7.	ToT on Injectables (Feb. 8-9; 22-23; 26-27; 27-28; March 6-7)
8.	Training of Medical Officers under RKSK (March 12-15)
9.	State level ToT on NUHM (Feb. 26-27)
10.	Experience sharing Workshop of Dakshta Mentors (Feb. 22)

Health news

Global response to malaria at crossroads

According to the World Malaria Report 2017, after unprecedented global success in malaria control, progress has stalled. There were an estimated 5 million more malaria cases in 2016 than in 2015.

The WHO Global Technical Strategy for Malaria calls for reductions of at least 40% in malaria case incidence and mortality rates by the year 2020. A major problem is insufficient funding at both domestic and international levels, resulting in major gaps in coverage of insecticide-treated nets, medicines, and other life-saving tools.

http://www.who.int/mediacentre/news/releases/

New global commitment to end tuberculosis

The first WHO Global Ministerial Conference on Ending Tuberculosis in the Sustainable Development Era: A Multisectoral Response, was held at Moscow in November. The two-day conference resulted in collective commitment to ramp up action on four fronts:

- Move rapidly to achieve universal health coverage by strengthening health systems and improving access to people-centered TB prevention and care.
- Mobilize sufficient and sustainable financing through increased domestic and international investments to close gaps in implementation and research.
- Advance research and development of new tools to diagnose, treat, and prevent TB.
- Build accountability through a framework to track and review progress on ending TB, including multisectoral approaches.

http://www.who.int/mediacentre/news/releases

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Health Ministry and ICMR launch India Hypertension Management Initiative (IHMI)

The India Hypertension Management Initiative (IHMI) launched in the month of November 2017, is a collaborative project of ICMR, MoHFW, State Governments, WHO and Resolve to Save Lives initiative of Vital Strategies. The primary goal of this project is to reduce morbidity and mortality due to CVDs, the leading cause of death in India, by improving the control of high blood pressure, which is a leading risk factor for CVDs among adults in India.

The IHMI is focused on five essential components of scalable treatment of hypertension. It will support the adoption of standardized simplified treatment plans for managing high blood pressure, ensure the regular and uninterrupted supply of quality-assured medications, task sharing so health workers who are accessible to patients can distribute medications already prescribed by the medical officer, and patient-centered services that reduce the barriers to treatment adherence.

IHMI will be progressively rolled out in 25 districts in the first two years across districts selected by the Health Ministry for expansion of active screening and intensification of treatment activities for hypertension.

http://pib.gov.in/newsite/erelease

Health Ministry and Rotary India sign MoU for concerted efforts towards achieving immunization target

A Memorandum of Understanding (MoU) was signed between MoHFW and Rotary India. The collaboration will support the efforts of the states and the districts for advocacy and community mobilization for Polio Eradication Programme, Routine Immunization including Mission Indradhanush, Intensified Mission Indradhanush and Measles-Rubella.

http://pib.gov.in/newsite/erelease

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Global Hunger Index

As per 2017 Global Hunger Index (GHI) Report, published by the International Food Policy Research Institute (IFPRI), India ranks 100 out of 119 countries.

The Global Hunger Index is a tool designed to comprehensively measure and track hunger at the global, regional, and national levels. The International Food Policy Research Institute (IFPRI) calculates GHI scores each year to assess progress and setbacks in combating hunger are based on four indicators – Undernourishment; Child wasting; Child stunting; and Child mortality.

http://pib.gov.in/newsite/erelease

National Strategic Plan on HIV/AIDS Released on World AIDS Day

World AIDS Day was observed on 1st December, 2017 with the theme "25 Years of National AIDS Control Programme". The National Strategic Plan on HIV/AIDS and Sexually Transmitted Infections (STI), 2017-24 and "Mission Sampark" was launched to bring back People Living with HIV who have left treatment after starting Anti Retro Viral Treatment (ART).

The aim is to achieve elimination of mother-to-child transmission of HIV and Syphilis as well as elimination of HIV/AIDS related stigma and discrimination by 2020. On prevention of new infections, National AIDS Control Programme (NACP) aims to achieve 80% reduction in new HIV infections by 2024 from baseline value of 2010. Further, by 2024, the target is to ensure that 95% of those who are HIV positive in the country know their status, 95% of those who know their status are on treatment and 95% of those who are on treatment experience effective viral load suppression.

http://pib.gov.in/newsite/erelease

National Girl Child Day celebrated as awareness day for DAP

In Rajasthan, the National Girl Child Day (NGCD) was celebrated on 24th January as a national observance day for the girl child with mega awareness campaign of

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Daughters are Precious (DAP) and collective singing of national anthem in more than 6,000 institutions in which more than 11 lakh youth participated.

Health Days of February - March

February 4	World Cancer Day
February 12	Sexual & Reproductive Health Awareness Day
March 6	Glucoma Day
March 11	No Smoking Day
March 12	World Kidney Day
March 15	World Disabled Day
March 16	Measles Immunization Day
March 24	World TB Day

WHO recommendations on antenatal care for a positive pregnancy experience

The World Health Organization (WHO) envisions a world where every pregnant woman and newborn receives quality care throughout the pregnancy, childbirth and the postnatal period.

A positive pregnancy experience is defined as:

- maintaining physical and socio-cultural normality
- maintaining a healthy pregnancy for mother and baby (including preventing and treating risks, illness and death)
- having an effective transition to positive labour and birth, and
- achieving positive motherhood (including maternal self-esteem, competence and autonomy)

Antenatal care (ANC) can be defined as the care provided by skilled health-care professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy.

Components of ANC: Risk identification; prevention and management of pregnancy-related or concurrent diseases; and health education and health promotion.

ANC reduces maternal and perinatal morbidity and mortality both directly, through detection and treatment of pregnancy-related complications, and indirectly, through the identification of women and girls at increased risk of developing complications during labour and delivery, thus ensuring referral to an appropriate level of care. In addition, indirect causes of maternal morbidity and mortality, such as HIV and malaria infections, contribute to approximately 25% of maternal deaths and near-misses. ANC also provides an important opportunity to prevent and manage concurrent diseases through integrated service delivery

List of WHO recommendations on antenatal care (ANC)

A. Nutritional interventions

A.1: Dietary and physical interventions

- A **healthy diet** contains adequate energy, protein, vitamins and minerals, obtained through the consumption of a variety of foods, including green and orange vegetables, meat, fish, beans, nuts, whole grains and fruit is

recommended for pregnant women to stay healthy and to prevent excessive weight gain during pregnancy.

- A **healthy lifestyle** includes aerobic physical activity (walking/yoga) and strength-conditioning exercise (yoga/ pilates) aimed at maintaining a good level of fitness throughout pregnancy. Women should choose activities with minimal risk of loss of balance and fetal trauma.
- Most normal **gestational weight gain** occurs after 20 weeks of gestation and the definition of "normal" is subject to regional variations, but should take into consideration pre-pregnant body mass index (BMI). According to the Institute of Medicine classification, women who are underweight at the start of pregnancy (i.e. BMI < 18.5 kg/m^2) should aim to gain 12.5–18 kg, women who are normal weight at the start of pregnancy (i.e. BMI 18.5–24.9 kg/m^2) should aim to gain 11.5–16 kg, overweight women (i.e. BMI 25–29.9 kg/m^2) should aim to gain 7–11.5 kg, and obese women (i.e. BMI > 30 kg/m^2) should aim to gain 5–9 kg. *In undernourished populations, balanced energy and protein dietary supplementation is recommended for pregnant women to reduce the risk of stillbirths and small for-gestational-age neonates.*

A.2: Iron and folic acid supplements

- Daily oral iron and folic acid supplementation with 30 mg to 60 mg of elemental iron and 400 µg (0.4 mg) folic acid is recommended for pregnant women to prevent maternal anaemia, puerperal sepsis, low birth weight, and preterm birth.
- In settings where anaemia in pregnant women is a severe public health problem like ours (i.e. where at least 40% of pregnant women have a blood haemoglobin [Hb] concentration < 11.0 g/dl), a daily dose of 60 mg of elemental iron is preferred over a lower dose.
- In the first and third trimesters, the Hb threshold for diagnosing anaemia is 11.0 g/dl; in the second trimester, the threshold is 10.5 g/dl .
- If a woman is diagnosed with anaemia during pregnancy, her daily elemental iron should be increased to 120 mg until her Hb concentration rises to normal (Hb 11.0 g/dl or higher). Thereafter, she can resume the standard daily antenatal iron dose to prevent recurrence of anaemia.
- Effective communication with pregnant women about diet and healthy eating – including providing information about food sources of vitamins and minerals, and dietary diversity – is an integral part of preventing anaemia and providing quality ANC.
- In areas with endemic infections that may cause anaemia through blood loss, increased red cell destruction or decreased red cell production, such as malaria and hookworm, measures to prevent, diagnose and treat these infections should be implemented.

A.3: Calcium supplements

- In populations with low dietary calcium intake, daily calcium supplementation (1.5–2.0 g oral elemental calcium) is recommended for pregnant women to reduce the risk of pre-eclampsia.
- Dietary counseling of pregnant women should promote adequate calcium intake through locally available, calcium-rich foods like milk, dairy products, jaggery and green leafy vegetables.
- Dividing the dose of calcium may improve acceptability. The suggested scheme for calcium supplementation is 1.5–2.0 g daily, with the total dose divided into three doses, preferably taken at mealtimes.
- Negative interactions between iron and calcium supplements may occur. Therefore, the two nutrients should preferably be administered several hours apart rather than concomitantly.

A.4: Vitamin A supplements

- Vitamin A supplementation is only recommended for pregnant women in areas where vitamin A deficiency is a severe public health problem, to prevent night blindness. *Vitamin A is not recommended to improve maternal and perinatal outcomes.*
- Other essential nutrients like Zinc, Vitamin B6, C, D and E should be taken from balanced diet and do not require supplementation .

B. Maternal and fetal assessment

B.1: Maternal assessment

- **Hypertensive disorders of pregnancy** are important causes of maternal and perinatal morbidity and mortality, with approximately a quarter of maternal deaths and near misses estimated to be due to preeclampsia and eclampsia Antenatal screening for pre-eclampsia is an essential part of good ANC. *It is routinely performed by measuring maternal blood pressure and checking for proteinuria at each ANC contact* and, upon detection of pre-eclampsia, specific management is required to prevent eclampsia and other poor maternal and perinatal outcomes.
- **Anaemia**: Defined as a blood haemoglobin (Hb) concentration below 11.0 g/dl, anaemia is the world's second leading cause of disability, and one of the most serious global public health problems, with prevalence of anaemia among pregnant women at about 38% globally, 50.3% in India and 46.6% in Rajasthan.

Full blood count (CBC) testing is the recommended method for diagnosing anaemia during pregnancy. In settings where full blood count testing is not available, on-site haemoglobin testing with a haemoglobinometer is recommended over the use of the haemoglobin colour scale as the method for diagnosing anaemia in pregnancy.

- **Asymptomatic bacteriuria** (ASB): It is defined as true bacteriuria in the absence of specific symptoms of acute urinary tract infection, with rates as high as 74%, associated with an increased risk of urinary tract infections (cystitis and pyelonephritis). Midstream urine culture is the recommended method for diagnosing asymptomatic bacteriuria in pregnancy. In settings where urine culture is not available, on-site midstream urine Gram-staining is recommended over the use of dipstick tests as the method for diagnosing ASB in pregnancy.
- **Gestational Diabetes Mellitus (GDM):** Hyperglycaemia first detected at any time during pregnancy should be classified as either gestational diabetes mellitus (GDM) or diabetes mellitus in pregnancy, according to WHO criteria. *Diabetes mellitus in pregnancy differs from GDM in that the hyperglycaemia is more severe and does not resolve after pregnancy as it does with GDM.*
    - Studies shows that women with hyperglycaemia (diabetes mellitus and GDM) detected during pregnancy are at greater risk of adverse pregnancy outcomes, including macrosomia, pre-eclampsia/hypertensive disorders in pregnancy, and shoulder dystocia. Treatment of GDM, which usually involves a stepped approach of lifestyle changes (nutritional counselling and exercise) followed by oral blood-glucose-lowering agents or insulin if necessary, is effective in reducing these poor outcomes.
    - The usual window for diagnosing GDM is between 24 and 28 weeks of gestation. Risk factor screening is used in some settings as a strategy to determine the need for a 2-hour 75 g oral glucose tolerance test (OGTT). These include a BMI of greater than 30 kg/m^2, previous GDM, previous macrosomia, family history of diabetes mellitus, and ethnicity with a high prevalence of diabetes mellitus. In addition, glycosuria on dipstick testing (2+ or above on one occasion, or 1+ on two or more occasions) may indicate undiagnosed GDM and, if this is observed, performing an OGTT could be considered .
    - The management approach for women classified with diabetes mellitus in pregnancy (i.e. severe hyperglycaemia first detected in pregnancy) usually differs from the approach for women with GDM, particularly when diagnosed early in pregnancy; however, the principles of management are similar and both require referral and increased monitoring.

- **Tobacco use** 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 pregnancy and at every antenatal care visit. Health-care providers should provide pregnant women, their partners and other household members with advice and information about the risks of second-hand smoke (SHS) exposure from all forms of smoked tobacco, as well as strategies to reduce SHS in the home.
- **Substance abuse** Health-care providers should ask all pregnant women about their use of alcohol and other substances (past and present) as early as possible in the pregnancy and at every antenatal care visit. Pregnant women should be advised of the potential health risks to themselves and to their babies posed by alcohol and drug use.
- **Human immunodeficiency virus (HIV) and syphilis** In low-prevalence settings, a provider-initiated testing and counselling (PITC) for HIV can be considered for pregnant women in antenatal care settings as a key component of the effort to eliminate mother-to-child transmission of HIV, and to integrate HIV testing with syphilis, viral or other key tests, as relevant to the setting. *WHO recommends that ART should be initiated in all pregnant women diagnosed with HIV at any CD4 count and continued lifelong.*
  To prevent mother-to-child transmission of syphilis, all pregnant women should be screened for syphilis at the first ANC visit in the first trimester and again in the third trimester of pregnancy.
- **Tuberculosis (TB)** In settings where the tuberculosis (TB) prevalence in the general population is 100/100 000 population or higher, systematic screening for active TB should be considered for pregnant women as part of antenatal care. TB increases the risk of preterm birth, perinatal death and other pregnancy complications. Initiating TB treatment early is associated with better maternal and infant outcomes than late initiation.

B.2: Fetal assessment

- **Daily fetal movement counting** Fetal movement counting is when a pregnant woman counts and records her baby's movements in order to monitor the baby's health. Various methods have been described, with further monitoring variously indicated depending on the method used, for example, if fewer than six distinct movements are felt within 2 hours or fewer than 10 distinct movements are felt within 12 hours (the Cardiff "count to ten" method).
  While daily fetal movement counting is not recommended, healthy pregnant women should be made aware of the importance of fetal movements in the third trimester and of reporting reduced fetal movements.

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

C. Preventive measures

- **Asymptomatic bacteriuria** (ASB): 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.
- **Rhesus D alloimmunization:** Rhesus (Rh) negative mothers can develop Rh antibodies if they have an Rh-positive newborn, causing haemolytic disease of the newborn (HDN) in subsequent pregnancies. Administering anti-D immunoglobulin to Rh-negative women within 72 hours of giving birth to an Rh-positive baby is an effective way of preventing RhD alloimmunization and HDN. However, Rhesus alloimmunization occurring in the third trimester due to occult transplacental haemorrhages will not be prevented by postpartum anti-D.
- **Soil-transmitted helminthiasis**: "Preventive chemotherapy (deworming), using single-dose albendazole (400 mg) or mebendazole (500 mg) is recommended as a public health intervention for pregnant women, after the first trimester, living in areas where both: (1) the baseline prevalence of hookworm and/or T. trichiura infection is 20% or more and (2) where anaemia is a severe public health problem, with prevalence of 40% or higher among pregnant women, in order to reduce the burden of hookworm and T. trichiura infection."
- **Neonatal tetanus**: Tetanus is an acute disease caused by an exotoxin produced by Clostridium tetani. Neonatal infection usually occurs through the exposure of the unhealed umbilical cord stump to tetanus spores, which are universally present in soil, and newborns need to have received maternal antibodies via the placenta to be protected at birth.

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

  If a pregnant woman has not previously been vaccinated, or if her immunization status is unknown, she should receive two doses of a TT vaccine one month apart with the second dose given at least two weeks before delivery. Two doses protect against tetanus infection for 1–3 years in most people. A third dose is recommended six months after the second dose, which should extend protection to at least five years. – Two further doses for women who are first vaccinated against tetanus during pregnancy should be given after the third

dose, in the two subsequent years or during two subsequent pregnancies. – If a woman has had 1–4 doses of a TT-CV in the past, she should receive one dose of a TT-CV during each subsequent pregnancy to a total of five doses (five doses protects throughout the childbearing years).

- **Intermittent preventive treatment of malaria in pregnancy (IPTp)** Malaria infection during pregnancy is a major public health problem, with substantial risks for the mother, her fetus and the newborn. WHO recommends a package of interventions for preventing and controlling malaria during pregnancy, which includes promotion and use of insecticide-treated nets, appropriate case management with prompt, effective treatment, and, in areas with moderate to high transmission of Plasmodium falciparum, administration of IPTp-SP. In malaria-endemic areas, intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp-SP) is recommended for all pregnant women. Dosing should start in the second trimester, and doses should be given at least one month apart, with the objective of ensuring that at least three doses are received.
  This recommendation has been integrated from the WHO Guidelines for the treatment of malaria.
- **Pre-exposure prophylaxis for HIV prevention** Oral pre-exposure prophylaxis (PrEP) containing tenofovir disoproxil fumarate (TDF) should be offered as an additional prevention choice for pregnant women at substantial risk of HIV infection as part of combination prevention approaches.

D. Interventions for common physiological symptoms

- **Interventions for nausea and vomiting -** ginger, chamomile, vitamin B6 and/or acupuncture.
- **Interventions for heartburn** include avoidance of large, fatty meals and alcohol, cessation of smoking, and raising the head of the bed to sleep. Antacids, such as magnesium carbonate and aluminium hydroxide preparations, are probably unlikely to cause harm in recommended dosages. Antacids may impair absorption of other drugs, and therefore should not be taken within two hours of iron and folic acid supplements.
- **Interventions for leg cramps -** Magnesium, calcium or non-pharmacological treatment options can be used.
- **Interventions for low back and pelvic pain -** regular exercise throughout pregnancy is recommended to prevent low back and pelvic pain.
- **Interventions for constipation -** dietary advice to reduce constipation during pregnancy should include promoting adequate intake of water and dietary fibre (found in vegetables, nuts, fruit and whole grains.

- **Interventions for varicose veins and oedema -** Non-pharmacological options, such as compression stockings, leg elevation and water immersion, can be used.

E. Health systems interventions to improve the utilization and quality of ANC

Women-held case notes it is recommended that each pregnant woman carries her own case notes during pregnancy to improve continuity and quality of care.

F. Antenatal care contact schedules

Antenatal care models with a **minimum of eight contacts** are recommended to reduce perinatal mortality and improve women's experience of care.

The four-visit focused ANC (FANC) model does not offer women adequate contact with health-care practitioners and is no longer recommended. Furthermore, evidence suggests that more ANC visits, irrespective of the resource setting, are probably associated with greater maternal satisfaction than less ANC visits. The word 'contact' to 'visit' is preferred, as it implies an active connection between a pregnant woman and a health-care provider that is not implicit with the word 'visit'.

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

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Summary Actions –

In India, we follow the norm of minimum four visits in antenatal period. However, it is to be noted that these four visits are not restrictive rather it is to reach the unreached.

Things to do during ANC Visits:-

Register pregnancy at health facility as early as possible to identify probable risk factors and address them timely.

First ANC visit

- Taking Weight - to know the amount of weight she should gain during pregnancy (page 11).
- Hemoglobin estimation - to make out anemia in pregnancy and address it.
- BP estimation- to rule out existing hypertensive disorders – BP is considered high if blood systolic pressure is ≥ 140 mm Hg or diastolic ≥ 90 mm Hg.
- Urine test for Albumin to detect pre eclampsia and Bacteriuria (usually asymptomatic).
- History of Tobbaco use for both first hand or second hand smoke.
- Substance abuse (Alcohol & other drugs) both past & present.
- HIV test - to eliminate mother to child transmission of HIV
- Tuberculosis screening
- USG - One before 24 weeks to estimate gestational age, fetal anomalies and multiple pregnancies.
- Counsel for malaria prevention, using iodide salt.
- Advice about available health facilities which can be utilized as per her needs.
- Advice on sources of social or financial support that may be available in community.

Second ANC visit

- Check for any health problem and advice on rest (7-8 hours sleep in night and at least half to one hour rest in afternoon) and nutrition.

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- GDM- Between 24- 28 weeks of gestation do 2 hour 75 gm oral glucose tolerance test (OGTT) if BMI> 30 kg/m2; Previous GDM; Previous macrosamia; Family history of DM; Glycosuria (Glucose in urine) by dipstick testing ≥2 + on one occasion.
- Observe for signs and symptoms of Hypoglycemia- Cold clammy skin, palpitation, sweating, anxiety, hunger hyperglycemia, excessive thirst, frequent urination, dry mouth blurred vision, coma.

Third ANC visit

- Direct special attention toward signs of multiple pregnancies and refer if more than one fetus is suspected.
- Review the birth preparedness and the complication readiness plan (plan for transportation, money saving, blood and who will accompany).
- Perform the dipstick test for protein in the urine for all pregnant women (since hypertensive disorders of pregnancy are unpredictable and late pregnancy phenomena).

  Chronic Hypertension- hypertension that antedates the pregnancy or present before 20 weeks of gestation. It can be complicated by pre-eclampsia when there is proteinuria as well.

  Pregnancy induced hypertension- hypertension after 20 weeks of pregnancy. *Pre-eclampsia* - May present with any symptoms of headache, blurring of vision, epigastric pain or oliguria and oedema .When the blood pressure is >=140/90 but 3 gm/dl in a 24hrs specimen or with proteinuria trace, 1+ or 2+ , Severe pre-eclampsia- The blood pressure is >= 160/110 with proteinuria 3+ or 4+, *Eclampsia*- Eclampsia is the occurrence of generalized convulsion(s), usually associated with background of pre-eclampsia during pregnancy, labour or within seven days of delivery. However, it can occur even in normotensive women. Convulsions with >=140/90 and proteinuria more than trace.
- Decision for referral based on updated risk assessment. Remember that some women will go into labour before the next scheduled visit.

- The most critical postnatal period for the mother is the first 4 hours; this is when most cases of postpartum haemorrhage (PPH) occur.

Fourth ANC visit

Covering all the activities already described for the third visit. In addition:

- Abdominal examination to confirm fetal lie and presentation. It is extremely important if the baby is in breech presentation or a transverse lie; refer her to the nearest health facility for obstetric evaluation.
- Fetal Movement- Mothers need to be advised to count fetal movement in third trimester. If fewer than six distinct movements are felt within 2 hrs or fewer than 10 distinct movements are felt within 12 hrs, health personnel needs to be reported.
- Birth preparedness, complication readiness and emergency planning - provide the woman with advice on signs of normal labour and pregnancy related emergencies and dealing with them, including where she should go for assistance.
- Give advice on family planning
- Encourage the woman to consider exclusive breastfeeding for her baby for at least six months.

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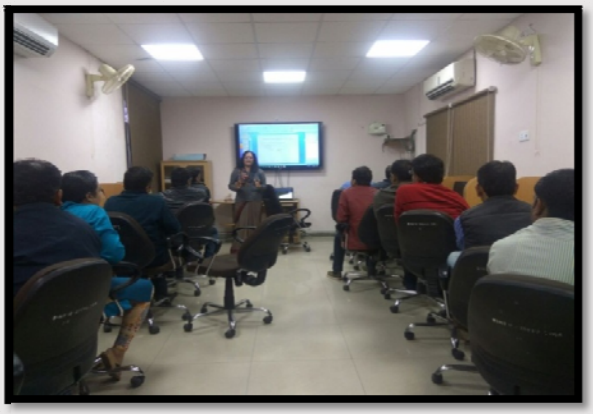
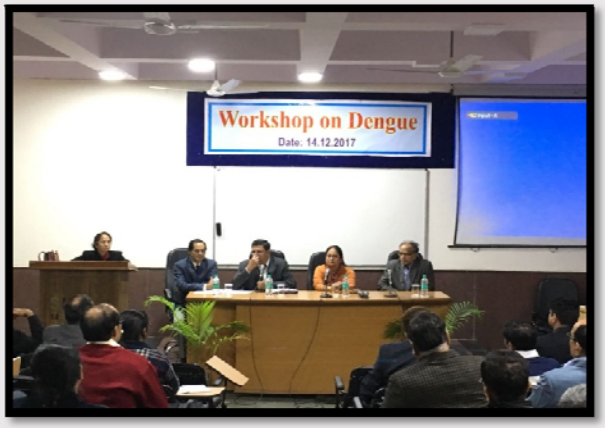
Photo Gallery

Trainings at SIHFW





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Trainings in districts

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