NIGF
E BULLETIN

FIRST EDITION • OCTOBER 2023

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Chairman's MESSAGE

Ladies and gentlemen,

A warm welcome to the North India Gynaecologist Forum's 1st bulletin.

It is an effort of shared commitment to improving maternal care in our region.

Our theme for this year is "Maternal Care Bundle," and it embodies our dedication to delivering comprehensive, efficient, and compassionate care to expectant mothers.

The maternal care bundle is our blueprint for success. It represents a collective effort to ensure that every mother's life metters and the child receives the highest standard of care.

In the spirit of collaboration, let us use this platform to share knowledge, best practices, and innovative approaches to enhance maternal care.

Together, we can make a significant impact on the health and well-being of mothers (Anaemia free, Near zero mortality in PPH) and their newborns.

Let's explore new horizons, create meaningful connections, and inspire positive change.

Thank you for being part of this important journey. Your expertise and dedication will help us achieve our goal of healthier mothers and happier babies.

Let's work together to provide "Crisp and to the point" maternal care that sets a benchmark for the entire northern region.

Thank you and let's make a difference!

Dr. Sharda Jain
Chairman NIGF

Presidential MESSAGE

It is a great pleasure to present first issue of E bulletin of North India Gynaec Forum on Auspicious day of 2nd October, Birth anniversary of our father of nation – Mahatma Gandhi.

In accordance with ideology of Mahatma Gandhi who always said that our all thought and action s hould be guided by the review that how they will affect & change positively the last person in the row. We have kept the theme of this issue on Maternal Care Bundle to improve Maternal & Newborn health statistics and status. Maternal & New born health statistics in Northern States need special attention as Maternal Mortality & Criticality is relatively higher in Northern States & we obstetrician & Gynecologist have great role to play in improving and improvising it.

North India Gynaec Forum was formally framed in June 2022 with vision to unite and connect ob Gyn of all cadres of 7 States and 2 Union Territory of North India. We have accomplished many mile stones in one year -regular Virtual Academia series in Obstetrics & Gynaecology, Few physical CME and annual academic Meet at New Delhi on 18 June 2023 in which ob Gyn of all states participated with full enthusiasm.

On our National Days our mentors have delivered motivational NIGF Platinum oration – 15th August by Prof Kamal Buckshee, 2nd October Padamsri Dr Usha Sharma, 24 Dec Dr Sushma Chawla, 26 January Dr Kala Vashistha have been our orators. On 11 April our National Safe Motherhood Day I was privileged to deliver diamond oration on Safe Motherhood -hopes & Realities and on doctors day Dr Ragini Agrawal delivered oration on challenges of Doctors Lives .

Our key priorities for year 2022-2024 are 1.Anemia Mukt Bharat 2.Cervical Cancer Free India 3. Prevent Preventable mortality & criticality from Obstetric Haemorrhage 4 Prevention of Birth Defect 5 Creating Medicolegal safety & Sensitivity.

Different state chapters of NIGF are working for fulfilling this vision and we have already completed academia series on Maternal Care Bundles on Sepsis, Preterm Birth and Postpartum hemorrhage by Uttar Pradesh, Uttarakhand & Rajasthan Chapters .

We have released video of how to examine victim of sexual assault on International Women Day and it has been uploaded on NIGF web page for benefit of all members . Beside Presentation of GOI guidelines on Anemia Mukt Bharat has been uploaded and sent to all president & secretaries & office bearers . Great effort of our patron Dr Sharda Jain are commendable at all steps of our activities.

In this bulletin we have included scientific articles as well our social and cultural activities .

We invite al members to join North India Gynaec Forum and participate actively in various academic , social cultural activities.

Gratitude for always being together,

Best wishes

Dr. Sadhana Gupta
President NIGF 22-24

President Elect's MESSAGE

It is a great pleasure to know that NIGF is taking a new step and releasing the News bulletin.

Our vision is to save mothers and save our fraternity from medicolegal issues.

Maternal care bundle is a great tool in reducing maternal mortality and it gives guidance to clinicians for working according to a set protocol.

"No mother should die during giving birth "

Together we can make a difference

Long Live NIGF

Dr Ragini Agrawal
President Elect
NIGF

Maternal & New Born health statistics of Northern Indian States

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Maternal and Newborn health is a critical aspect of healthcare that reflects the overall well being of a society. Mothers and children not only constitute a large group, but they are also a "vulnerable" or special-risk group. The risk is connected with child-bearing in the case of women; and growth, development and survival in the case of infants and children. The problems affecting the health of mother and child are multifactorial. Mother and child must be considered as one unit. A healthy mother brings forth a healthy baby. By improving the health of mothers and children, we contribute to the health of the general population.

Northern India, which is rich diverse population, varying level of healthcare infrastructure and its social economic conditions. Therefore maternal and newborn health statistics to be taken into account to look for both the challenges faced and the opportunities for improvement.

Maternal health statistics determined by-

- MMR (Maternal Mortality Ratio)
- Institutional Deliveries
- Nutritional deficiencies (anaemia)
- Postnatal care
- Antenatal care
- Access to health care
- Early and child marriage

Newborn health statistics determined by-

- NMR (Neonatal Mortality Rate)
- Malnutrition
- Immunisation coverage
- Low birth weight
- Availability of essential newborn care
- Infections

Comparative Data of Maternal And Newborn Health Statistics according to NFHS-5

	Early Marriage < 18 Years	NNMR	IMR	U5MR	Atleast 4 Anc Visit	Received Post Natal Care	Institutional Births	Fully Vaccinated	Exclusively Breast-Fed	Pregnant Women Who Are Anaemic
Uttar Pradesh	15.8	35.7	50.4	59.8	42.4	72	83.4	78.4	59.7	45.9
Nct Delhi	9.9	17.5	24.5	30.6	77.2	85.4	91.8	79.4	64.3	42.2
Uttarakhand	9.8	32.4	39.1	45.6	61.8	78.0	83.2	88.6	52.5	46.4
Jammu & Kashmir	4.5	9.8	16.3	18.5	80.9	84.2	92.4	96.5	62	44.1
Punjab	8.7	21.8	28	32.7	59.3	86.2	94.3	85.2	55.5	51.7
Chandigarh	9.7	–	–	–	78.7	90.6	96.9	82.8	–	–
Himachal Pradesh	5.4	20.5	25.6	28.9	70.3	86.3	88.2	96.4	63.9	42.2
Haryana	12.5	21.6	33.3	38.7	60.4	91.3	94.9	81.1	69.5	56.5
Bihar	40.8	34.5	46.8	56.4	25.2	57.3	76.2	82.7	58.9	63.1
Rajasthan	25.4	20.2	30.3	37.6	55.3	85.3	94.9	85.3	70.4	46.3

According to NFHS-5 data compared among northern states of india , Bihar has highest percentage of women with early age of marriage.

NNMR, IMR, U5MR is highest in Uttar-Pradesh.

Recent records show that there has been a decline in the MMR of India. It is tough to calculate the exact maternal mortality except where the comprehensive records of deaths and causes of death are available. So surveys and census are used to estimate the levels of maternal mortality[1,2].

India's maternal mortality ratio (MMR) has improved to 103 in 2017-19, from 113 in 2016-18, marking an 8.8% decline.

With this persistent decline, India is on the verge of achieving the National Health Policy (NHP) target of 100/lakh live births by 2020 and certainly on track to achieve the Sustainable Development Goal (SDG) target of 70/ lakh live births by 2030

Currently there are nine States that have achieved the MMR target set by the National Health Policy. This includes seven states along with Karnataka (83) and Haryana (96).

The states of Uttar Pradesh, Rajasthan and Bihar have seen the most drop in MMR in absolute numbers. These states continue to have high level MMRs despite the improvement.

Uttar Pradesh reported a decline of 30 points, Rajasthan (23 points) and Bihar (19 points).

A remarkable fall of more than 15 percent has been observed in the states of Kerala, Maharashtra and Uttar Pradesh.

Notably states like West Bengal, Haryana, Uttarakhand and Chhattisgarh have recorded an increase in MMR over the last survey in contrast to the national trend.

Challenges faced -

- Limited healthcare Facilities in rural areas
- Socio economic disparities affecting health care seeking behaviour
- access to adequate nutrition lack of proper nutrition
- low literacy rates among women
- certain deep-rooted cultural practises leading to delay in seeking medical care
- Unawareness

Opportunities for improvement -

- Improving health care infrastructure
- investment in healthcare infrastructure
- educational campaigns for awareness at individual and community level
- implementation of nutrition program programmes
- reducing poverty and malnutrition
- skilled healthcare workforce that is training and deploying more skilled healthcare professionals
- initiation of telemedicine in remote areas
- mobile health initiatives
- providing access to emergency obstetric care when necessary and providing post- natal care for mothers and babies
- enhancing women's access to family planning, adequate nutrition, improved water and sanitation facilities.
- affordable basic health care

- protection from abuse, violene, discrimination
- empowerment of women, greater involvement of men in maternal and child care, would lower mortality rates further still.

Attempt to lower MMR must take into consideration the following measures :

1. Early registration of pregnancy;
2. At least four antenatal check-ups;
3. Dietary supplementation , including correction of anaemia;
4. Prevention of infection and haemorrhage during puerperium;
5. Prevention of complications, e.g., eclampsia, malpresentations, ruptured uterus;
6. Treatment of medical conditions, e.g., hypertension, diabetes, tuberculosis, etc;
7. Anti-malaria and tetanus prophylaxis;
8. Clean delivery practice;
9. In India, a large number of maternal deaths could be prevented with the help of trained village level health workers:
10. Institutional deliveries for women with bad obstetric history and risk factors;
11. Promotion of family planning - to control the number of children to not more than two, and spacing of births;
12. Identification of every maternal death. and searching for its cause; and
13. Safe abortion services.

The measures needed to achieve reduction of infant mortality comprise the following :

- Prenatal nutrition
- Prevention of infection
- Breast-feeding
- Growth monitoring
- Family planning
- Sanitation
- Provision of primary health care
- Socio-economic development
- Education

Government programmes and schemes -

- **Anaemia Mukt Bharat**[3]**-** Anaemia Mukt Bharat (AMB) strategy was launched in 2018 with the objective of reducing anaemia prevalence among children, adolescents and women in the reproductive age group.

  It focusses on six target beneficiary groups, through six interventions and six institutional mechanisms to achieve the envisaged target under the POSHAN Abhiyan.

  The 6 interventions include supply of iron and folic acid supplements, deworming, behaviour change communication campaign, testing for anaemia, provision of iron and folic acid fortified foods in government-funded health programmes and addressing of non-nutritional causes of anaemia in endemic pockets with a special focus on malaria and fluorosis.

- **PMSMA (Pradhan Mantri Surakshit Matritva Abhiyan)** provides a fixed day for assured, comprehensive and quality antenatal care free of cost to pregnant women on 9th of every month.[4]

- **JSY (Janani Suraksha Yojana),** National Health Mission a **National Health Mission** to link cash assistance to institutional deliveries[5].

- **JSSK (Janani-Shishu Suraksha Karyakram)**
- **SUMAN (Surakshit Matritva Aashwasan')**

  Surakshit Matritva Aashwasan (SUMAN) has been launched by the Ministry of Health and Family Welfare in 2019.

  It aims to provide assured, dignified and respectful delivery of quality healthcare services at no cost and zero tolerance for denial of services to any woman and newborn visiting a public health facility in order to end all preventable maternal and newborn deaths and morbidities and provide a positive birthing experience.

  Under the scheme, all pregnant women, newborns and mothers up to 6 months of delivery will be able to avail of several free health care services such as four antenatal check-ups and six home-based newborn care visits[6,7]

- **LaQshya Labour Room Quality Improvement Initiative**

  This program focuses on Public Health facilities to help. They will be assisted by helping them improve their maternity operation theatres, and help augment the quality of care in labour rooms.

  This program will be implemented in all Community Health Centres (CHC), First Referral Unit (FRU), District Hospitals, Medical College Hospitals.

- **Pradhan Mantri Matru Vandana Yojana (PMMVY)**

  It is a **centrally sponsored scheme** being executed by the **Ministry of Women and Child Development**[8]**.**

  Cash benefits are provided to pregnant women in their bank account directly to meet **enhanced nutritional needs** and partially **compensate for wage loss.**

  This Maternity Benefit Program is implemented in all districts.

  On fulfilling certain conditions, the beneficiaries would receive Rs 5,000 in 3 instalments.

  Pradhan Mantri Matru Vandana Yojana – Common Application Software (PMMVY – CAS) is used for monitoring this program.

Conclusion

Northern Indian states have made progress in maternal and newborn health, but challenges persist. Improving maternal and newborn health in Northern Indian states is an urgent necessity. High maternal and neonatal mortality rates, low birth weight, and disparities in healthcare access continue to be major concerns.[910]Addressing these challenges requires a multi-pronged approach, including investments in healthcare infrastructure, awareness campaigns, and improved nutrition. By prioritizing maternal and newborn health, northern India can work towards a healthier future for its mothers and babies. we can work towards ensuring that every mother and newborn in the region receives the care and support they need for a healthy and prosperous life.

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Don't think about making women fit the world - think about making the world fit women.

– Gloria Steinem

Prediction and Prevention of Preterm Labour

Dr. Archna Singh
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Introduction

Prematurity is the leading cause of death worldwide before the age of five. An estimated 35% of neonatal deaths in the first 28 days of life are caused by preterm birth complications (1). Preterm newborns are at increased risk of short - term morbidities, including respiratory distress syndrome, intraventricular haemorrhage, necrotizing enterocolitis and sepsis. It continues to be a public health concern as the number is rising even after exceptional medical care provided. Survivors face long term morbidities like chronic lung disease, physical, developmental, neurological and cognitive problems (3-4). According to World Health Organization, 15 million babies are born prematurely each year, prevalence being 5% to 18% (6). Countries with highest numbers of preterm births include India, China and Nigeria (2).

Preterm birth is defined as a baby born prior to 37 completed weeks of gestation. These are categorised into extremely preterm (< 28 weeks), very preterm (28 to 32 weeks), moderate preterm (32 – 37 weeks), early moderate preterm (32-34 weeks), late moderate preterm (34 -37 weeks).

Death and disability following preterm birth in a large number of cases can be reduced through interventions provided to the mother before or during pregnancy, and to the preterm newborn after birth. Primary prevention includes interventions directed to all women to reduce preterm birth. Secondary prevention includes Interventions directed at women with known risk factors. Tertiary prevention interventions are provided to the women shortly before or during the birth process with the aim of overcoming immediate and future health challenges of the newborn, such as lung immaturity, susceptibility to infection, and neurological complications. Essential and additional care of the preterm newborn to prevent and treat potential complications is also critical to newborn survival without disability. This may include resuscitation, kangaroo mother care, thermal care, feeding support, infection treatment and respiratory support including CPAP (18-21).

Risk Factors For Preterm Labour

- Teenage pregnancy (b/o physiological immaturity)
- Advanced maternal age (> 35 years), chronic medical conditions are more prevalent
- Vaginal bleeding in any trimester / early pregnancy spotting
- Previous h/o preterm birth (7)
- Short interpregnancy interval
- Uterine anamolies like septate uterus
- Uterine overdistension as in multiple gestation and polyhydramnios
- Oligohydramnios
- Uterine abnormalities like fibroids
- Cervical incompetence, congenital or iatrogenic (cervical conization or loop electrosurgical excision
- In vitro fertilization
- Intra-abdominal surgery
- Foetal anamolies
- Infections like Urinary tract infection, Bacterial vaginosis, Chorioamnionitis

- Periodontal disease
- Systemic maternal illness like Hypertension, Diabetes, Autoimmune diseases

Life style factors –

- Low socioeconomic status
- Undernutrition
- Obesity, low BMI, Inadequate maternal weight gain
- Drug abuse
- Smoking, Cocaine
- Long working hours
- Psychological factors like stress and anxiety

Pathophysiology

Pathways leading to labour are activated physiologically at term pregnancy but as a result of some abnormality in preterm cases. These include increased uterine contractility, Cervical changes, activation of decidua and membranes.

Key process in preterm labour is Foetal Inflammatory Response Syndrome (FIRS) which stimulates a pathway that results in increase of cortisol secretion by the foetal adrenal glands. These events result in increase of oxytocin receptors concentration and sensitivity, increase of oestrogen receptors and sensitivity, increase of PGF2-alpha and functional withdrawal of progesterone .

Maternal inflammatory response stimulates cervical ripening. The basic pathophysiologic process involved in preterm labour is inflammation. The pathological processes include

- Infection (both extrauterine and intrauterine)
- Excessive uterine distension
- Cervical incompetence
- Uteroplacental ischaemia
- Hormonal disorders
- Foetus as allograft

Prediction of Preterm Labour

The aim of prediction is to identify asymptomatic high- risk women for preterm labour and to determine the risk of preterm delivery within next 7 days so that appropriate and timely intervention can be done to improve the outcome.

Patient gives history of

- Pelvic pressure
- Menstrual like cramps
- Watery vaginal discharge
- Low back pain

High likelihood of preterm birth within 7 days may be assessed if there is preterm rupture of membranes without preterm labour, spontaneous preterm labour with intact membranes if the women experience at least six regular contractions per hour and at least either dilatation of cervix $\geq$ 3 cm. or $\geq$ 75% effacement, or planned preterm birth by induction or caesarean section. (18)

Screening Tests for Prediction of Labour

- **Ultrasonographic Assessment of Cervix**

  Endo vaginal ultrasound is the preferred choice. Shortening of cervical length (<25 mm)

before 24 weeks of gestation, widening of endocervical canal, thinning of lower uterine segment, bulging of membranes into the cervical canal, anterior uterocervical angle ≥ 95° suggest higher risk of preterm labour, uterocervical angle (between lower uterine segment and cervical canal) ≥ 105° predict preterm labour (10,11,17).

Cervical consistency by elastography can also be used. Elastographic abnormalities may precede ultrasound and clinical findings

Uterine artery pulsatility index was found significantly higher in women with threatened preterm labour who delivered within 7 days. (12)

- **Biochemical Markers In Cervico- Vaginal Secretions**

Fetal Fibronectin (fFn)

A value of > 50 ng/ml after 24weeks of gestation is considered positive and signals a breakdown of chorion- decidua barrier (8) and increased risk of preterm labour. False positive test may be due to bleeding, intercourse, digital examination or vaginal ultrasound. It is contraindicated in ruptured membranes and with cervical cerclage in situ. Negative test has higher probability of being accurate. It is detected by ELISA.

Placental Alpha Macroglobulin-1 (PMAG-1) Test

It is a most important predictor of impending spontaneous birth within 7 days of a patient presenting with signs and symptoms of preterm labour (9). It is also known as partosure test, performed to detect PAMG-1 in cervico-vaginal secretions.

Phosphorylated Insulin Like Growthfactor Binding Protein 1 (Ph IGFBP1)

A newer marker found in decidual tissues, released in the cervical secretions. A concentration of < 10 ug/ l in asymptomatic women is negative and predicts low risk of preterm labour. A positive test indicates that the women is in preterm labour

- **Other Markers**

Protein biomarkers in human amniotic fluid like IL-6, IL-8. IL-16

Salivary estriol, progesterone and their ratio

Plasma urocortin

Serum and neutrophil collagenase

Tissue inhibitor of metalloproteinase

Serum relaxin

Prevention of Preterm Labour

Prevention becomes difficult as there is no reliable method to predict changes that may lead to preterm labour. By taking care of some factors and by interventions recommended by WHO, the morbidity and mortality can be reduced to a great extent.

Primary Prevention

- **Pre pregnancy**

Counselling for childbearing at right age

Optimization of nutrition

Optimization of weight

Cessation of smoking

Correction of anemia, folate and iron deficiency

Avoidance of multiple MTPs

Adequate spacing of pregnancies

Optimising therapy for medical conditions like Hypertension, Diabetes Mellitus, Asthma and other chronic illness (13-14)

- **During pregnancy**

  Encourage early booking and regular antenatal visits

  Educate to seek early medical care in case of any symptoms of preterm labour

  Reduce working hours and limit physical activity

  Coital abstinence

Secondary Prevention

- Screening of risk factors
- Treatment of infections like asymptomatic bacteriuria, UTI, Bacterial vaginosis
- **Cervical Cerclage**

  Recommended in patients with cervical incompetence. The procedure can be done vaginally (Mc Donald's stich or Shirodkar's stitch) or intra abdominally (laparoscopically or laparotomy) in previously failed vaginal stitch or with a very short cervix where vaginal stitch is not possible. Intra-abdominal cerclage is done preferably pre pregnancy or in early pregnancy. A non-absorbable suture / tape is used.

  History indicated cervical cerclage is preferably done at 11- 14 weeks in women with history of three or more mid trimester abortions or preterm birth,

  Ultrasound indicated or therapeutic cerclage is done between 14 to 24 weeks in women with cervical length of 25 mm or less before 24 weeks of gestation (16) with history of any pregnancy loss.

  Emergency or rescue cerclage can be done up to 28 weeks in women presenting with dilated cervix or bulging membranes

- **Progesterone Therapy**

  Progesterone has anti inflammatory properties and also relaxes uterine muscles.

  Both weekly 250 mg intramuscular 17 alpha- hydroxyprogesterone and natural vaginal progesterone 200 mg twice daily show considerable reduction of preterm delivery in high - risk women (15). Initiation of progesterone supplementation is advocated between 16 to 24 weeks of pregnancy and continued up to 36 weeks of gestation.

Tertiary Prevention

This includes interventions to reduce the perinatal morbidity and mortality once the preterm labour process sets in and there are high chances of preterm delivery within 7 days.

WHO recommended a bundle approach which includes small sets of evidence based independent interventions that when implemented together showed significantly improved outcomes compared to when they are implemented individually.

Components of Maternal Care Bundle for Preterm Birth

Antenatal to Mother

- Administration of Antenatal Corticosteroids
- Tocolytics
- Maternal Antibiotics
- Use of Magnesium sulphate for foetal neuroprotection

To the Newborn

- Immediate stabilization or resuscitation of newborn
- Maintenance of optimal temperature
- Feeding support

- Early administration of parenteral Antibiotics
- Oxygen therapy
- Use of surfactant
- Kangaroo mother care
- CPAP

Corticosteroids

Antenatal corticosteroid therapy is recommended for women with a high likelihood of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met (18)

- Gestational age estimation can be accurately undertaken
- There is high likelihood of preterm birth within 7 days of starting therapy
- There is no clinical evidence of maternal infection
- Adequate childbirth care is available (including capacity to recognize and safely manage preterm labour and birth)
- Preterm newborn care can receive adequate care (including resuscitation, kangaroo mother care, thermal care, feeding support, infection treatment and respiratory support including continuous positive airway pressure as needed)
- Antenatal corticosteroid therapy, either intramuscular Dexamethasone or Betamethasone (total 24 mg in divided doses) is recommended as antenatal corticosteroid of choice. Four doses of IM dexamethasone 6 mg 12 hours apart or 2 doses of IM betamethasone 12 mg 24 hours apart are the preferred choice. Dexamethasone has the advantage of lower cost and wider availability.
- Antenatal corticosteroid therapy is recommended even if it is anticipated that the baby may deliver early and the full course of corticosteroids may not be completed whether single or multiple birth is expected. Where considered safe, tocolytic therapy should be considered as an intervention to gain time to complete a single course of antenatal corticosteroids. Women with preterm prelabour rupture of membranes with no clinical signs of infection should receive corticosteroid therapy. Women with hypertensive disorders, Diabetics (with interventions to optimize maternal blood glucose control), growth restricted foetus who have high likelihood of preterm birth should receive a course of corticosteroid therapy.
- Antenatal corticosteroid therapy is not recommended for women with chorioamnionitis or with evidence of ongoing systemic infection like septicaemia or tuberculosis and for women undergoing planned caesarean section at 34 weeks 0 days and beyond.
- A single repeat course of antenatal corticosteroids is recommended for women who have received a single course of antenatal corticosteroids at least 7 days prior and on clinical assessment, have a high likelihood of giving preterm birth in next 7days. These recommendations apply to women between 24 to 34 weeks only.

Tocolytics

Tocolysis is recommended when following conditions are met

- Spontaneous preterm labour is suspected or diagnosed
- Accurate assessment of gestational age between 24 weeks days and 33 weeks 6 days
- No evidence of contraindications to tocolysis like vaginal bleeding, placental abruption, intra uterine foetal death, congenital anamoly incompatible to life, intrauterine infection, severe pre- eclampsia or eclampsia, advanced cervical dilatation, foetal distress or development of serious side effects to tocolytics
- It permits a single course of antenatal corticosteroids to be administered and /or

enables transfer of the mother with baby in utero to a facility where upon birth, the preterm newborn can receive adequate care

- Adequate birth care is available at the facility providing tocolysis (including the capacity to recognize preterm labour and birth)
- Women and families receive adequate information about the benefits and risks of tocolysis, including the lack of information on long term outcomes

WHO recommends Calcium channel blocker, Nifidepine for acute and maintenance tocolytic therapy for women with a high likelihood of preterm birth for the purpose of improving newborn outcomes (19). The commonly used regimen for nifedipine (immediate release) is an initial oral dose of 20 mg followed by 10 mg every 6 hours for 3–7 days or until transfer of mother is completed, whichever comes first.

Oxytocin receptor antagonist, Atisoban, is administered intravenously as a bolus of 6.75 mg over 1 minute followed by a continuous infusion of 18 mg / hour for a period of 3 hours and then 6 mg / hour up to 45 hours.

COX inhibitors are considered to delay birth up to 48 hours in preterm labour prior to 28 weeks of gestation. It is contraindicated in third trimester due to its association with increased risk of premature closure of ductus arteriosus and potential for renal dysfunction leading to oligohydramnios.

Nitric oxide donors (Nitroglycerine or glyceryl trinitrate) can be administered intravenously or transdermal patch as more preferred route, but not easily available.

Magnesium sulphate has a tocolytic effect, can be used to delay birth by 48 hours although not recommended as a tocolytic agent.

Betamimetics are effective, but their use is associated with serious maternal adverse effects which may sometimes be life-threatening.

Combination of tocolytic agents are not advised and monotherapy is recommended. Benefits of maintenance tocolytic regimen needs further research. Tocolysis beyond 34 weeks should not be used.

Magnesium Sulphate For Neuroprotection

Magnesium sulphate is strongly recommended for women at risk of imminent preterm birth before 32 weeks of gestation for prevention of cerebral palsy (20) in infant or child. It should be given if preterm birth is likely within next 24 hours, whether singleton or multifetal pregnancy.

Dose – 4- 6 gm over 20 minutes, then 1- 2 gm / hour until delivery or 24 hours, whichever comes first.

Antibiotics

- Routine administration of antibiotics is not recommended in women at risk of imminent preterm labour with intact membranes and no clinical signs of infection. Although women with established preterm labour should receive intrapartum antibiotic prophylaxis to prevent early onset neonatal Gr B streptococcal infection irrespective of the status of ruptured membranes(16).
- Antibiotics should be administered to women with preterm prelabour rupture of membranes.
- Erythromycin, Penicillin and Ampicillin are recommended antibiotic of choice for prophylaxis in women with PPROM to limit group B Streptococcus.
- Combination of Amoxycillin and Clavulanic acid is not recommended because of increased risk of necrotizing enterocolitis.

Mode of Delivery

- In utero transfer of baby is recommended to a facility where adequate newborn care can be provided with a well-equipped NICU.
- Routine delivery by caesarean section is not for purpose of improving outcome regardless of cephalic or breech presentation, however caesarean section should be considered if potential benefits outweigh the risks.

Newborn Part of Preterm Birth Bundle Care

- Delayed cord clamping is recommended for at least 30 seconds but no longer than three minutes, within which time it is presumed that a stable baby will cry.
- Clearing of airways immediately after birth.
- Thermal care for preterm new born where Kangaroo mother care is recommended which includes early, continuous and prolonged skin to skin contact between mother and baby and breast milk feeding.
- Unstable newborns where Kangaroo mother care cannot be provided, should be taken care of in thermos neutral environment either under radiant warmers or incubators. (21)
- Continuous positive airway pressure (CPAP) is recommended for newborns with RDS.
- Surfactant replacement therapy is recommended for intubated and ventilated newborns with RDS. Prophylactic administration is not recommended.
- Low dose Oxygen therapy (30%) to prevent retinal damage to be administered to preterm babies born at or before 32 weeks(5). Higher concentration of oxygen is avoided but considered as per requirement.

Conclusion

Death and disability following preterm birth can be reduced considerably by ensuring the accessibility and acceptability of the interventions provided to the mother before or during pregnancy, and to the preterm newborn after birth. By preventing preterm deliveries, babies can be assured of lasting health benefits. Public education about premature delivery can contribute to long term benefits.

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"A women is the full circle.
Within her is the power to create,
nurture and transform."

– Diane Mariechld, Writer

Maternal Care Bundle on Preterm Birth

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Introduction

Preterm birth is defined as a baby born prior to 37 completed weeks of gestation[1]. There are sub-categories of preterm birth, based on gestational age:

- extremely preterm (less than 28 weeks)
- very preterm (28 to less than 32 weeks)
- moderate to late preterm (32 to 37weeks).

Babies may be born preterm because of spontaneous preterm labour or because there is a medical indication to plan an induction of labour or caesarean birth early.

An estimated 13.4 million babies were born too early in 2020. That is more than 1 in 10 babies. Approximately 900 000 children died in 2019 of complications of preterm birth[2]. Those that do survive, risk a range of disabilities throughout their lives. Globally, prematurity is the leading cause of death in children under the age of 5 years. Inequalities in survival rates around the world are stark. In low-income settings, half of the babies born at or below 32 weeks (2 months early) die due to a lack of feasible, cost-effective care such as warmth, breastfeeding support and basic care for infections and breathing difficulties. In high-income countries, almost all these babies survive. Alarmingly, in almost all countries with reliable data, preterm birth rates are increasing. The issue of preterm birth is of paramount significance for achieving United Nations Sustainable Development Goal 3 target #3.2, which aims to end all preventable deaths of newborns and children aged under 5 years by 2030.

Complications of Preterm Birth

Infants born preterm remain vulnerable to many complications. Infants born at the lower limit of viability have the highest mortality rates and the highest rates of all complications. The risks associated with preterm births are:

- Respiratory distress syndrome (RDS)
- Sepsis
- Patent ductus arteriosus
- Necrotising enterocolitis
- Intraventricular haemorrhage
- Hypothermia, hypoglycemia, hypocalcemia, hyperbilirubinemia
- Delayed sequelae include cerebral palsy, low IQ, retinopathy of prematurity, higher incidence of neurological abnormalities, learning, hearing, visual disabilities, behavioural abnormalities.

Etiopathogenesis

Preterm labour is now thought to be a syndrome initiated by multiple mechanisms, including infection or inflammation, uteroplacental ischaemia or haemorrhage, uterine overdistension, stress, and other immunologically mediated processes.[3] A precise mechanism cannot be established in most cases; therefore, factors associated with preterm birth, but not obviously in the causal pathway, have been sought to explain preterm labour. An increasing number of risk factors are thought to interact to cause a transition from uterine quiescence toward preterm labour. Since many of the risk factors result inincreased

systemic inflammation, increasing stimulation of the infection or inflammation pathway might explain some of the increases in preterm births associated with multiple risk factors.[4] Most preterm births happen spontaneously, but some are due to medical reasons such as infections, or other pregnancy complications that require early induction of labour or caesarean birth.

Table 1.

Causes of Preterm Birth	
• Extremes of maternal age • Poor socioeconomic status • Smoking, alcohol consumption, substance abuse • Psychological stress • h/o spontaneous preterm birth (25-50% recurrence) • h/o multiple induced abortions • interpregnancy interval of <18 months • inadequate or excessive weight gain during present pregnancy • overdistention of uterus • PPROM	• congenital uterine anomalies • cervical insufficiency • hypertensive disorders • Anaemia • Diabetes • Cardiac, renal, liver diseases • hypothyroidism • infections • iatrogenic- induction of labour • fetal anomalies, IUD, malpresentation, Rh - isoimmunization

Prediction of Preterm Birth

It involves the identification of risk factors and investigations as and when required.

- Detailed history and examination are the key to identify the women who are at risk of preterm birth.
- Assessment of cervical length (CL) using transvaginal sonography (TVS) between 16 to 24 weeks of pregnancy has been recommended world-wide.
- The presence of fetal fibronectin(>50ng/ml) in cervicovaginal secretions between 24 to 34 weeks gestation, prior to rupture of membranes is a sensitive and specific predictor of preterm birth.
- Continuous home uterine activity monitoring is not of much value

Prevention

Infant mortality and morbidity from preterm birth can be reduced through interventions delivered to the mother before or during pregnancy, and to the preterm infant after birth[5]. Interventions can be directed at all women for primary prevention and reduction of the risk of preterm birth (e.g., smoking cessation programme) or aimed at minimizing the risk in women with known risk factors (e.g. progesterone, cervical cerclage)[6]. However, the most beneficial set of maternal interventions are those that are aimed at improving outcomes for preterm infants when preterm birth is inevitable (e.g., antenatal corticosteroids, magnesium sulfate and antibiotic prophylaxis). Special care of the preterm newborn to prevent and treat complications of prematurity is also critical to newborn survival.

- pre-pregnancy counselling and correction of risk factors before conception
- Progesterone is recommended in women with h/o previous preterm birth and short cervical length (TVS). 17 hydroxy progesterone caproate 250 mg IM weekly or 200mg natural micronized progesterone oral or vaginal is recommended from 24-34 weeks
- Cervical cerclage can be decided on the basis of history (previous spontaneous preterm birth). It is done prophylactically at 12-14 weeks of gestation. Short CL (<25mm) evident on TVS (16-24 weeks) in asymptomatic women also warrants cerclage. Rescue cerclage is done in cases with premature cervical dilatation as a salvage measure.

- Prophylactic TOCOLYTICS are not indicated.

Management of Preterm Birth

A maternal care bundle is a set of evidence-based practices that aim to improve the quality and safety of care for mothers and babies.

- It can improve the outcomes for premature babies by reducing the risk of brain injury and death.
- It can enhance the quality and consistency of care across different hospitals and regions.
- It can empower parents to be involved in the care of their baby and support their mental health.
- It can foster collaboration and learning among healthcare professionals and researchers.

1. Antenatal corticosteroids

Animal and human studies have shown that when glucocorticoids (such as dexamethasone or betamethasone) are administered to women with a high likelihood of preterm birth, they cross the placenta and enhance the structural maturity of developing fetal lungs, including inducing differentiation of mesenchymal tissue, accelerating production and secretion of surfactant and decreasing vascular permeability, leading to increased compliance and maximal lung volume[7].

WHO recommendations on antenatal corticosteroid therapy for improving preterm birth outcomes (updated 2022)[8]

- Antenatal corticosteroid therapy is recommended for women with a high likelihood of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met:
  1 Gestational age assessment can be accurately undertaken
  2 There is a high likelihood of preterm birth within 7 days of starting therapy
  3 There is no clinical evidence of maternal infection
  4 Adequate childbirth care is available
  (Including capacity to recognize and safely manage preterm labour and birth)
- should be administered, even if it is anticipated that the full course of corticosteroids may not be completed
- recommended, irrespective of whether single or multiple birth is anticipated.· recommended for women with preterm prelabour rupture of membranes and no clinical signs of infection.
- *not* recommended for women with chorioamnionitis who are likely to give birth preterm
- *not* recommended for women undergoing planned caesarean section at 34 weeks 0 days to 36 weeks 6 days
- recommended for women with hypertensive disorders in pregnancy, growth restricted fetus, pregestational and gestational diabetes who have a high likelihood of preterm birth
- Either intramuscular (IM) dexamethasone or IM betamethasone (total 24 mg in divided doses) is recommended as the antenatal corticosteroid of choice.
- Dexamethasone has an advantage over betamethasone in terms of lower cost and wider availability.
- Four doses of dexamethasone 6 mg IM 12 hours apart or two doses of betamethasone

12 mg IM 24 hours apart are the preferred choice BUT when deciding on the dosing frequency, consideration should be given to the likely timing of preterm birth to ensure that the woman completes the total dose of steroid or receives a substantial amount of the total dose before birth.

- A single repeat course of antenatal corticosteroids is recommended for women who have received a single course of antenatal corticosteroids at least 7 days prior and, on clinical assessment, have a high likelihood of giving birth preterm in the next 7 days.

2. Tocolytics

Tocolytic drugs (drugs that inhibit contractions of the uterus) can be used to temporarily arrest preterm labour and delay birth. Tocolysis might have an effect on perinatal outcomes by a) allowing more time in-utero for fetal maturation, b) allowing time for administration of antenatal corticosteroids for fetal lung maturation and other newborn health benefits, and/or c) facilitating in-utero transfer of the woman to a higher level of care (for care of the woman, and particularly for the management of the preterm newborn)[9] .In the 2015 WHO guideline, tocolytic treatments (acute and maintenance treatments) were not recommended for women at risk of imminent preterm birth.[10]

WHO recommendation on tocolytic therapy for improving preterm birth outcomes. (updated 2022.)[11]

Nifedipine is recommended for acute and maintenance tocolytic therapy for women with a high likelihood of preterm birth for the purpose of improving newborn outcomes, when the following conditions are met:

1 Spontaneous preterm labour is suspected or diagnosed

2 Gestational age is accurately assessed to be between 24 weeks 0 days and 33 weeks 6 days

3 There is no evidence that tocolysis is contraindicated (such as vaginal bleeding, placental abruption or intrauterine infection)

4 It permits a single course of antenatal corticosteroids to be administered and/or enables transfer of the mother to a facility where, upon birth, the preterm infant can receive adequate care (including resuscitation, kangaroo mother care, thermal care, feeding support, infection treatment and respiratory support including continuous positive airway pressure as needed

5 Adequate birth care is available

Nifedipine is considered to be the preferred option as the balance of benefits and harms, cost, acceptability and feasibility is superior to other tocolytic agents.

Maintenance therapy is defined as the use of a tocolytic after the first 48 hours with the same tocolytic or an alternative tocolytic

Based on the available trials, the commonly used regimen for nifedipine (immediate release) is an initial oral dose of 20 mg followed by 10 mg every 6 hours for 3–7 days or until transfer is completed, whichever comes first

Combination therapy does not have more benefits than monotherapy options, and therefore monotherapy is recommended

3. Magnesium Sulfate for fetal protection against neurological complications[10]

- The use of magnesium sulfate is strongly recommended for women at risk of imminent preterm birth before 32 weeks of gestation for prevention of cerebral palsy in the infant and child.
- Magnesium sulfate for neuroprotection should only be given if preterm birth is likely within the next 24 hours.

- Applicable to women with either singleton or multiple pregnancy

4. Antibiotics

WHO recommendations on interventions to improve preterm birth outcomes (2015)[10]

- Routine antibiotic administration is not recommended for women in preterm labour with intact amniotic membranes and no clinical signs of infection (WHO, 2015).
- It is important that women with any diagnostic or clinical signs of infection are treated accordingly with antibiotics.
- Antibiotic administration is recommended for women with preterm prelabour rupture of membranes. (PPROM)
- Women should be monitored for signs of clinical chorioamnionitis.
- Erythromycin is recommended as the antibiotic of choice for prophylaxis in women with preterm prelabour rupture of membranes (conditional recommendation)
- erythromycin lessens the risk of necrotizing enterocolitis (NEC) in the newborn compared to co-amoxiclav.
- oral erythromycin 250 mg four times a day for 10 days (or until delivery) should be used
- Penicillins (excluding amoxiclav) can be used where erythromycin is not available.

5. Mode of delivery (vaginal Vs caesarean)

The optimal mode of delivery for women in preterm labour is controversial. It is advisable to take individualized decision for every patient, considering the merits and demerits of both vaginal and caesarean delivery and in consultation with parents and neonatologists. Caesarean delivery claims for reduced birth trauma and neonatal death whereas it may increase the maternal morbidity and sometimes neonatal morbidity. Poorly formed thick lower segment may be a problem in Caesarean delivery whereas vaginal delivery may help by expelling fluid from chest and facilitating lung expansion

WHO recommendations on interventions to improve preterm birth outcomes (2015)(10)

Routine delivery by caesarean section for the purpose of improving preterm newborn outcomes is not recommended, regardless of cephalic or breech presentation

Caesarean section should only be performed for obstetric indications.

6. Conduction of delivery

If at all tocolysis fails and preterm birth is imminent, the delivery should be conducted with utmost care with proper intrapartum management.

First stage

- Minimum Per vaginal examinations
- Preserve membranes as long as possible
- adequate hydration
- electronic fetal monitoring if possible
- avoid hyperstimulation with oxytocics

Second stage

- Neonatologist should be available at the time of delivery
- Episiotomy may be needed to avoid undue head compression
- No instrumental delivery as far as possible. If required, outlet forceps may be used. Ventouse is contraindicated.
- If preterm baby needs to be moved away from mother for resuscitation or there is significant maternal bleeding, cord is clamped immediately. Otherwise, delayed cord

clamping should be done.

- Cord should be kept long as exchange transfusion may be needed.

Third stage

There are chances of delayed separation and delivery of placenta in preterm labour, so the third stage should be managed with patience and active management of third stage of labour should be done.

7. Thermal care of preterm newborn[10]

- Kangaroo mother care is strongly recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in healthcare facilities as soon as the newborns are clinically stable
- The definition of Kangaroo mother care (KMC) is care of preterm infants carried skin-to-skin with the mother. Its key features include early, continuous and prolonged skin to-skin contact between the mother and the baby, and exclusive breastfeeding (ideally) or feeding with breastmilk.
- Unstable newborns weighing 2000 g or less at birth, or stable newborns weighing less than 2000 g who cannot be given Kangaroo mother care, should be cared for in a thermo-neutral environment either under radiant warmers or in incubators.

8. Continuous Positive airway pressure in RDS and oxygen therapy[10]

- Continuous positive airway pressure therapy is strongly recommended for the treatment of preterm newborns with respiratory distress syndrome, as soon as diagnosis is made.
- If oxygen therapy is to be delivered with CPAP, low concentrations of blended oxygen should be used and titrated upwards to maintain targeted blood oxygen saturation levels. Where blenders are not available, air should be used; 100% oxygen should never be used because of demonstrable harms
- During ventilation of preterm babies born at or before 32 weeks of gestation, it is recommended to start oxygen therapy with 30% oxygen or air (if blended oxygen is not available), rather than with 100% oxygen.

9. Surfactant administration for newborns with RDS[10]

The benefits of the intervention in reducing mortality clearly outweigh the possible increased risk of pulmonary haemorrhage. In high-income countries, surfactant treatment may reduce overall hospital costs, but this might not be the case in low- and middle-income countries (LMICs). In many LMICs, resource implications (both human and material) may make the use of surfactant a lower priority.

- Surfactant replacement therapy is recommended for intubated and ventilated newborns with respiratory distress syndrome (within first 2 hours)
- Either animal-derived or protein-containing synthetic surfactants can be used for surfactant replacement therapy in ventilated preterm newborns with respiratory distress syndrome.
- Administration of surfactant before the onset of respiratory distress syndrome (prophylactic administration) in preterm newborns is not recommended.

10. Family integrated care : to involve parents in the daily care of their baby, such as feeding, changing, and bathing

11. Breast milk : to provide optimal nutrition and immunity for the baby.

12. Neonatal follow-up : to monitor the growth and development of the baby after discharge from hospital.

13. **Parental mental health support:** to offer emotional and psychological support for parents who may experience stress, anxiety, or depression

Comparative summary of **guidelines** from the National Institute for Health and Care Excellence (NICE), the World Health Organization, the American College of Obstetricians and Gynecologists, the New South Wales Government, and the European Association of Perinatal Medicine (EAPM) on preterm birth.

1. There is a consensus among the reviewed guidelines that the diagnosis of preterm labour (PTL) is based on clinical criteria, physical examination, measurement of cervical length (CL) with transvaginal ultrasound (TVS) and use of biomarkers, although there is disagreement on the first-line diagnostic test.
2. The NICE and the EAPM are in favour of TVS CL measurement, whereas the New South Wales Government mentions that fetal fibronectin testing is the mainstay for PTL diagnosis.
3. Moreover, there is consistency among the guidelines regarding the importance of treating PTL up to 34 weeks of gestation, to delay delivery for 48 hours, for the administration of antenatal corticosteroids, magnesium sulfate, and in utero transfer to higher care facility, although several discrepancies exist regarding the tocolytic drugs of choice and the administration of corticosteroids and magnesium sulfate after 34 and 30 gestational weeks, respectively.
4. Routine caesarean delivery in case of PTL is unanimously not recommended.
5. Finally, the NICE, the American College of Obstetricians and Gynecologists, and the EAPM highlight the significance of screening for PTL by TVUS CL measurement between 16 and 24 weeks of gestation and suggest the use of either vaginal progesterone or cervical cerclage for the prevention of PTL, based on specific indications. Cervical pessary is not recommended as a preventive measure.

Key Points

- Preterm birth is defined as a baby born prior to 37 completed weeks of gestation.
- Globally, prematurity is the leading cause of death in children under the age of 5 years.
- Infants born preterm remain vulnerable to many complications including immediate and remote complications.
- Most preterm births happen spontaneously, but some are due to medical reasons such as infections, or other pregnancy complications that require early induction of labour or caesarean birth.
- Preterm births can be prevented and outcome can be improved by focussing on all levels of prevention (primary, secondary and tertiary).
- Antenatal corticosteroid therapy is strongly recommended for women with a high likelihood of preterm birth from 24 weeks to 34 weeks of gestation by all bodies worldwide.
- Nifedipine is the first line tocolytic drug used to suppress preterm labour
- Uterus is the best incubator and transporter. days gained inside uterus improve neonatal outcome. In utero transfer is better than transfer of preterm newborn after birth.
- Caesarean section should only be performed for obstetric indications
- Labour should be conducted in a setting with neonatal facilities.
- Synthetic surfactant is now available. Administration to premature neonate when indicated, decreases neonatal morbidity & mortality, but it is costly.
- Involvement of family in newborn care, decision making and mental support to parents can prove beneficial in improving the preterm birth outcome.

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> Females are the most beautiful, gorgeous creatures in the whole world. And I think that we are gorgeous no matter what size we are.
>
> **– Alicia Keys, Musical Artist**

Maternal Care Bundle on PPH

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Definition

Postpartum hemorrhage (PPH) accounts for two-thirds of cases of obstetric hemorrhage and for approximately one-quarter of all maternal deaths worldwide.

Postpartum hemorrhage (PPH) is traditionally defined as blood loss exceeding 500 milliliters (mL) following vaginal birth and 1000 mL following cesarean delivery. There is no universally accepted definition of PPH. Definitions vary, however, and diagnosis of PPH is subjective and often based on inaccurate estimates of blood loss.

Classification of Pph?

PPH can be

Minor (500–1000 ml)

Major (more than 1000 ml)

Moderate (1000–2000 ml)

Severe (more than 2000 ml).

Factors Associated with Postpartum Hemorrhage

In the bivariable logistic regression analysis ....Age of the woman, ANC follow-up, Previous history of PPH, Mode of delivery, Duration of labor, Delivery with episiotomy, and History of uterine atony were associated with the outcome variable.

However, in multivariable logistic regression analysis....Duration of labor, Uterine atony, and Mode of delivery (cesarean section and instrumental vaginal delivery) were factors significantly associated with PPH.

Causes of PPH

1. UTERINE...Uterine Atony..is the most common cause of PPH. It happens when the muscles in your uterus don't contract (tighten) well after birth. Uterine contractions after birth help stop bleeding from the place in the uterus where the placenta breaks away.

   As a way of remembering the causes of PPH, several sources have suggested using the "4 T' s" as a mnemonic: tone, tissue, trauma, and thrombosis.

2. NON-UTERINE...Retained Placenta, Placenta Accreta, Increta and Percreta, Tears Cervical, Vaginal, Urethral etc, Associated co-morbidities.

Prompt Diagnosis

Rule of 30 refers to a 30% fall in hematocrit, a 30 mmHg fall in systolic blood pressure, an increase by 30 beats/min of pulse rate, a 30% fall of hemoglobin (approximately 3 g/dl), and an approximate blood loss of 30% of normal (70 ml/kg in adults; 100 ml/kg throughout pregnancy).

Prevention and Management

The Golden hour refers to the first 60 minutes from the time of Recognition of PPH.

The treatment of patients with PPH has 2 major components:

1. Resuscitation and management of obstetric hemorrhage and, possibly, hypovolemic shock
2. Identification and management of the underlying causes of the hemorrhage.

Components of Action Bundle of PPH Are

- **Readiness**
  1. Haemorrhagic cart with supplies, check list and instructions cards
  2. Immediate access to hemorrhage medications
  3. Response team to call when help is needed
  4. Massive and emergency release transfusions protocols
  5. Unit education and drills
- **Recognition and Prevention**
  1. Assessment of Risk
  2. Measurement of cumulative blood loss
  3. Active management of third stage of labour
- **Response and Reporting**
  1. Uterotonics medications
  2. Isotonic crystalloids
  3. Tranexemic acid
  4. Uterine massage
  5. Manual compression of Uterine/Aortic Artery
  6. Uterine Balloon Tamponade
  7. Non pneumatic antishock garments. The non-pneumatic anti shock garment provides lower body compression to increase cardiac function in postpartum hemorrhage, and it reduces maternal mortality by nearly one-half.
  8. Support program for patients, families and staff
- **Reporting and Systems Learning**
  1. Establish culture of huddles for high risk patients
  2. Multidisciplinary review of serious haemorrhages
  3. Outcomes monitoring and process metrics

Procedures Used In PPH Management

- Manual removal of the placenta
- Manual removal of clots
- Uterine tamponade
- Uterine artery embolization
- Laceration repair is indicated when PPH is a result of genital tract trauma.

Who Guidelines for Prevention of PPH?

In settings where skilled health personnel are not present to administer injectable uterotonics, the administration of misoprostol (either 400 µg or 600 µg PO) by community health care workers and lay health workers is recommended for the prevention of PPH.

Who Recommendations on PPH

- In 2012 WHO published the first PPH recommendations on prevention and treatment of PPH

- End 2016 Living Guidelines approach to prioritizing, updating and developing individual WHO MPH recommendations
- In 2017, in response to new evidence (WOMAN trial), WHO updated the recommendation on TXA for PPH treatment. Early use of intravenous tranexamic acid (within 3 hours of birth) in addition to standard care is recommended for women with clinically diagnosed postpartum haemorrhage following VD or CS TXA administration should be considered as part of the standard PPH treatment package.
- In 2018, in light of the new evidence (WHO CHAMPION trial), the recommendations on uterotonics for PPH prevention were updated.
    1. The use of an effective uterotonic for the prevention of PPH during the third stage of labour is recommended for all births.
    2. In settings where multiple uterotonic options are available, oxytocin (10 IU, IM/IV) is the recommended uterotonic agent for the prevention of PPH for all births.
    3. In settings where oxytocin is unavailable (or its quality cannot be guaranteed), the use of other injectable uterotonics (carbetocin, or if appropriate ergometrine/methylergo or oxytocin and ergometrine fixed-dose combination) or oral misoprostol is recommended.
    4. In settings where skilled health personnel are not present to administer injectable uterotonics, the administration of misoprostol (either 400 µg or 600 µg PO) by community health care workers and lay health workers is recommended for the prevention of PPH.
- In 2020, four recommendations were updated:
    1. UBT for the treatment of PPH
    2. Umbilical vein injection of oxytocin for the treatment of retained placenta
    3. Routes of oxytocin administration for the prevention of PPH after vaginal birth
    4. Advance misoprostol distribution to pregnant women for prevention of PPH

Social Activities

स्त्री एवम् प्रसूति रोग विभाग, महारानी लक्ष्मी बाई मेडिकल कॉलेज, झांसी एवं नॉर्थ इंडिया गायनोकोलाजिस्ट फोरम के तत्वावधान में दिनांक 15 सितंबर विषय : 'एनीमिया मुक्त भारत' पर एक सेमिनार का आयोजन किया गया।

नॉर्थ इंडिया गायनोकोलाजिस्ट फोरम के तत्वावधान में सर्वाइकल कैंसर मुक्त भारत शिविर का आयोजन डॉ. दीप्ति चतुर्वेदी के द्वारा चतुर्वेदी कैंसर हास्पिटल, गोरखपुर में

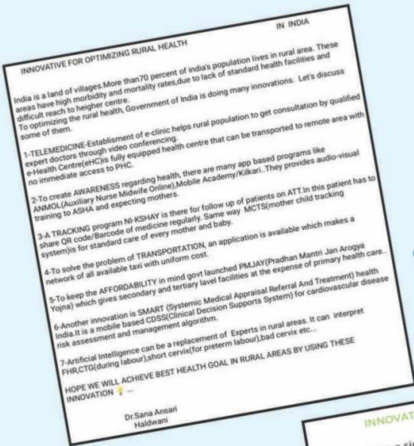
Anemia, nutrition & HPV talk, talk on personal hygiene at Shishu Mandir, Gorakhpur Rapti Branch

An awareness session under NIGF with Harobgyn Udaan Project on all about puberty and prevention of cervical cancer awareness with girls of Olympus School Gurgaon in association with HOPE NGO

नॉर्थ इंडिया गायनोकोलॉसिस्ट फोरम वार्षिक आयोजन

02 October 2022 - Essay Writing Competition

Theme : **"Innovative for Optimizing Rural Health in India"**



INNOVATIVE FOR OPTIMIZING RURAL HEALTH IN INDIA

India is a land of villages.More than70 percent of india's population lives in rural area. These areas have high morbidity and mortality rates,due to lack of standard health facilities and difficult reach to heigher centre.
To optimizing the rural health, Government of India is doing many innovations. Let's discuss some of them.

1-TELEMEDICINE-Establisment of e-clinic helps rural population to get consultation by qualified expert doctors through video conferencing.
e-Health Centre(eHC)is fully equipped health centre that can be transported to remote area with no immediate access to PHC.

2-To create AWARENESS regarding health, there are many app based programs like ANMOL(Auxiliary Nurse Midwife Online),Mobile Academy/Kilkari..They provides audio-visual training to ASHA and expecting mothers.

3-A TRACKING program NI-KSHAY is there for follow up of patients on ATT.In this patient has to share QR code/Barcode of medicine regularly. Same way MCTS(mother child tracking system)is for standard care of every mother and baby.

4-To solve the problem of TRANSPORTATION, an application is available which makes a network of all available taxi with uniform cost.

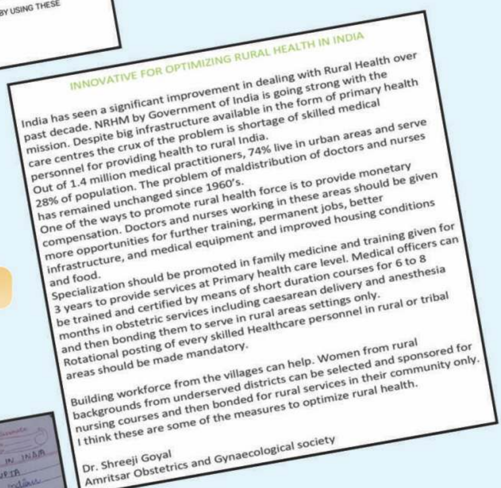
5-To keep the AFFORDABILITY in mind govt launched PMJAY(Pradhan Mantri Jan Arogya Yojna) which gives secondary and tertiary lavel facilities at the expense of primary health care..

6-Another innovation is SMART (Systemic Medical Appraisal Referral And Treatment) health India.It is a mobile based CDSS(Clinical Decision Supports System) for cardiovascular disease risk assessment and management algorithm.

7-Artificial Intelligence can be a replacement of Experts in rural areas. It can interpret FHR,CTG(during labour),short cervix(for preterm labour),bad cervix etc...

HOPE WE WILL ACHIEVE BEST HEALTH GOAL IN RURAL AREAS BY USING THESE INNOVATION 💡 ...

Dr.Sana Ansari
Haldwani

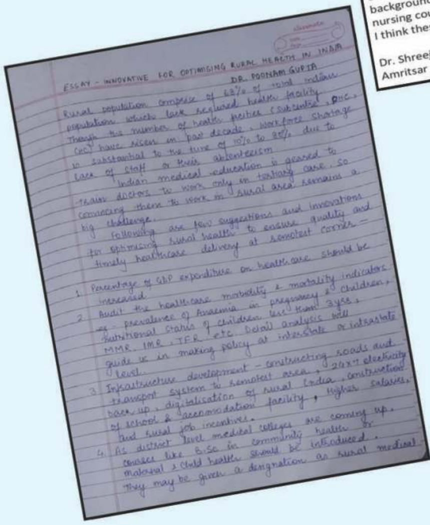


INNOVATIVE FOR OPTIMIZING RURAL HEALTH IN INDIA

India has seen a significant improvement in dealing with Rural Health over past decade. NRHM by Government of India is going strong with the mission. Despite big infrastructure available in the form of primary health care centres the crux of the problem is shortage of skilled medical personnel for providing health to rural India.
Out of 1.4 million medical practitioners, 74% live in urban areas and serve 28% of population. The problem of maldistribution of doctors and nurses has remained unchanged since 1960's.
One of the ways to promote rural health force is to provide monetary compensation. Doctors and nurses working in these areas should be given more opportunities for further training, permanent jobs, better infrastructure, and medical equipment and improved housing conditions and food.
Specialization should be promoted in family medicine and training given for 3 years to provide services at Primary health care level. Medical officers can be trained and certified by means of short duration courses for 6 to 8 months in obstetric services including caesarean delivery and anesthesia and then bonding them to serve in rural areas settings only.
Rotational posting of every skilled Healthcare personnel in rural or tribal areas should be made mandatory.

Building workforce from the villages can help. Women from rural backgrounds from underserved districts can be selected and sponsored for nursing courses and then bonded for rural services in their community only.
I think these are some of the measures to optimize rural health.

Dr. Shreeji Goyal
Amritsar Obstetrics and Gynaecological society



ESSAY - INNOVATIVE FOR OPTIMISING RURAL HEALTH IN INDIA
DR. POONAM GUPTA

Rural population comprise of 68% of total indian population which lack required health facility. Though the number of health facilities (subcentre, PHC, CHC) have risen in past decade, workforce shortage is substantial to the tune of 10% to 80% due to lack of staff or their absenteeism.
Indian medical education is geared to train doctors to work only in tertiary care. So convincing them to work in rural area remains a big challenge.
Following are few suggestions and innovations for optimising rural health to ensure quality and timely healthcare delivery at remotest corner —

1. Percentage of GDP expenditure on health care should be increased.
2. Audit the health care morbidity & mortality indicators, prevalence of Anaemia in pregnancy & children, nutritional status of children less than 3 yrs, MMR, IMR, TFR etc. Detail analysis will guide us in making policy at interstate or intrastate level.
3. Infrastructure development - constructing roads and transport system to remotest area, 24×7 electricity back up, digitalisation of rural India, construction of school & accomodation facility, higher salaries and rural job incentives.
4. As district level medical colleges are coming up, courses like B.Sc in community health for maternal & child health should be introduced. They may be given a designation as rural medical

24 December 2022 - Poster Presentation Competition

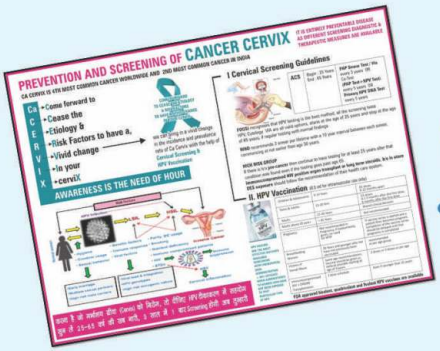
Theme : **"Public Awareness at Prevention and Screening of Cancer Cervix"**

1ST WINNER

Dr. Anita Gutam, Kanpur

2ND WINNER

Dr. Aaliya Rashid, Jammu



2ND WINNER

Pooja Dadwal, Ferozepur

3RD WINNER

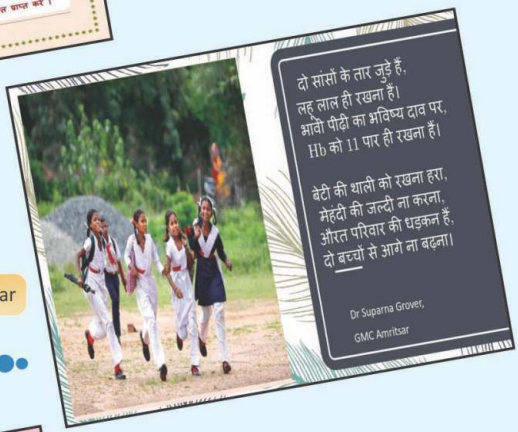
Dr. Atindriya Manhas, Jammu

26 January 2023 - Poem Competition

Theme : **"Anemia Mukt Bharat"**

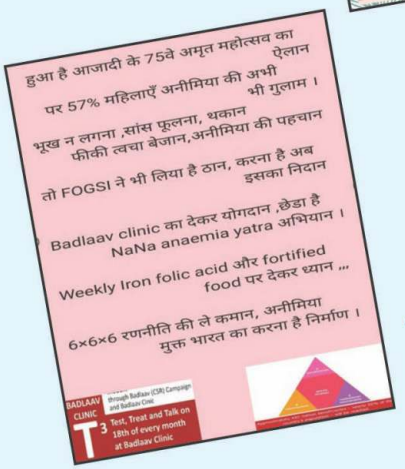
1ST WINNER

Dr. Pratibha Aggarwal, Gurgaoan



2ND WINNER

Dr. Suparna Grover, Amritsar



3RD WINNER

Dr. Pooja Dadwal, Ferozepur

06 March 2023 - Slogan Writing Competition

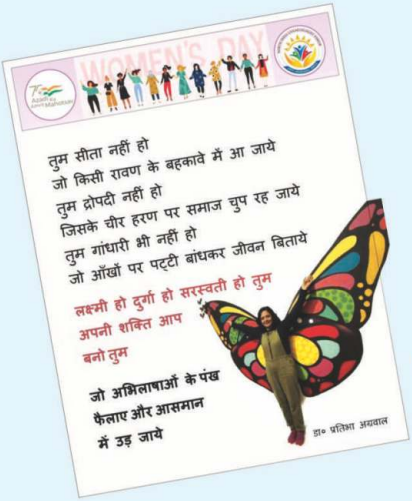
Theme : **"Educate, Empower, Energetic Women"**

1ST WINNER

Dr. Pooja Dadwal, Ferozepur

2ND WINNER

Dr. Natasha Gupta

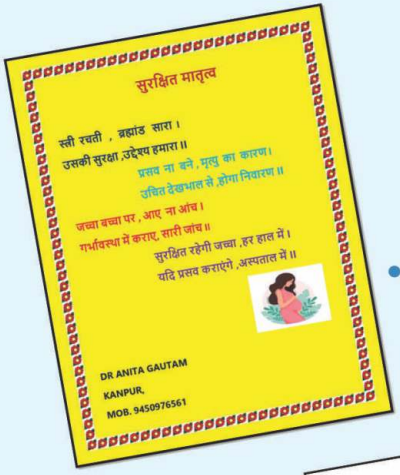


3RD WINNER

Dr. Pratibha Aggarwal

11 April 2023 - Poetry Writing Competition

Theme : **"Safe Motherhood our Commitment & Resolutions"**



सुरक्षित मातृत्व

स्त्री रचती , ब्रह्मांड सारा ।
उसकी सुरक्षा ,उद्देश्य हमारा ॥
प्रसव ना बने , मृत्यु का कारण।
उचित देखभाल से ,होगा निवारण ॥
जच्चा बच्चा पर , आए ना आंच ।
गर्भावस्था में कराए, सारी जांच ॥
सुरक्षित रहेगी जच्चा ,हर हाल में ।
यदि प्रसव कराएंगे ,अस्पताल में ॥

DR ANITA GAUTAM
KANPUR,
MOB. 9450976561

1ST WINNER

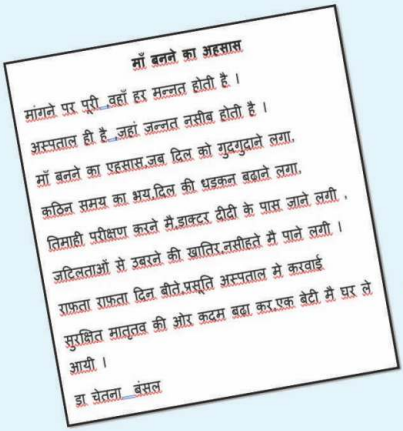
Dr. Anita Gautam, Kanpur

2ND WINNER

Dr. Yukti Bhardwaj, New Delhi

I pledge to save every mother as..
every mother counts..
with safe motherhood programs,
the health of nation mounts..!
Providing good pre-conception care,
optimisimg every disease that hounds,
Good ante-natal, intra-natal, post and per-natal care
improves MMR by leaps and bounds....!!!

Dr. Yukti Bhardwaj
FNB Reproductive medicine,
SGRH, New Delhi



माँ बनने का अहसास

मांगने पर पूरी वहाँ हर मन्नत होती है ।
अस्पताल ही है जहां जन्नत नसीब होती है ।
माँ बनने का एहसास,जब दिल को गुदगुदाने लगा,
कठिन समय का भय,दिल की धड़कन बढ़ाने लगा,
तिमाही परीक्षण करने मैं डाक्टर दीदी के पास जाने लगी ,
जटिलताओं से उबरने की खातिर,नसीहतें मैं पाने लगी ।
राफ़ता राफ़ता दिन बीते,प्रसूति अस्पताल मे करवाई
सुरक्षित मातृत्व की ओर कदम बढ़ा कर,एक बेटी मैं घर ले आयी ।

डा चेतना बंसल

3RD WINNER

Dr. Chetna Bansal