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THEME: PROMOTING A RETURN TO BREAST FEEDING

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FROM THE PRESIDENT'S PEN

Dr. (Prof.) Mala Srivastava
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Warm Greetings to Everyone!

It is my great pleasure and privilege to thank our editorial team who is releasing this bulletin on a very important topic on "**Promoting a return to Breast Feeding**".

We present this bulletin dedicated to breast feeding. As clinicians, we understand and promote exclusive breast feeding for initial six months of life for infants. It is not only good for the health of the new born, but also an excellent endeavour for the mothers.

The breast feeding builds a great emotional bonding between the mother and the baby, which lasts life long. It protects the newborn from various life threatening diseases and gives important nutrients and first class essential proteins to the new born which is so necessary for the growth of the baby. The breast feeding is excellent for mother's health as well. It protects the mothers from breast cancers and ovarian cancers.

This bulletin has contribution from eminent teachers and clinicians. It enriches us on topics like formula vs breast milk, WHO's BFHI, as well as breast milk banking. It also highlights the safety of common medications together with post partum contraception.

Hope this bulletin adds knowledge and exclusive information to our members. We shall be really happy if it enriches attitude of our members towards breast feeding and benefits them in their day to day clinical practice.

Long Live NARCHI Delhi Chapter !!

FROM THE VICE PRESIDENT'S PEN

Dr. Chandra Mansukhani
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Vice President of NARCHI Delhi Chapter
Sir Ganga Ram Hospital , New Delhi

Dear Members of NARCHI Delhi Chapter

Warm Greetings to Everyone!

As we continue to prioritize the health and well-being of our families, I want to take a moment to highlight the profound benefits of breastfeeding. This natural practice not only fosters a strong bond between mother and child but also offers numerous health advantages for both.

Breastfeeding provides essential nutrients that are crucial for a baby's growth and development, especially developing countries in India. It strengthens their immune system, reducing the risk of infections and chronic conditions later in life. For mothers, breastfeeding can promote faster recovery after childbirth and may lower the risk of certain diseases.

In addition to health benefits, breastfeeding is also economical and environmentally friendly. It reduces the need for formula and packaging, contributing to a more sustainable future for low resource countries. This bulletin has covered all aspects of breast feeding beautifully.

I encourage everyone to support breastfeeding initiatives within our community, whether through education, access to resources, or creating a supportive environment for nursing mothers. Together, we can ensure that every mother and child has the opportunity to thrive.

Thank you for your commitment to nurturing a healthier future for our families.

Thanks & Best Wishes

Long Live NARCHI Delhi Chapter!!

FROM THE SECRETARY'S DESK

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Greetings to all members of the association!

Hope you and your families are safe and doing well!

It's an honour to be writing this message as Secretary NARCHI-Delhi as we are about to host our 30th Annual Conference with of NARCHI Delhi at Hotel Lalit from 4th – 6th October, 2024. The Theme of "Be Aware – Adopt-Adhere to the Protocols".

The conference is going to be a 'academic extravaganza par excellence' with senior faculty from Pan India sharing their experiences and knowledge with us. Under the guidance of our patrons and advisors, our team with Dr. Mala Srivastava as President, Dr. Chandra Mansukhani as Vice President and Dr. Geeta Mediratta as Scientific Chair and our entire faculty are preparing to welcome you all for this conference & associated 12 workshops. A mind tickling quiz, poster competition, free paper presentations, role plays, skits, drills and a multiple of interesting events to choose form.

The theme of this quarter's NARCHI bulletin is "Promoting A Return to Breast Feeding"

Our Editorial team members Dr Mamta Dagar, Dr Runa Satwik and Dr. Sakshi Nayar have worked very hard, putting their heart and soul into it, using innovative ideas and compiling great academic write-ups for the benefit of all members.

"Arise, Awake and stop not till the goal is reached" Swami Vivekanand.

Warm Regards,

Dr Kanika Jain

Secretary NARCHI-Delhi chapter

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Dear readers,

As we collectively move into a world of safe motherhood, monitored births and fewer perinatal deaths, we paradoxically witness, alarmingly low trends of exclusive breastfeding in infants. A study from Vellore informs us that the rates of exclusive breast feeding at six months is dismally low at 2%. Another one from South India estimates an 11% prevalence of exclusive breast feeding rates at six months. These low prevalence rates occur despite the World Health Organization's recognition of exclusive breastfeeding potential in reducing infant mortality and improving long term health. WHO estimates that exclusive breastfeeding worldwide can contribute to a reduction of under-five child deaths by approximately 8,20,000 per year.

In a low income country such as India that can benefit from this natural, zero-cost practise, these trends remain worrisome.

Why then have we allowed the practise of exclusive bread feeding, that has been such a boon to mankind, to wither away?

Is this due to a delayed feeding initiation as seen after Cesarean births, the numbers of which are steadily increasing, or is this due to delivery of an increasing number of high-risk pregnancies, necessitating neonatal nursery stay which inevitably breaks the baby-mother unit at a crucial time in breast feeding initiation or whether this is simply apathy on the part of medical health fraternity that care less and less to implement the ten rules of BFHI (Baby Friendly Hospital Initiative).

This special issue is dedicated to Breast feeding. This issue revisits the benefits of breast feeding to the baby and the mother. It looks at the hurdles that mothers and families face in continued feeding. As also at the solutions to overcoming these hurdles.

An often faced dilemma by breast feeding mothers is a choice of contraception that can be safely used without affecting breast milk volume. Or for that matter the concern that mothers have when they are prescribed medication for common ailments. The last two chapters address these issues.

Through this issue we hope to inculcate an understanding of why exclusive breast feeding needs attention and promotion with an equal rigour that we put in saving mothers and babies.

Sincerely,

The editorial team

Mamta Dagar, Ruma Satwik, Sakshi Nayar

Exclusive Breastfeeding Trends in India: A Comprehensive Overview

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Background

Breastfeeding provides optimal nutrition for newborns and fosters healthy growth and development, making it the ideal feeding method. Despite extensive research, promotion, and established guidelines, achieving this standard remains a challenge. Globally, the World Health Assembly has established targets for exclusive breastfeeding rates, which India has successfully met. While this achievement is commendable, ongoing efforts are essential to further improve and promote breastfeeding practice. India's rich cultural diversity results in a wide range of breastfeeding practices and beliefs across different regions. This variability contributes to unequal rates of exclusive breastfeeding, influenced by factors such as religion, social class, maternal education, geographic location, and the mother's employment status. Our review hence highlights such breastfeeding trends in India

Introduction

The WHO and UNICEF recommends that 'infants should be fed exclusively with breast milk for the initial six months of their lives and start receiving other food concurrently when they are about six months old while breast feeding should continue until the child is two years old'.[1,2] To be more specific, the WHO defines 'exclusive breastfeeding' where the baby only takes breast milk in the course of twenty-four hours and not any other food or drink in the form of liquids, semisolid foods or breast milk substitutes except ORS, medications, and multi vitamins. WHO also stated that exclusive breastfeeding worldwide can contribute to "reduction of under-five child deaths by approximately 820000 per year".[3] Although there is ample evidence on the benefits of exclusive breastfeeding and various strategies have been formulated sequentially along with sustained interventions with the purpose of promoting and supporting exclusive breastfeeding, breastfeeding rates are surprisingly low with significant variability between countries and within each country.

Data trends on exclusive breastfeeding

"In the WHO's Global Breastfeeding Indicator's report 2018, the rate of exclusive breastfeeding is 40% worldwide "[3]. In contrast, a survey conducted by UNICEF in 2019 estimated that worldwide prevalence of exclusive breastfeeding was 44%, while in the Asian countries this indicator was higher and was 57 %.[4] Even in the US, where infant formula has been standard feeding practice for decades, breastfeeding rates have climbed in the past decade though they remain relatively low at 16%.

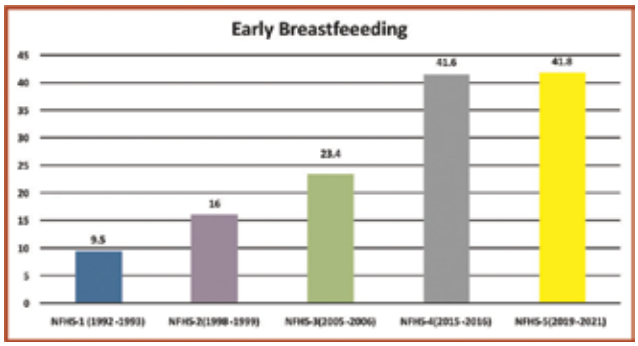
Following the decline in breastfeeding rates during the 1970s and 1980s, there has been a modest improvement in breastfeeding practices in India. Examination of data from the NFHS 2015 to 2016 (NFHS-4) and 2019-21 (NFHS 5) accentuates a rise in early initiation of breastfeeding and the continuation of exclusive breastfeeding within the initial six months.[5]

Data on breastfeeding practices in India

The NFHS -5 data revealed that 88.6% women deliver in hospitals. 41.8% are

able to begin breastfeeding within an hour of birth. This has increased from 9.5% in NFHS 1 (1992-93). However, in 18 states and union territories the rate of early breastfeeding has declined compared to NFHS-4 data (2015-16). Comparing NFHS-4 data with 5, early breastfeeding is almost stagnant. This is a matter of concern and merits early sustained adressal.

Exclusive breastfeeding in infants <6 months of age has increased from 54.9% in NFHS-4 to 63.7% in NFHS-5. Pre-lacteal feeding has gone down from 57.2% in NFHS-3 to 21.1% in NFHS 4 though in some states, this still remains high (E.g. Uttar Pradesh, 41.5%). A newer trend of increased bottlefeeding is noticed. According to NFHS 4, every 5th baby is bottle fed.[5]



(Image source- www.bfhi-india.in)

As per the NFHS-5 survey, Early breastfeeding practices in Chhattisgarh (71%), Haryana (69.5%), and Jharkhand (61.7%) were higher when compared to the overall proportion of 43% for India, while the practice was lower in Meghalaya (23%), Manipur (24.5%), West Bengal (25.4%) and Uttarakhand (25.5%). In the NHFS-4 survey, EBF practices in Tripura (58.5%), Chhattisgarh (47.2%) and Himachal Pradesh (43.4%) were higher compared to the overall EBF practice of 31.3% for India, with the same being lower for Meghalaya (15.1%), Sikkim (17.5%), Karnataka (22.9%), and Uttar Pradesh (23.4%)

At 2 months age, the rate of exclusive breastfeeding was 66.7% in the NFHS-4 survey, which increased to 70.4% (2770/3938; 95% CI 68.9, 71.8) in the NFHS-5 survey. By 4 months, the proportion of exclusively breastfed infants was 61.5% (2443/3972; 95% CI 60, 63) in the NFHS-5 survey, up from 50.2% (1958/3904; 95% CI 48.6, 51.7) in the NFHS-4 survey. At 6 months, the NFHS-5 survey showed a higher exclusive breastfeeding rate of 43% (1657/3853; 95% CI 41.4, 44.6), compared to 31.3% (1280/4095; 95% CI 29.9, 32.7) in the NFHS-4 survey.

According to the last three National Family Health Survey (NFHS) reports, exclusive breastfeeding (EBF) rates among Indian infants under 6 months have shown a steady increase, rising from 46% in 2005-06 to 55% in 2015-16, and further to 65% in 2019-21.[6,7,8]

However, a study conducted in urban Vellore, southern India, found a starkly contrasting EBF rate of less than 2% at 6 months [9,10]. Another study pooling data from three birth cohorts in south India between 2002 and 2009 reported an EBF prevalence of 11.4% for the first 6 months.[9]

Factors affecting exclusive breastfeeding practices

A nationwide study examining data from the 1992 and 2006 India Demographic and Health Surveys discovered the factors influencing exclusive breastfeeding (EBF) vary over time. Non-compliance with EBF has been associated with living in urban areas, having shorter intervals between births, and being from higher wealth brackets.[11]

Another study revealed significant differences in the prevalence of exclusive breastfeeding (EBF) and other childhood feeding practices across various regions of India, reflecting the country's socioeconomic, religious, cultural, and geographic diversity. Mothers in Southern India had the highest rates of EBF, whereas those in the North-East had the lowest. The prevalence of EBF declined with the age of the infant, with a more rapid decrease observed in the South (43.7% at 5 months) compared to the North-East (54.0% at 5 months).[12] These suboptimal EBF figures could be attributed to inadequate healthcare financing, planning and strategic actions on infant feeding. At the community level in India, widespread traditional practices involving the early introduction of water and other water-based fluids before six months of age have also impeded efforts to promote exclusive breastfeeding.

The National Family Health Surveys (NFHS) 4 and 5 identified factors that reduce the likelihood of exclusive breastfeeding for six months. These factors were, younger mothers (under 24 years), Low birth weight infants (under 2000g), Higher birth order (three or more) and Delayed breastfeeding initiation (more than one hour after birth). Notably, factors such as place of residence, wealth index, and infant gender did not affect exclusive breastfeeding rates for six months.[13]

International strategies to promote breastfeeding

The "Global Strategy for Infant and Young Child Feeding", the collaborative effort between the

World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) established a framework for action. The World Health Assembly set ambitious targets in 2012, including "boosting exclusive breastfeeding rates to at least 50% by 2025."[14]

To combat the unethical marketing of infant formula, the World Health Assembly adopted the "International Code of Marketing of Breastmilk Substitutes in 1981." This landmark Code sought to curb aggressive marketing tactics that undermined breastfeeding and consequently contributing to increased child morbidity and mortality globally.[15]

In a significant show of support, India's Prime Minister, Indira Gandhi, endorsed the Code's adoption. Recognizing breastfeeding's critical role in public health, the Indian government enacted the Infant Milk Substitutes Act in 1992, effective August 1, 1993. However, manufacturers continued to exploit loopholes[16], prompting the government to introduce an amendment in 2003 to strengthen regulations.

In low-income and rural areas, breastfeeding is often the default choice due to limited access and affordability of Commercial Milk Formula. However, the Commercial Milk Formula industry targets these vulnerable communities with exploitative marketing strategies, preying on parents' concerns about their children's health and development. These tactics include emotive advertising, misleading packaging, and false claims that Commercial Milk Formula products can alleviate infant discomfort, promote sleep, and boost intelligence.

In contrast, urban and high-income areas have higher Commercial Milk Formula usage, where industry marketing tactics are more widespread. India's Infant Milk Substitutes Act has successfully restricted Breast milk substitute sales, unlike China, which lacks a robust national law regulating BMS marketing. This disparity is evident in consumption rates, with India showing a 14% increase in breast milk substitute consumption between 2011 and 2016, compared to China's 38% surge.[16]

Despite the existence of comprehensive policies and legislation in India designed to promote optimal infant feeding practices, progress remains sluggish due to several specific barriers. Notably, there is inadequate enforcement of the International Code of Marketing of Breast Milk Substitutes (1981) and ineffective implementation of the baby-friendly hospital initiatives introduced in 1992. While these initiatives are intended to restrict the promotion of breast milk substitutes and support exclusive breastfeeding, their effectiveness is undermined by ongoing challenges that hinder their impact.

Between 2010 and 2020, India saw a 5% increase in breastfeeding rates, largely due to a combination of strategic initiatives. This improvement can be attributed to the implementation of the Infant milk substitute Act, the extension of paid maternity leaves to up to 26 weeks under the Maternity Benefits Act of 2017, and the launch of the government's 'Mother's Absolute Affection' (MAA) campaign on August 5, 2016. The MAA program is designed to enhance breastfeeding rates by providing counseling and strengthening health systems. By reinvigorating efforts to promote, protect, and support breastfeeding, the program aims to make a significant positive impact on both maternal and child health outcomes.

Barriers faced by women in India

In India, numerous barriers hinder optimal feeding practices at the community, workplace, and healthcare facility levels. These obstacles include unsuitable work environments lacking support for breastfeeding, inadequate training of healthcare providers in breastfeeding support, insufficient counseling during antenatal and postnatal periods, particularly in the first six months, to promote exclusive breastfeeding. Pre-lacteal feeding and associated myths and misconceptions, cesarean deliveries, unnecessary use of infant formula, breastfeeding challenges and perceived breast milk insufficiency are other areas that need attention.[17]

Fortunately, evidence suggests that these barriers can be addressed through Policy support, Comprehensive programming in healthcare facilities and Community support structures at district and block levels. By tackling these barriers, India can promote optimal feeding practices and improve maternal and child health outcomes.

Why Are We Failing?

Despite the existence of comprehensive policies and strategies, breastfeeding targets remain unmet due to a variety of complex challenges. Cultural and traditional practices, such as the separation of babies from their mothers, hinder skin-to-skin contact and colostrum feeding, while the use of baby cradles in some maternity facilities and the promotion of pre-lacteal feeding by dais discourage early breastfeeding. Maternal illiteracy compounds the issue by limiting access to written information, which affects the ability to follow community health workers' advice, seek medical guidance for feeding issues, challenge harmful traditions, introduce complementary foods at the appropriate time, and overcome gender discrimination. Inadequate

antenatal counseling leaves expectant mothers and their families with unanswered questions, and working or HIV-positive mothers often lack sufficient support for making informed feeding decisions. The healthcare system also falls short, particularly in semi-urban and rural areas, where delays in problem recognition and intervention are common, and breastfeeding difficulties are frequently addressed with formula and bottles rather than proper medical solutions.

Additionally, medical and paramedical staff often lack proper training and sensitization, leading to ineffective advocacy for breastfeeding and the prescription of formula as an "easy way out." Insufficient training in optimal Infant and Young Child Feeding (IYCF) practices is evident at both undergraduate and postgraduate levels, with few pediatricians receiving adequate lactation management training.

Family support and societal factors further complicate the situation, as families may interfere with breastfeeding due to unscientific views, and working mothers face obstacles such as inadequate maternity leave, lack of support in nuclear families, insufficient training in breastmilk expression and storage, and unsupportive workplaces. Commercial influences also play a role, with unethical advertising and aggressive promotion of baby foods undermining breastfeeding efforts. Although government policies are commendable, more needs to be done to create a supportive environment for mothers and babies, and the private sector should adopt policies that bolster breastfeeding support.

Despite the well-documented benefits of breastfeeding, many mothers encounter difficulties during the first few days after delivery, partly due to enduring myths about this period. The concept of the "fourth trimester" is still evolving, and various misconceptions can obstruct exclusive breastfeeding. For instance, the belief that insufficient milk production is occurring, can arise from frequent cluster feeding, even though this is a normal aspect of milk supply adjustment. New mothers may also struggle with the idea of on-demand feeding during the recovery phase, leading to the misconception that frequent feeding is unnecessary. Additionally, the myth that commercial formula is a viable alternative can be perpetuated by visitors who suggest that formula will help the baby sleep better, implying that breast milk is inadequate. Some families advocate for pre-lacteal feeds, which can disrupt the natural frequency of breastfeeding. Societal pressures often equate a chubby baby with health, causing concern about insufficient breast milk if the baby appears lean. Furthermore, normal occurrences like reflux or colic are sometimes incorrectly attributed to breast milk, leading to unnecessary switches to commercial formula. These myths can overwhelm new mothers, driving them to seek alternatives to breast milk without proper guidance on improving latch and breastfeeding techniques. Addressing these misconceptions and providing adequate support is crucial to ensuring a successful breastfeeding experience.

In India, while significant strides have been made in empowering women, leading to equal representation in the workforce and comparable incomes to their male counterparts, urban, educated mothers continue to face substantial challenges when it comes to balancing their professional and personal lives, particularly in relation to breastfeeding. Despite their awareness of the benefits of breast milk, these mothers often struggle to maintain nursing beyond the first six months due to factors such as 26-week maternity leave and a lack of workplace resources that support breastfeeding. To mitigate these challenges, several solutions could be considered, including extending maternity leave, offering flexible working hours, providing on-site creches for breastfeeding during work hours, and creating designated, hygienic spaces for pumping and storing breast milk. By implementing these measures, it would be possible to help urban, educated mothers better manage the difficulties of breastfeeding while juggling their work and family responsibilities, thus fostering a more equitable and supportive environment for all.

The Rural Issues

As of 2024, 63.4% of Indian population lives in rural areas.[18] Therefore this article will be incomplete without mentioning the rural India. Role of Community health workers in providing support for breastfeeding initiation and maintenance cannot be undermined. To promote access to and utilisation of health services in rural areas, government of India introduced National Rural Health Mission in 2005. This involved recruitment of local women to participate in training to become accredited social health activist (ASHA). At community level, they can become the main driving force to enhance breastfeeding practices thereby improving preventive component of maternal and neonatal care. Since activities of ASHA worker consists of home visits, this can furthur ensure continuation of breastfeeding practices at home, timely dealing with difficulties around breastfeeding and provide counselling to support the same. The benefit of using local activist also alleviate hesitation of women in using support and usage of local language also helps in perpetuating knowledge better.

Road ahead

Breastfeeding, however challenging, is the most optimal nutrition which every baby deserves. Way forward, this can be strengthened by enhancing antenatal breast assessment and provision of counselling on importance of same. There Is need to streamline counselling services to women. Antenatal counselling has been an important part of MAA interventions to enhance breastfeeding. Skilled counselling is different from giving information though, frequently considered synonyms. This counselling must be provided face to face, starting in antenatal period by appropriately trained health care workers. This must also include counselling about difficulties during breastfeeding, care of breast while feeding and continuing breastfeeding after joining work helps to make informed decision on feeding of newborn. Part of counselling session must be anticipation of difficult and challenging cases like inverted nipples, surgery of breast in the past and addressing challenges like pregnant while breastfeeding, Caesarean births, first pregnancy, and breastfeeding in public. Counselling must be continued in post-natal period to sustain the importance. Forming peer groups may also help. Likewise training of healthcare workers including special curriculum for sisters and doctors and empowering community health workers on assessment of breast and special counselling.

Conclusion

Exclusive breastfeeding trends in India are evolving, driven by government initiatives, changing societal attitudes, and increasing awareness about its benefits. While challenges remain, the growing movement towards EBF promises a healthier future for Indian mothers and babies. By addressing regional disparities, promoting workplace support, and leveraging technology, India can further accelerate progress towards optimal breastfeeding practices

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Benefits of exclusive breast feeding in infants and adulthood

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Introduction

Breastfeeding is unarguably the "gold standard" food during the first months of postnatal life. Apart from being the nutritional support during early infancy, breast milk provides antibodies, long-chain fatty acids, hormones, neuropeptides and other factors, which are important immune protection, and regulation of growth, development, and metabolism for the human infant. The favorable gut microbiome contributed by microbiota present in human milk such as Bifidobacteria and Lactobacilli, and the oligosaccharides such as Lactoferrin, which promote integrity of the intestinal barrier and inhibit colonization with pathogen binding, that ultimately lead to regulation of the inflammatory response and gene expression at cellular level.

Breast feeding and health outcomes to child:

Impact of breastfeeding on child's health outcome has been area of extensive research. Several studies have shown that infants who are exclusively breast fed during first half of infancy have lower risk of infectious complications such as diarrhea, vomiting and preterm necrotizing enterocolitis (NEC), pneumonia, otitis media, bacterial meningitis etc and related mortality.

Few of the investigators have found association between exposure to exclusive breastfeeding and reduced risk of asthma and skin allerigic conditions, particularly in infants with family history for allergic rhinitis, atopic allergies, and asthma. Exposure to breast feeding is associated with reduced risk of childhood obesity and a dose-response relationship has been established in this regards. Favorable effects of breastfeeding have been demonstrated on cardiovascular and metabolic diseases too with breastfed infants having reduced risk of type 2 diabetes, hypertension and other ardiovascular diseases.

Breastfeeding and Neurological outcomes:

Benefits of breastfeeding are not merely limited to the nutritional support of the infants during early infancy. Breast feeding has been suggested to have a favorable effect on child's cognition, behavior, and mental health. The possible mechanism for these effects may relate to the presence of nutrients such as the long-chain polyunsaturated fatty acids (LC-PUFAs) in human milk, which are important for neuronal growth, repair, and myelination during early years of life. There is extensive literature available to substantiate this hypothesis.

In a prospective study on 540 mother-child pairs, Leveltakou et al evaluated relationship between breastfeeding practices and child's neurodevelopmental indices at 18 months age, assessed using Bayley Scales of Infant Development. A longer period of exclusive breastfeeding during the first year of life was associated with increased scores in cognition, language, and motor skills during second year of life, independently from a wide range of parental and infant characteristics. In another cohort Study, Bernard et al evaluated language ability with the Communicative Development Inventory (CDI) in 1387, 2-year-old children and overall development with the Ages and Stages

Questionnaire (ASQ) in 1199, 3-year-old children. Longer breastfeeding duration was associated with better cognitive and motor development and a dose-response relationship was suggested. Ever-breastfed children scored higher points on the CDI and ASQ than never-breastfed children. Among breastfed children, exclusive and any-breastfeeding durations were positively associated with both CDI and ASQ scores.

In another cohort study, Julvez et al evaluated relationship between duration of full breastfeeding with neuropsychological development at 4 years age. Neuropsychological development assessment was done using the McCarthy Scales of Children's Abilities (MSCA). Breastfeeding was categorized as never, short term (≤4mo), long term (4-6mo), or very long term (>6mo). Very long-term breastfeeding showed an independent association with child general MSCA scores after adjusting for a range of social, psychological, and nutritional factors.

Quinn et al in a cohort study on 3880 children evaluated the effect of breastfeeding on child development at 5 years, assessed using Peabody Picture Vocabulary Test Revised (PPVT-R). Authors observed a strong positive relationship between breastfeeding and the PPVT-R scores with increasing scores with increased duration of breastfeeding, even after adjusting for a wide range of biological and social factors. Jedrychowski et al in a prospective cohort study, evaluated effect of exclusive breastfeeding on the neurodevelopment of children over a 7-year follow-up of 468 term babies using Wechsler Intelligence Scale for Children, performed serially. The findings revealed a positive relationship between duration of breast-feeding and intelligence quotients (IQs). A longer duration of breastfeeding was associated with higher IQs, the effect was sustained till 7 years age.

The cognitive benefits of breast feeding have been observed not only during early years but even later during childhood and adolescence too. In a large-scale, nationwide longitudinal study, Kanazawa et al examined the effect of breastfeeding on intelligence in two consecutive generations of British children. The analysis showed that the effect of breastfeeding on intelligence increases from Age 7 to 16. Authors observed that with an increasing duration of exposure to breastfeeding, net IQ increased, even after adjustment for parental IQ and other potential confounders. Positive effect of breast feeding with neuronal functions during childhood was also substantiated in a nested case-control study of 253 children attending special needs schools in the Netherlands. On exploring the risk factors for severe speech and language impairments (SLI), the authors observed exposure to breast feeding being protective for SLI. Children with SLI were significantly less likely to have been breastfed directly after birth than neuro-typically developing children.

A more compelling evidence regarding the beneficial effects of breastfeeding on cognition was shown in a cluster-randomized trial of exclusive breastfeeding promotion intervention on 13,000 mother–infant dyads. At age of 6.5 years, the experimental group had higher means on all of the Wechsler Abbreviated Scales of Intelligence measures and higher teacher ratings of academic proficiency both reading and writing. At 16-year follow-up of same cohort, assessment revealed a persistent impact of prolonged exclusive breastfeeding experience on verbal abilities.

Recent data suggest that the positive impact of breast feeding are persistent much beyond childhood, during adulthood life. In a prospective, population-based birth cohort study of neonates born in 1982 in Pelotas, Brazil, researchers studied the IQ using Wechsler Adult Intelligence Scale, 3rd version, educational attainment, and income of the participants at 30 years of age. Duration and predominance of breastfeeding was associated with higher IQ scores, more years of education and higher monthly incomes at 30 years age. In another study of long-term effects of breast-feeding on educational attainment and midlife cognitive function in the British 1946 birth cohort, authors enrolled and evaluated 1739 participants for obtaining advanced educational qualifications by age 26 years and three cognitive test scores at age 53 years: i.e. reading ability assessed by National Adult Reading Test (NART), timed visual search and verbal memory. Breast-feeding was significantly and positively associated with educational attainment at 26 yrs age, independent of early social background as well as with NART at 53 years age.

Breastfeeding and social and emotional development

Breastfeeding doesn't only influences the children's cognitive and brain development, but also impacts their social and emotional development. The duration of breastfeeding correlates inversely with parent-reported antisocial and aggressive behavior during childhood as well as during adult life. A recent met analysis found higher risk of development of autism spectrum disorder (ASD) in children with absence or short duration of exclusive breastfeeding. In a case control study, Al-Farsi et al also demonstrated similar findings; sub-optimal breast feeding practices with late initiation of

breastfeeding were associated with increased likelihood for developing ASD. Krol et al observed that infants with high exclusive breastfeeding (EBF) experience show a significantly greater neural sensitivity to happy body expressions than those with low EBF experience suggesting a greater attentional bias to positive emotion with greater exposure to EBF.

Summary

This narrative review provides an overview of the critical and far-reaching effects of breastfeeding on health outcomes, not limited to infancy or childhood but much beyond to the adulthood. The beneficial effects of breastmilk are explained by the wide range of contents in breastmilk, which alter the microbiota of infants, immune response and gene expression leading to range of health benefits including reduced risk of infectious diseases during childhood, skin and pulmonary allergic disorders, the improved cognitive performance and socio-affective development, and reduced occurrence of obesity, metabolic and cardiovascular diseases during later life.

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Benefits of Breastfeeding to the mother

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The breast structure includes the nipples, areola, mammary tissue along with the supporting connective tissue and fat, blood, lymphatics and nerves. The two most important hormones involved in breastfeeding are prolactin and oxytocin. In response to the suckling of the baby, sensory impulses are passed from the nipple to the brain resulting in the release of these two hormones. Prolactin is the hormone responsible for the secretion of milk by the cells of the alveoli. Oxytocin on the other hand makes the myoepithelial cells contract causing the milk collected in the alveoli to flow and fill the ducts.

There have been numerous evidence of benefits of breastfeeding to the infant in terms of lower rates of childhood obesity, decreased incidence of asthma as well as better neurodevelopment. However, in recent times, there has been further evidence of the benefits of breastfeeding to the mother as well.

In many countries, breastfeeding is considered as the fourth trimester of pregnancy. Although it is the choice of the woman to breastfeed or not, the absence of the same results in a variety of consequences to both the mother and the baby. There are a number of physical, emotional and economic benefits of breastfeeding for the mother.

The American Academy of Pediatrics as well as the World Health Organization recommends exclusive breastfeeding for 6 months with appropriate complementary foods introduced at about 6 months. Breastfeeding can continue as long as mutually desired for 2 years or beyond.[1] Further the WHO recommends the initiation of breastfeeding within one hour of birth as it protects the newborn from acquiring infections and reduces the mortality.[2]

Immediate benefits to the mother

Breastfeeding helps in the following aspects:

1. Decrease in maternal bleeding and Involution of the uterus- It stimulates uterine contractions, which can help the uterus return to its pre-pregnancy size more quickly. This can reduce postpartum bleeding and enhance recovery. The release of oxytocin during breastfeeding further aids in the contraction of the uterus.[3]
2. Reduces stress and improves mental health- Breastfeeding has also been linked to better maternal mental health. There have been various studies to demonstrate the role of oxytocin in the forming of a bond between the mother and child. In a study conducted by Jonas et al[4] it was reported that mothers who breastfeed feel calmer, less aggressive, less stressed and in a better mood in comparison to their first postpartum days.[4] This can be attributed to the positive effects of breastfeeding on hormonal balance and the psychological benefits of nurturing.
3. Delay's ovulation and provides contraception as it inhibits ovulation and prolongs the period of lactational amenorrhea.

Enhanced bonding with the infant

Many women have reported that along with the psychological benefit

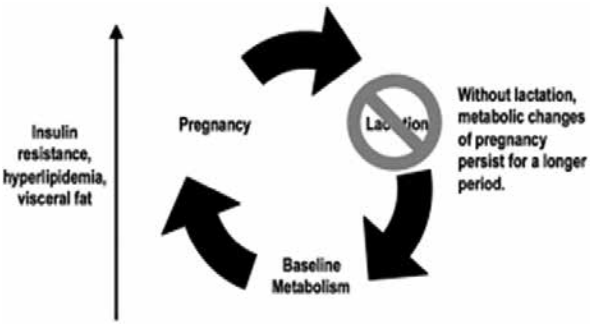
of breastfeeding, bonding more closely with their babies is the most important influence on their decision to breastfeed.[5] It is the desire of the mother to experience a sense of bonding or closeness with her newborn. Breastfeeding promotes skin-to-skin contact, which fosters a strong emotional bond between mother and child. A meta-analysis in *Pediatrics* (2016) found that breastfeeding is associated with improved maternal-infant bonding and a lower incidence of maternal postpartum depression[6]. The act of breastfeeding promotes the release of hormones such as prolactin and oxytocin, which enhance maternal feelings of love and attachment. Although it is difficult and tiresome in the first couple of days, the hormone oxytocin helps calm and relax the mother as well as helps in the flow of milk.

Lactation and maternal metabolism

1. Maternal weight

Producing milk for a single infant requires about 480 extra calories per day. Mothers who breastfeed may find it easier to lose pregnancy weight postpartum. A study in the *International Journal of Obesity* (2015) found that breastfeeding is associated with more significant weight loss in the months following childbirth compared to those who do not breastfeed .[7] This effect is partly due to the energy expenditure associated with milk production.

During pregnancy there is an accumulation of fat, more importantly visceral fat, along with an increase in insulin resistance, lipid and triglyceride levels. These changes tend to reverse more quickly, and completely, with lactation. This is the basis of the "Reset Hypothesis".[8] Lactating mothers are able to better mobilize these fat stores resulting in a reduction of the visceral fat and thereby reducing the chances of metabolic syndrome and other problems.



2. Glucose metabolism

In pregnancy there is an increase in insulin resistance and glucose intolerance. Various studies have suggested that lactation plays a role in reestablishing glucose homeostasis after delivery. In a study conducted by Kjos et al[9] on women who were diagnosed with gestational diabetes, it was found that in the follow-up testing at 4 to 12 weeks postpartum, women who were breast-feeding had improved glucose tolerance and lower fasting glucose than women who were bottle-feeding. Another study was conducted by Diniz et al.[10] They examined the relation between breast-feeding and glucose homeostasis in a cross-sectional study at 12 to 18 months postpartum and found that a history of breast-feeding was inversely associated with insulin resistance, independent of adiposity.

Chronic diseases

Breastfeeding has been associated with a reduced risk of several chronic diseases in mothers. Type 2 Diabetes mellitus is an emerging condition and its prevalence is increasing world over due to increase in sedentary lifestyle. Oxytocin is an important hormone which causes reduction in the insulin resistance. It was observed that mothers who breastfed for even as little as one month, had lesser chances of developing diabetes in later life in comparison to those who did not breastfeed at all.[11] There was a 4–12% reduction in the risk of developing type 2 diabetes for every 12 months of lifetime lactation[12].

The *World Health Organization* (WHO) acknowledges that breastfeeding is linked to a lower risk of breast and ovarian cancers in mothers .[13] A decrease in risk for reproductive cancers has been observed among women who have breastfed, possibly due to the reduction in their lifetime exposure to hormones such as estrogen. In a meta-analytical study it was found that there was a 28% lower risk of developing ovarian cancer among women who breastfed for at least 12 months compared to women who never breastfed.[14]

Endometriosis is a common benign gynecological condition which affects 10% of the reproductive population, However, its symptoms can have a devastating effect on the daily lives of women. The usual symptoms are dysmenorrhoea, dyspareunia, dyschezia as well as infertility. In a study conducted by Farland et al [15] it was found that the duration of breastfeeding was associated with a decrease in the risk of endometriosis. There was an 8% lower risk of endometriosis for every three months of additional breastfeeding done in every pregnancy.

Furthermore there have been various studies to demonstrate the benefit of lactation on osteoporosis, rheumatoid arthritis, multiple

sclerosis and even Alzheimer's disease.

A study conducted by Chen et al[16] showed that breastfeeding is associated with a lower risk of rheumatoid arthritis in women independent of the duration of breastfeeding. For multiple sclerosis, a duration of fifteen months or more of breastfeeding was associated with a lower risk of developing the disease as compared to less than four months of breastfeeding.[17]

Economic benefits

Breastfeeding can lead to significant savings in healthcare costs for mothers. The *Centers for Disease Control and Prevention* (CDC) estimates that breastfeeding can save families on formula and healthcare expenses related to infant illnesses.[18] Fewer health complications for both mothers and infants translate to lower medical costs and fewer days off work due to illness.

Conclusion

The benefits of breastfeeding extend far beyond the infant, offering substantial physical, emotional, and economic advantages for mothers as well. For women who are able to breastfeed, this natural process not only promotes health and well-being but also fosters a unique bond with their newborns, mitigating some of the challenges associated with postpartum recovery and maternal mental health. Understanding these benefits can empower mothers to make informed feeding choices that enhance their health and the health of their children.

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WHO BFHI Initiative

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The **Baby Friendly Hospital Initiative (BFHI)**, also known as **Baby Friendly Initiative (BFI)**, is a worldwide programme of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), launched in 1992 in India[1,2] following the adoption of the **Innocenti Declaration** on breastfeeding promotion in 1990[3]. The initiative is a global effort for improving the role of maternity services to enable mothers to breastfeed babies for the best start in life. It aims at improving the care of pregnant women, mothers and newborns at health facilities that provide maternity services for protecting, promoting and supporting breastfeeding, in accordance with the International Code of Marketing of Breast-milk Substitutes[4].

Concept of baby friendly hospital initiative

WHO and the United Nations Children's Fund (UNICEF) recommend that breastfeeding be initiated within the first hour after birth, continued exclusively for the first 6 months of life and continued, with safe and adequate complementary foods, up to 2 years or beyond.

The core purpose of the BFHI is to ensure that mothers and newborns receive timely and appropriate care before and during their stay in a facility providing maternity and newborn services, to enable the establishment of optimal feeding of newborns, which promotes their health and development.

Immediate and uninterrupted skin-to-skin contact and initiation of breastfeeding within the first hour after birth are important for the establishment of breastfeeding, and for neonatal and child survival and development. The risk of dying in the first 28 days of life is 33% higher for newborns who initiated breastfeeding 2–23 hours after birth, and more than twice as high for those who initiated 1 day or longer after birth, compared to newborns who were put to the breast within the first hour after birth[5]. The protective benefit of early initiation extends until the age of 6 months[6].

Exclusive breastfeeding for 6 months provides the nurturing, nutrients and energy needed for physical and neurological growth and development. Beyond 6 months, breastfeeding continues to provide energy and high-quality nutrients that, jointly with safe and adequate complementary feeding, help prevent hunger, undernutrition and obesity[7] . Breastfeeding ensures food security for infants[8].

Inadequate breastfeeding practices significantly impair the health, development and survival of infants, children and mothers. Improving these practices could save over 820 000 lives a year[9]. Nearly half of diarrhoea episodes and one third of respiratory infections are due to inadequate breastfeeding practices. Longer breastfeeding is associated with a 13% reduction in the likelihood of overweight and/ or prevalence of obesity and a 35% reduction in the incidence of type 2 diabetes[9]. An estimated 20,000 maternal deaths from breast cancer could be prevented each year by improving rates of breastfeeding

What are the principles of the baby friendly health initiative?

- The first few hours and days of a newborn's life are a critical window for establishing lactation

and providing mothers with the support they need to breastfeed successfully.

- Give new born infants no food or drink other than breast milk unless medically indicated.
- Practise rooming-in (allow mothers and infants to remain together) 24 hours a day.
- Encourage breastfeeding on demand.
- Support all mothers and babies to initiate a close relationship and feeding soon after birth.
- Enable mothers to get breastfeeding off to a good start.

To support mothers to make informed decisions regarding the introduction of food or fluids other than breastmilk, in 1989, WHO and UNICEF published the Ten Steps to Successful Breastfeeding **(the Ten Steps)**, within a package of policies and procedures that facilitates providing maternity and newborn services should implement to support breastfeeding[10]

Step 1: Facility policies

The International Code of Marketing of Breast- milk Substitutes and relevant World Health Assembly (WHA) resolutions [11-13]

Step 1a: Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.

Families are most vulnerable to the marketing of breast-milk substitutes during the entire prenatal, perinatal and postnatal period when they are making decisions about infant feeding. The WHA has called upon health workers and health-care systems to comply with the **International Code of Marketing of Breast-milk Substitutes**[11-14] and subsequent relevant WHA resolutions[13] (the Code), in order to protect families from commercial pressures.

The Code[11-13] lays out clear responsibilities on health-care systems to not promote infant formula, feeding bottles or teats used by manufacturers and distributers of products under the scope of the Code for this purpose.

All infant formula, feeding bottles and teats used in the facility should have been purchased through normal procurement channels and not received through free or subsidized supplies.

The facility has no display of products covered under the Code or items with logos of companies that produce breast-milk substitutes, feeding bottles and teats, or names of products covered under the Code.

The facility should have a policy that describes how it abides by the Code, including procurement of breast- milk substitutes, not accepting support or gifts from producers or distributors of products covered by the Code and not giving samples of breast-milk substitutes, feeding bottles or teats to mothers.

Infant feeding policy

Step 1b: Have a written infant feeding policy that is routinely communicated to staff and parents.

The clinical practices articulated in the Ten Steps need to be incorporated into facility policies, to guarantee that appropriate care is equitably provided to all mothers and babies and is not dependent on the preferences of each care provider.

The health facility should have a written infant feeding policy that addresses the implementation of all eight key clinical practices of the Ten Steps, Code implementation, and regular competency assessment.

Observations in the facility confirm that a summary of the policy is visible to pregnant women, mothers and their families.

A review of all clinical protocols or standards related to breastfeeding and infant feeding used by the maternity services indicates that they are in line with BFHI standards and current evidence-based guidelines.

Step 1: Monitoring and data-management systems

Step 1c: Establish ongoing monitoring and data-management systems.

Facilities providing maternity and newborn services need to integrate recording and monitoring of the clinical practices related to breastfeeding into their quality-improvement/monitoring systems.

Two of the indicators, early initiation of breastfeeding and exclusive breastfeeding, are considered "sentinel indicators". All facilities should routinely track these indicators for each mother–infant pair.

Clinical staff at the facility should meet at least every 6 months to review implementation of the system.

The purpose of the review is to continually track the values of these indicators, to determine whether established targets are met, and, if not, then plan and implement corrective actions.

Once acceptable levels of compliance have been

achieved, the frequency of data collection on these additional indicators can be reduced, for example to annually.

The global standards call for a minimum of 80% compliance for all process and outcome indicators, including early initiation of breastfeeding and exclusive breastfeeding.

Step 2: Staff competency

Step 2: Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.

Timely and appropriate care for breastfeeding mothers can only be accomplished if staff have the knowledge, competence and skills to carry it out. Training of health staff enables them to develop effective skills, give consistent messages, and implement policy standards.

Health-facility staff who provide infant feeding services, including breastfeeding support, should have sufficient knowledge, competence and skills to support women to breastfeed.

At least 80% of health professionals who provide antenatal, delivery and/or newborn care report should have received pre-service or in-service training on breastfeeding during the previous 2 years.

Step 3: Antenatal information

Step 3: Discuss the importance and management of breastfeeding with pregnant women and their families.

All pregnant women must have basic information about breastfeeding, in order to make informed decisions.

Pregnancy is a key time to inform women about the importance of breastfeeding, support their decision-making and pave the way for their understanding of the maternity care practices that facilitate its success.

During antenatal care, pregnant women and their families should be counselled about the benefits and management of breastfeeding. Wherever possible, conversations on breastfeeding should begin with the first or second antenatal visit, so that there is time to discuss any challenges, if necessary.

An antenatal discussion of breastfeeding includes:

- The importance of breastfeeding.
- The risks of giving formula or other breast-milk substitutes.
- The recommendations on exclusive breastfeeding for the first 6 months and facts that breastfeeding continues to be important after 6 months when other foods are given
- The importance of immediate and sustained skin-to-skin contact.
- The importance of early initiation of breastfeeding and the importance of rooming-In.
- The basics of good positioning and attachment.
- Practical skills such as positioning and attachment, on-demand feeding, and recognizing feeding cues are a necessary component of antenatal counselling.

Step 4: Immediate postnatal care

Step 4: Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.

Immediate and uninterrupted skin-to-skin contact facilitates the newborn's natural rooting reflex that helps to imprint the behaviour of looking for the breast and suckling at the breast. Additionally, immediate skin-to-skin contact helps populate the newborn's microbiome and prevents hypothermia. Early suckling at the breast will trigger the production of breast milk and accelerate lactogenesis.

Mothers should be helped in understanding how to support the baby and how to make sure the baby is able to attach and suckle at the breast.

The milk a newborn consumes immediately after birth is colostrum, which is highly nutritious and contains important antibodies and immune-active substances.

Skin-to-skin contact is particularly important for preterm and low-birth-weight infants. Kangaroo mother care involves early, continuous and prolonged skin-to-skin contact between the mother and the baby[15], and should be used as the main mode of care as soon as the baby is stable owing to demonstrated benefits in terms of survival, thermal protection and initiation of breastfeeding.

Step 5: Support with breastfeeding

Step 5: Support mothers to initiate and maintain breastfeeding and manage common difficulties.

Mothers should receive practical support to enable them to initiate and maintain breastfeeding and manage common breastfeeding difficulties. Practical support includes providing emotional and motivational support, imparting information and teaching concrete skills to enable mothers to breastfeed successfully.

All mothers should receive individualized attention,

but first-time mothers and mothers who have not breastfed before will require extra support.

Mothers delivering by caesarean section, twins and obese mothers should be given additional help with positioning and attachment.

Practical support for preterm, in order to establish and maintain the production of breast milk.

It is essential to demonstrate good positioning and attachment at the breast, which are crucial for stimulating the production of breast milk and ensuring that the infant receives enough milk.

Mothers should be coached on how to express breast milk as a means of maintaining lactation in the event of their being separated temporarily from their infants.

Step 6: Supplementation

Step 6: Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.

Giving newborns any foods or fluids other than breast milk in the first few days after birth interferes with the establishment of breast-milk production. Newborn's stomachs are very small and easily filled. Newborns who are fed other foods or fluids will suckle less vigorously at the breast and thus inefficiently stimulate milk production, creating a cycle of insufficient milk and supplementation that leads to breastfeeding failure.

Mothers should be discouraged from giving any food or fluids other than breast milk, unless medically indicated.

The WHO/UNICEF document on **Acceptable medical reasons for use of breast-milk substitutes** describes conditions for which breastfeeding is contraindicated.

Infants should be assessed for signs of inadequate milk intake and supplemented when indicated, but routine supplementation is rarely necessary in the first few days of life.

Mothers who intend to "mixed feed should be counselled on the importance of exclusive breastfeeding in the first few weeks of life, and how to establish a milk supply and to ensure that the infant is able to suckle and transfer milk from the breast.

Infants who cannot be fed their mother's own milk, should be fed donor human milk. If donor milk is unavailable or culturally unacceptable, breast-milk substitutes are required.

Step 7: Rooming-in

Step 7: Enable mothers and their infants to remain together and to practise rooming-in 24 hours a day.

Rooming-in is necessary to enable mothers to practise responsive feeding, as mothers cannot learn to recognize and respond to their infants' cues for feeding if they are separated from them. When the mother and infant are together throughout the day and night, it is easy for the mother to learn to recognize feeding cues and respond to them.

Facilities providing maternity and newborn services should enable mothers and their infants to remain together and to practise rooming-in throughout the day and night.

Postnatal wards need to be designed so that there is enough space for mothers and their newborns to be together.

Babies should only be separated from their mothers for justifiable medical and safety reasons.

Rooming-in may not be possible in circumstances when infants need to be moved for specialized medical care such as in preterm or sick infants.

Step 8: Responsive feeding

Step 8: Support mothers to recognize and respond to their infants' cues for feeding.

Breastfeeding involves recognizing and responding to the infant's display of hunger and feeding cues and readiness to feed, as part of a nurturing relationship between the mother and infant. Responsive feeding (also called on-demand or baby-led feeding) puts no restrictions on the frequency or length of the infant's feeds, and mothers are advised to breastfeed whenever the infant is hungry or as often as the infant wants.

Mothers should be supported to recognize and respond to their infant's cues for feeding, closeness and comfort, and enabled to respond accordingly to these cues with a variety of options, during their stay at the facility providing maternity and newborn services.

Step 9: Feeding bottles, teats and pacifiers

Step 9: Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.

Proper guidance and counselling of mothers and other family members enables them to make informed decisions on the use or avoidance of pacifiers and/or feeding bottles and teats until the successful establishment of breastfeeding. While WHO guidelines do not call for absolute avoidance of feeding bottles, teats and pacifiers for term

infants.[3]

If expressed milk or other feeds are medically indicated for term infants, feeding methods such as cups, spoons or feeding bottles and teats can be used during their stay at the facility.

It is important that the facility staff ensure appropriate hygiene in the cleaning of these utensils, since they can be a breeding ground for bacteria inform mothers and family members of the hygiene risks related to inadequate cleaning of feeding utensils.

The physiology of suckling at the breast is different from the physiology of suckling from a feeding bottle and teat, their use could lead to breastfeeding difficulties, particularly if use is prolonged.

If pacifiers replace suckling and thus reduce the number of times an infant stimulates the mother's breast physiologically, this can lead to a reduction of maternal milk production.

There should be no promotion of feeding bottles or teats in any part of facilities providing maternity and newborn services, or by any of the staff.

Step 10: Care at discharge

Step 10: Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

Breastfeeding support is especially critical in the succeeding days and weeks after discharge, to identify and address early breastfeeding challenges that occur.

Receiving timely support after discharge is instrumental in maintaining breastfeeding rates. Maternity facilities must know about and refer mothers to the variety of resources that exist in the community.

Discharge from facilities providing maternity and newborn services should be planned for and coordinated, so that parents and their infants have access to ongoing support and receive appropriate care.

Facilities need to provide appropriate referrals to ensure that mothers and babies are seen by a health worker 2–4 days after birth and again in the second week, to assess the feeding situation.

Follow-up care is especially crucial for preterm and low-birth-weight babies. In these cases, the lack of a clear follow-up plan could lead to significant health hazards.

Country-level implementation and sustainability

Primary objectives of a national BFHI programme should be, to scale-up to 100% coverage of the programme and sustain recommended practices over time. Countries are called upon to implement nine key responsibilities of a national BFHI programme (see Box 1) Reproduced from[17]

Box 1: Nine key responsibilities of a national BFHI programme	
1.	Establish or strengthen a national breastfeeding coordination body.
2.	Integrate the Ten Steps into relevant national policy documents and professional standards of care.
3.	Ensure the competency of health professionals and managers in implementation of the Ten Steps.
4.	Utilize external assessment systems to regularly evaluate adherence to the Ten Steps.
5.	Develop and implement incentives for compliance and/or sanctions for non-compliance with the Ten Steps.
6.	Provide technical assistance to facilities that are making changes to adopt the Ten Steps.
7.	Monitor implementation of the initiative.
8.	Advocate for the BFHI to relevant audiences.
9.	Identify and allocate sufficient resources to ensure the ongoing funding of the initiative.

These are illustrated in Figure below. Reproduced from[17]

Fig 1: Key responsibilities of a national BFHI programme

Conclusion

In humanitarian settings, the life-saving potential of breastfeeding is even more crucial. International guidance recommends that all activities to protect, promote and support breastfeeding need to be increased in humanitarian situations, to maintain or improve breastfeeding practices .

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Formula Feeding Vs Breast Feeding: Pros and Cons

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Nutrition is very important for optimal growth at any age but is even more important for infants as it is not only essential for physical growth but also for brain development and prevention of infections.

Human milk is the recommended nutritional source for full-term infants for at least the first six months of postnatal life. The advantages of breast feeding are not limited to childhood period but extend much beyond in adulthood as well:

- Reduction of infection (Diarrhea, Acute respiratory tract infections, Otitis Media, Necrotizing Enterocolitis, Late onset sepsis)
- Protection against allergies: less chance of eczema, milk allergy and asthma
- Reduction of obesity / Diastolic blood pressure by 2mmHg /Type II DM / Leukemia/Breast cancer
- Better cognition
- Saves money / social issues
- <5 child mortality reduction by 13-15%
- Maternal benefits

Knowing so many benefits to breast feeding, it is strongly being emphasized by all agencies (WHO, AAP, IAP) to promote breast feeding till 6 months but the exclusive breast feeding rates in our country according to latest NFHS IV is 64% which is getting better over years but is still lower than WHO target(>80%). Understanding that the incidence of true lactation failure is only 1%, there are other problems which can be sorted out by various practical solutions apart from increasing awareness:

- Establishment of Antenatal clinic for breast feeding promotion / Nipple examination by obstetricians or pediatricians or any health care worker.
- Feeding in first hour of life to be emphasized which has been incorporated as essential part of Newborn Resuscitation Program and Kangaroo Mother Care.
- Employment of lactation nurses/ Counselors in hospitals to help the mothers in actually initiating and maintaining lactation.
- Special emphasis to babies born to LSCS mothers like pain management / different positions/ bedding in/ incision line care etc.
- Promotion of breast milk expression techniques (by manual techniques or breast pumps) would help preterm babies, working mothers or if mother and baby is separated because of any reason.

After breast feeding, the second best option for milk in first one year of life is infant milk formula with composition as close to mothers milk as possible. But the commonest milk consumed by Indian infants is cow's or buffalo's milk which is definitely with lots of side effects namely iron deficiency anemia, Vitamin C/D deficiency disorders, increased risk of infections, increased renal solute load to kidneys especially important during acute diarrhea episodes and most important lack of DHA in bovine milk which is of paramount importance for brain and retina growth. Because of these serious limitations American Academy of Pediatrics recommends against use of cow's milk till one year of age. Pediatric academies of Canada, Scotland and UK recommend not using cow's milk till 9 mths of age.

Comparison of breast milk with Cow milk

Nutrients	Breast Milk	Cow's Milk	Limitations of Cow's Milk
Protein	· 60:40 Whey Casein · α lactalbumin · Lactoferrin · Lysozyme · Glutamine	· 20:80 Whey Casein · ß lactoglobulin	· Not Easily Digestible / Amino acid profile not close to mother milk · High Renal Solute Load
Carbohydrate	7 gm/100ml	4.5 gm/100ml	Less substrate for beneficial bacteria and Mineral absorption is less
Fat	3.8gm /100ml	3.7gm/100ml	· Not easily digestible because of Saturated Fats · DHA /EFA quantity very less
Minerals	Ca 34mg/100ml PH 17mg/100ml	Ca117mg/100ml PH 92mg/100ml	- Ca sedimentation - Ratio does not allow the optimal absorption of Ca
Electrolytes	Na 7meq/ltr K 13meq.Ltr Cl 11meq/ltr	Na 22meq/ltr K 35meq/ltr Cl 29meq/ltr	Electrolyte imbalance Dehydration
Vitamins	Vit A 0.61mg/l Vit C 52mg/l	Vit A 0.27mg/l Vit C 11mg/l	Increased susceptibility to infection

Other mammalian milks used in some parts of country also have similar nutritional handicaps:

Comparison of different mammalian milks

Species	Lactose	Protein	Fat	Calories
Cow	4.8	3.3	3.7	67-70
Buffalo	5.2	3.9	6.6	100
Goat	4.7	3.5	4.5	63-70
Camel	5.6	3.1	4.0	73
Elephant	8.8	3.1	19.6	224
Ass	6.5	1.7	1.3	45

Breast Feeding

Pros	Cons
1. Optimal nutrition and immune system development	1. Learning curve for latching and technique
2. Bonding and emotional benefits for mother and baby	2. Frequency and duration of feedings can be demanding
3. Convenient and cost-effective	3. Potential for nipple soreness, engorgement, and mastitis
4. Lower risk of infections, allergies, and chronic diseases	4. Limited flexibility for mothers with busy schedules or multiple commitments
5. Supports uterus shrinkage and weight loss after pregnancy	5. Social stigma or discomfort in public feeding situations

All the issues related to breast feeding can be resolved by effective counseling to the mother and support of the family.

Formula Feeding

Pros	Cons
1. Flexibility and convenience for feeding schedules and public feeding	1. Higher cost compared to breastfeeding
2. Easier to share feeding responsibilities with partners or caregivers	2. Potential for allergic reactions or intolerance to formula ingredients
3. Can be a good option for mothers with low milk supply or breastfeeding challenges	3. Less optimal nutrition and immune system development compared to breast milk
4. Wide range of formula options available for different needs and preferences	4. Increased risk of infections, allergies, and chronic diseases
5. Allows for monitoring of exact intake and output	5. Requires proper preparation, storage, and handling to ensure safety

Supplementation of exclusively breast fed infants: Because of widespread prevalent of Vit D deficiency disorders in infants, it is recommended (AAP) to start Vit D (400IU/d) even in exclusively breast fed infants. Though there are concerns regarding exposure of infants to sunlight and later developments of skin cancer in white races; we don't have any Indian figures to support or negate these observations and as of now we do recommend sun exposure for Vit D sufficiency.

Iron supplementation is started at 6 months of age as later supplementation has been associated with increased prevalence of iron deficiency states whereas earlier supplementation is also not without risks of infection (especially in malaria endemic zones) and poor growth.

Complimentary feeding issues: The word weaning has been replaced by complimentary feeding to emphasize the importance of continuing breast feeds and to compliment it with semisolid diet. This is most crucial period where growth faltering starts because of poor understanding of issues related to complimentary feeding. The most important issues worth highlighting are:

- Concept of balanced diet starts right at this age.
- Fat density not less than 25%, blends of saturated, monosaturated and polyunsaturated fats (including DHA) important.
- Seasonal vegetables and fruits are preferred vs stored items.
- Way of cooking of food is of utmost importance.
- Transfats are bad for everyone including infants.
- Juices intake has to be regulated.
- Addition of extra calcium in diet has its own problems.
- Addition of salt and sugar has to in moderation right from start of nutrition
- Milk intake after one year of age has to be regulated.
- Issue related to start of water in diet.
- Other beverages also need to be regulated.

Key messages

- Breast milk is best diet till 6 mths of age in term neonates
- If not available: term milk formula is second best choice
- Unmodified bovine milk: strict no till 1 year of age
- Iron deficiency and rickets are common nutritional problems in infancy
- Under weight as well as over weight are serious issues
- Complimentary feeding starting at 6 months is an art and has to be practiced in accordance of good principles of balanced diet.
- Preterm babies born <1800 gms need supplementation of breast milk or a preterm infant formula for their optimal growth.

Human Milk Banking

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One of the best gifts from nature is the mother's ability to produce a dynamic and multi-faceted fluid enriched with nutritional and bioactive components, the **MOM – Mother's Own Milk**. Nothing can substitute the myriads of benefits associated with feeding this nectar to her baby which reaps major dividends for the infant, the mother and the society. It is undoubtedly the ideal source of nutrition and acts as the first vaccination for the baby. Breastfeeding also entails a sentimental metaphor for bonding between the mother and her baby.

Improving breastfeeding rates worldwide is one of the fundamental drivers to achieve Sustainable Development Goals by 2030. However, due to various challenges like illness of the mother, delay in milk production, maternal medications or diagnostics, substance abuse, abandonment or maternal death, some of these neonates are devoid of MOM. This lack of access to breast milk leaves them more vulnerable to adverse short and long-term outcomes which is further accentuated in the small and sick newborns (SSN). Alternative feeding choice for these newborns are milk of animal origin or the infant formula milk, the use of which is often associated with a high risk of sepsis and necrotizing enterocolitis, thus significantly decreasing the chances of intact survival of the vulnerable SSN. In such scenarios where clinicians have to look for safe alternative feeding choice, various National and International organisations including WHO recommend pasteurized donor human milk (PDHM), made available through human milk banks (HMB), which can serve as the next best feeding option.

Breastfeeding is a profound bonding experience and a powerful health initiative. Breast milk is often referred to as "liquid gold" for its comprehensive benefits:

1. Nutritive dominance: Breast milk provides the perfect balance of macronutrients-proteins, fats and carbohydrates. The proteins in breast milk such as lactoferrin and alpha lactalbumin, lysozyme are easily digestible and essential for development. The protein composition in breast milk changes over time, adapting to the baby's developmental needs. As lactation progresses the protein content adjusts to provide more of the nutrients needed for growth & development. Fats particularly long chain polyunsaturated fatty acids (LCPUFAs) like DHA (docosahexaenoic acid) and ARA (arachidonic acid). It contains Vitamins A, C, D, E and K as well as B-complex Vitamins. Minerals like calcium, zinc, iron and magnesium are present.
2. Immunological Benefits: Breast milk contains antibodies particularly secretory immunoglobulin A(IgA), IgG, IgM and living cells, prebiotics and probiotics that help protect infants from infections and diseases. Breast milk contains various growth factors such as epidermal growth factor (EGF), which play a role in the maturation and development of the gastrointestinal tract and other tissues.
3. Cognitive Development: Studies have shown that breastfed babies often exhibit higher IQ levels and better cognitive development compared to their formula-fed counterparts.

4. Emotional Bonding: The physical closeness and skin-to-skin contact during breastfeeding foster a deep emotional bond between mother and child, promoting emotional stability and security.
5. Health Benefits for Mothers: Breastfeeding can help mothers lose pregnancy weight more quickly and reduces the risk of breast and ovarian cancers, type 2 diabetes, and postpartum depression.

In India, the model conceptualised for HMB is Comprehensive lactation management centre (CLMC) rather than HMB, to emphasize the fact that the functions of CLMC encompass antenatal counselling, postnatal counselling, and support to the mother to initiate breastmilk feeding while in the birthing facility, help her sustain it till 6 months post discharge, along with safe collection, processing, handling, storage, and disbursement of PDHM.

Challenges in Indian Scenarios

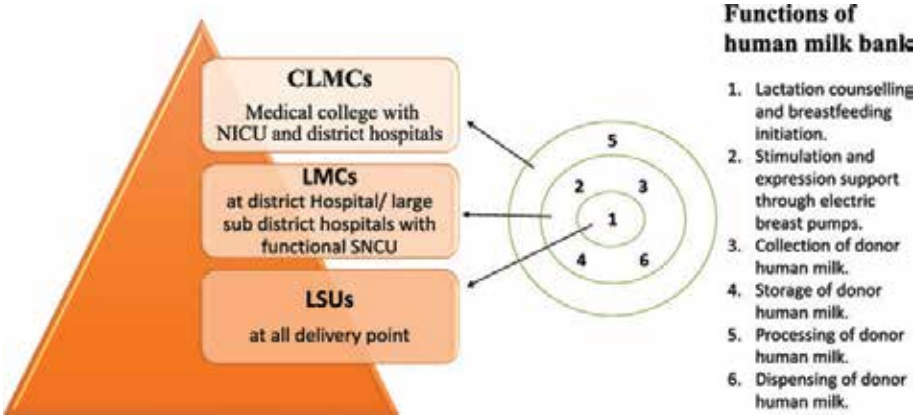
The first milk bank in Asia under the name of **Sneha**, founded by Dr. Armida Fernandez, was started in Sion Hospital, Mumbai on November 27, 1989. Thereafter, it took a little over 25 years for establishing the technical 'know-how' as well as for the 'buy-in' of the thought process. Considering the paramount benefits associated with human milk banking and its ultimate goal towards promoting breastfeeding, the Government of India held its first national consultative meeting for formulating national guidelines on human milk banking in 2013 followed by several consultations which culminated into the launch of "National Guidelines on Lactation Management Centres in Public Health Facilities" in July 2017. These guidelines focus on the establishment of comprehensive lactation management centres (CLMC) to serves as a lactation support centre to support breastfeeding, as well as aims to safely collect, handle, process, store and disburse safe PDHM; lactation management units (LMUs) to facilitate the expression and collection of MOM for her infant's use at first referral units/ subdistrict hospitals; and lactation support units (LSUs) at all delivery points to provide round-the-clock breastfeeding support, lactation counselling, and kangaroo mother care support to mothers.

Today, with SNCUs at each District Hospital there is a need to quickly establish CLMCs across the country in a 'Hub & Spoke' model. The public health system in India has an excellent regionalisation concept and in-line with that the Indian human milk banking should progress as CLMCs at Medical colleges/ District hospitals (Hub), Lactation management units (LMU) at Community health centres (spokes) and Lactation support units (LSU) at every birthing facility (spokes). Unfortunately, Indian milk banking is still in its phase of infancy, due to various challenges like lack of appropriate equipment and adequate infrastructure, inadequate trained manpower, and above all lack of awareness among community as well as the healthcare professionals.

Structure of milk banks in India

In India, human milk banks are established as Lactation Management Centres (LMC) at three levels such as, Lactation Support Units (LSU) at delivery points, Lactation Management Units (LMU) at district levels with functional Special Newborn Care Units (SNCU) and Comprehensive Lactation Management Centres (CLMC) at a tertiary level as per the National Guidelines on Lactation Management Centres in Public Health Facilities.

Functions of a human milk bank include lactation support and consultation, expression by electric pumps, collection, storage and processing of human milk and dispensing to NICUs. According to the Indian guidelines, electric breast pumps are provided in LMCs and CLMCs and pasteurization units (Milk Processing) is limited to CLMCs. Milk collected at LMCs is to be transported to CLMCs from where processed milk is sent back to LMCs. (Adapted from the National Guidelines on Lactation Management Centres in Public Health Facilities)



Some important aspects related to milk bank -

Who are the Recipients - PDHM is to be dispensed at the NICU/SNCU doctor's advice after receiving written requisition and is to be provided on priority for preterm and sick babies, babies of mothers with postpartum illnesses or lactation failure, short gut syndrome, GI pathology and post-surgical neonates.

Who can be the Donors - Any healthy lactating mother, who is voluntarily willing to give her extra breastmilk for other babies without compromising the nutritional needs of her own baby. Mothers with history of intake of illicit drugs, alcohol or those with a positive blood test result for HIV, HTLV, Hepatitis B or C or syphilis, or recipients of organ or tissue transplant, blood/blood product transfusion within the prior 12 months and those with mastitis or infection of the nipple or areola should refrain from donation.

Required Infrastructure – Minimum requirement is an area of 300-350 square metres that can be partitioned into rooms to comfortably lodge the equipment required for milk banking, a work area for the technician, a clean utility area, an area for reception and counselling and another one for pumping of milk from donors along with some storage space for records. Confidentiality for counselling and privacy for breastmilk expression needs to be maintained.

Equipment required:

a. Pasteurizer: For heat treatment of donor milk at the recommended temperature of 62.5°C for a period of 30 minutes (Holder method).

b. Deep freezer: A deep freezer with the digital display of temperature to store the milk at minus 20°C. It is desirable to have two deep freezers one for storage of the milk till the post-pasteurization milk culture reports are available and second for the storage of the pasteurized milk (with negative culture reports) ready for disbursement.

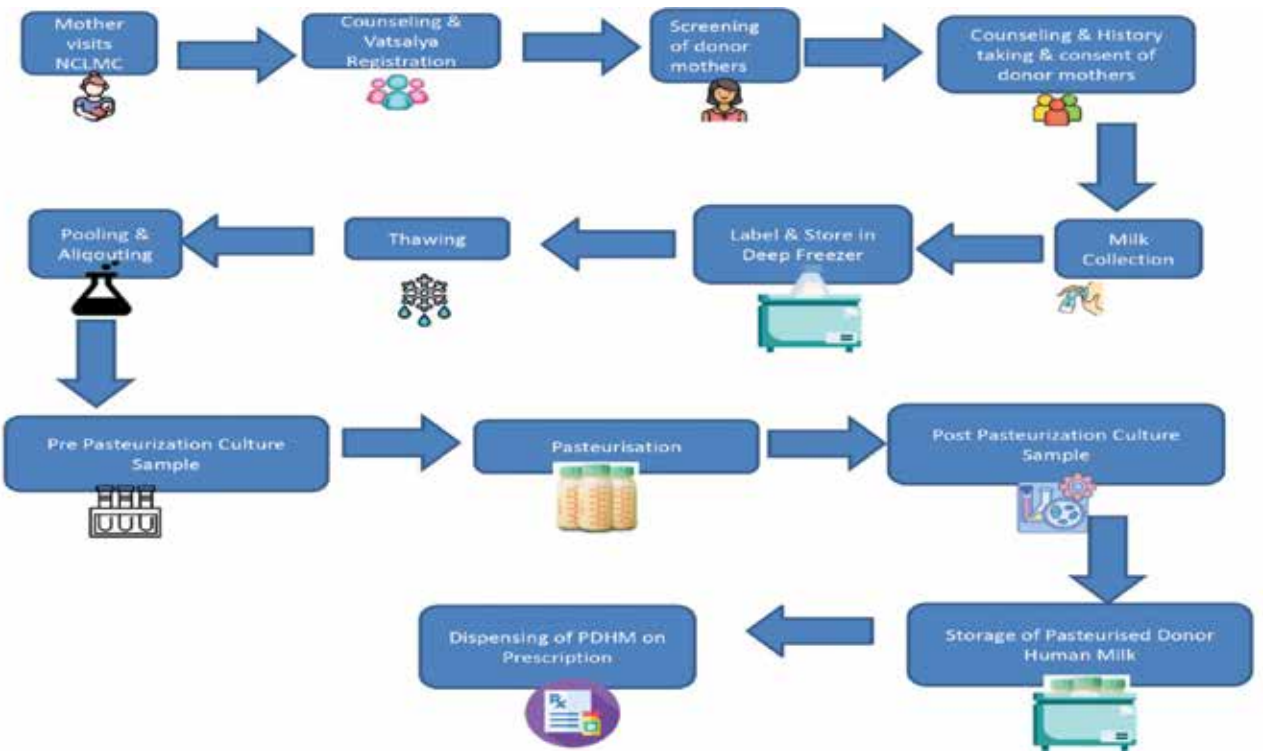
c. Refrigerators: For storing the milk during the day until the whole day's collection is over after which it is shifted to deep freezer. It is also required for thawing the milk before it is pooled for pasteurization.

d. Hot air oven/Autoclave: For sterilizing the containers used for collection from donors and for pasteurization.

e. Breast pumps: Hospital grade electric breast pumps are preferred as they result in better yield of expressed milk (volume and content) and are comfortable to use.

f. Containers: Single use hard plastic containers of polycarbonates or wide-mouthed stainless-steel containers to be used for collection and storage the milk.

Process flow



Working of Comprehensive Lactation Management Centre

- Mother with various conditions visit CLMC for counselling and expressing her milk for the baby, mother demographic data is being reviewed by the lactation counsellor and counselled well for the expression of milk for her own baby. Mother with surplus milk is being screened well for the registration as a donor
- After proper counselling; checking suitability for donation; getting written informed consent; history taking; physical examination and sampling for serology and viral markers, the donor mother is sent to designated breastmilk collection area in the milk bank. Breastmilk is collected with hygienic precautions, with proper aseptic technique, labelled with all the information. Donor milk is immediately stored in the freezer unless it will be treated or used within the same day. Containers should be foodgrade, sanitary, and labeled with a tracking identification number, along with the donor mother's information and date of collection/ freezing.
- Various pre-pasteurization screening procedures for donor milk exist. CLMC choose to test samples from every pool of pre-pasteurized milk for microbial content and possible contamination. Milk can be tested (whether pre-pasteurization, post-pasteurization, or both) for total viable microbial content, Enterobacteriaceae, Staphylococcus aureus, and other undesirable microbes and contaminants. Each region has to determine the acceptable microbial level of their milk if pre-pasteurization screening is performed.
- Precise pasteurization methods are necessary to heat milk to temperatures capable of inactivating bacteria, viruses, and other potential pathogens while limiting the impact on the milk's protective elements, such as proteins, antibodies, and vitamins. The method of pasteurization and the most common practice is considered a long-time, low temperature pasteurization method known as Holder pasteurization, which involves heating donor milk at 62.5°C for 30 minutes followed by rapid cooling.
- Screening donor milk after pasteurization is a good practice to monitor for contamination introduced after the pasteurization process. CLMC systems test a sample from each pasteurization batch. To ensure the safety of donor milk recipients, pasteurized milk needs to be discarded if any microbial content is found.

Another important aspect to be emphasized and reiterated periodically is that there should be no commercialization of human milk.

Pasteurized Donor Human Milk is used as a bridge, while the mother's lactation supply can be established and the infant transitions to feeding directly from the breast, equipping both mother and baby for healthy breastfeeding post-discharge. Women who donate milk usually breastfeed their own infants and have a milk supply that exceeds their own infants' needs. Best practice is to implement human milk banks as a component within a comprehensive and integrated system, to ensure they are in line with the broader purpose of protecting, promoting and supporting breastfeeding and child nutrition.

Experience and Journey of Vatsalya-Maatri Amrit Kosh, the CLMC at LHMC

'Vatsalya- Maatri Amrit Kosh', the first human milk bank for the public sector in Northern India and a national level CLMC was established on 7th June 2017 with Indo-Norwegian collaboration under 'Oslo-Delhi: Improve Newborn Care Program'. This was inaugurated by Shri CK Mishra, honourable Secretary, Health and Family Welfare, Govt. of India, in the august presence of Mr Nils Ragnar Kamsvåg, the Norwegian Ambassador to India and Dr Terje Rootwelt, Professor of Pediatrics at the University of Oslo, Norway.

The establishment of the 'Vatsalya- Maatri Amrit Kosh' under the Department of Neonatology at Lady Hardinge Medical College, has boosted the humane care provided to the smallest and the sickest of neonates, keeping in mind the motto of ensuring MOM for each and every neonate. The primary focus of the milk bank team is not only to provide individual support, and counselling to each mother but to ensure that each neonate should completely receive his or her own biologic mother's milk, the MOM as soon as possible after birth. Donor milk is reserved as a bridge to support the babies whose mothers are not producing enough milk and continuous consistent effort is made to support such mothers. From around 500 donations in the year 2017 to 3000 contributions in the year 2022, the facility is seeing an improved response with every passing day. A dramatic increase is observed in the collection of human milk from 65 litres in 2017 to 260 litres in 2022 with 13 times increase in provision of MOM to the extremely premature

babies in the NICU. PDHM dispensing is kept at a strict minimum to encourage MOM usage.

Pursuing further, colostrum harvesting is initiated soon after birth from the mothers whose neonates are admitted to the neonatal unit and cannot feed directly at the breast, followed by PDHM support, exclusive MOM and ensuring direct breastfeeding at discharge. The mothers are further followed telephonically after discharge till 6 months of age, and every possible attempt is made to ensure exclusive breastfeeding.

With the newer advances, Vatsalya- Human Milk Laboratory was established with the help of Department of Global Health, OUH, Oslo, Norway, in March 2022 in the august presence of Ms Martine A Bottheim, Deputy Head of Mission, Norwegian Embassy, New Delhi with an intent to explore the nutrient content of human milk. Pushing the boundaries and exploring future frontiers, Vatsalya Maatri Amrit Kosh is well poised to establish community outreach (to help mothers in the community) and support NICUs in Delhi (in place with AIIMS New Delhi since Dec 2019) using the 'Hub and Spoke' model.

As human milk banking systems expand and strengthen, this will not only have an impact on the immediate health of neonates but will also have long-term positive effects. India bears the highest global burden of neonatal births and deaths, therefore improvement in neonatal health indicators will help India and the world achieve their goal of reduced neonatal mortality and morbidity.

With the motive of 'Together, we can'; let us 'jumpstart the life of the most vulnerable Newborns – Breastmilk for neurodevelopment'

Post Partum Contraception in Breast Feeding Women

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Introduction

Postpartum contraception is an essential tool to help women achieve optimal birth spacing. Postpartum contraception for breastfeeding women is an important consideration for family planning and maternal health. The unmet need for family planning among breastfeeding women in India presents significant challenges. Addressing the unmet need for family planning among breastfeeding women in India requires coordinated efforts involving education, healthcare access, and supportive policies to empower women to make informed choices regarding their reproductive health. Currently, India has an overall unmet need for contraception estimated at 9.4%, however this need in immediate postpartum women is significantly high.[1] Spacing pregnancies and increasing the inter pregnancy interval would result in a 30% decline in maternal morbidity and mortality with a significant decreased risk of preterm birth, low birth weight, small for gestational age, infant mortality, neonatal ICU admissions. The WHO recommends 24 months between delivery and conception of a subsequent pregnancy.[2] Similarly, the American College of Obstetricians and Gynecologists (ACOG) recommend an interpregnancy interval of 18 months to 5 years.[3] Thus emphasizing the safety and timing of post pregnancy contraception methods is the need of the hour.

The Postpartum Period & Contraception

The postpartum period is defined as the first six weeks after the birth of a child during which the woman's body has largely returns to its pre-pregnancy state. The "extended postpartum period" includes the first 12 months after birth. Usually ovulation resumes as quickly as 21 days after birth in a non-fully breastfeeding woman. Contraceptive services have been offered 6 weeks post-partum which led to many unwanted pregnancies and shorter interpregnancy interval. Hence contraception should be discussed with the women during the antenatal period so that the method of choice can be offered immediately post pregnancy prior to discharge from hospital.[4]

Available Contraceptive Choices:

1. Non-Hormonal Methods:
   - Barrier Methods: Condoms, diaphragms, and cervical caps can be used. They have no impact on breastfeeding.
   - Postpartum Sterilization
   - Breastfeeding as Contraception:
   - The Lactational Amenorrhea Method (LAM) can provide temporary contraception for up to 6 months postpartum if exclusive breastfeeding is practiced and the mother has not yet had a menstrual period.
   - Copper Intrauterine Device (IUD): Can be inserted immediately after delivery and is a highly effective form of contraception.
2. Hormonal Methods (with caution):
   - Progestin-only Pills (POPs): These are safe for breastfeeding and can be started after delivery, usually around 3 weeks

postpartum.

- Contraceptive Implants: Such as Implanon, can be inserted postpartum and are safe for breastfeeding.
- Progestin-only Injection (Depo-Provera): Can be given starting 6 weeks after delivery.

- Bottom of Form
- Combination Hormonal Methods: Combined Oral Contraceptives (COCs): Generally not recommended until around 6 weeks postpartum due to potential impacts on milk supply, but some women may be able to use them successfully after that timeframe.
- Top of Form

Table 1 : Mec Criteria for Postpartum Women

MEDICAL CONDITION		COCs & CICs	Centchroman Pills	POPs	DMPA & NET-EN	Implants	Copper IUCD	LNG-IUD
Age	Menarche to <18 yrs	1	1	1	2	1	2	2
	40 yrs & more	2	1	1	1-2[a]	1	1	1
Nulliparous		1	1	1	1	1	2	2
Postpartum breastfeeding	<48 hrs	4[b]	1	2	3	2	1	2
	48 hrs- 6wk	4[b]	1	2	3	2	3	3
	6wk- 6 months	3	1	1	1	1	1	1

Postpartum Copper intrauterine devices (PPIUCD)

The Cu-IUD can be inserted immediately post-partum after both vaginal delivery and intra-Cesarean section irrespective of the breastfeeding status of the women. After vaginal birth, insertion can occur immediately after delivery of the placenta (post-placental insertion) or up to 48hrs after birth (MEC 1) (Table 1). According to the World Health Organization Medical Eligibility Criteria, an intrauterine copper devices (IUCD) can be inserted in the 48 hours postpartum, referred to here as a postpartum IUCD (PPIUCD) (Fig 1), or after six weeks following a birth.[5] LNG-IUS post-partum, has been widely adopted in some high income countries.

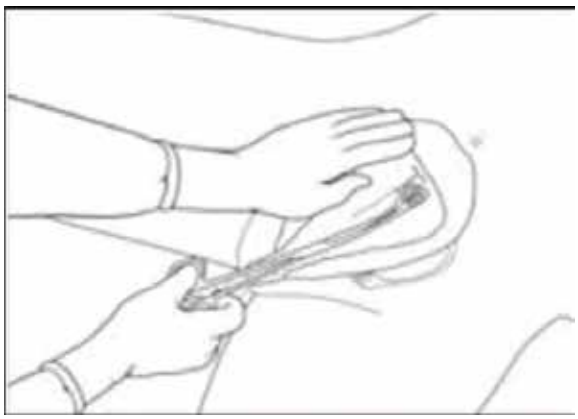

Fig 1: Post-placental IUCD Insertion

In a randomised controlled trial (RCT) decreased breastfeeding duration in the group receiving immediate insertion of the IUS was shown, and the WHO recommends MEC 2 in breastfeeding mothers and MEC 1 in non-breastfeeding mothers.[6] PPIUCDs are safe and effective contraceptive method with the benefits of increased accessibility following facility births, as PPIUCDs could be offered at health facilities after childbirth.

Benefits:

- Long-term, highly effective reversible contraceptive
- Effective immediately after insertion
- Suitable for use by most women.
- Act as emergency contraceptive if inserted within 5 days of unprotected sexual intercourse (reduce the risk of pregnancy by 99.9%)
- One-time cost-effective procedure
- No requirement of daily attention or special attention before sexual intercourse
- Immediate return of fertility upon removal of IUCD
- No drug interaction
- May help protect against endometrial and cervical cancer.

Progesterone only Contraception (POC)

For breastfeeding women under 6 weeks post-partum, the WHO recommends MEC 2 for the use of Progesterone only pills (POP) and implants and shows concerns about injectable POCs such as NET and DMPA (categorizing them as MEC 3). Recent studies are shown no significant differences

in lactogenesis and breastfeeding, and infant parameters in breastfeeding women using POP and implants.[7]

A. Progesterone only pills (Preparations):

Levonorgestrel, Norethisterone, Cerazette : 75 micro gm of desogestrel

- Suppress ovulation (97-100% with desogestrel) vs 40% with other pop
- Thick mucus plug forms in the cervix
- Increase tubal peristalsis
- Can be **taken within 12 hrs window**
- Failure rate with typical use is 1-10 pregnancy/100 women years and with perfect use is 0.3-0.9/ 100 women years.
- The POPs are not incorporated in Government of India (GOI) Contraceptive Basket.
- Side effects: Amenorrhea & irregular bleeding, headache, breast tenderness, nausea/dizziness
- Contraindications:
  - Breast cancer
  - Undiagnosed vaginal bleeding
  - Pregnancy
  - Active viral hepatitis
  - Severe chronic liver disease

B. Progesterone only Injectable contraceptive:

Depot Medroxy Progesterone Acetate (DMPA) **Antara** in national family planning Program or depot provera

- Long acting and an effective method of contraception which can be given intramuscularly or subcutaneously, recommended after 6 weeks post partum.
- Inhibits ovulation and makes cervical mucus thick thus limiting sperm penetration and changes the endometrium environment making it unfavorable for implantation.
- Available as a 1ml injection of 150mg of medroxyprogesterone acetate, given intramuscularly in buttocks or upper arm 3 monthly.

C. Progesterone Implant:

Post-partum implant insertion has now become a widely accepted long acting reversible contraception practice in many parts of the world. The ease of insertion, its relative discretion, and the fact that no internal examination is warranted, has made this a very popular post-partum method. (Fig 2)

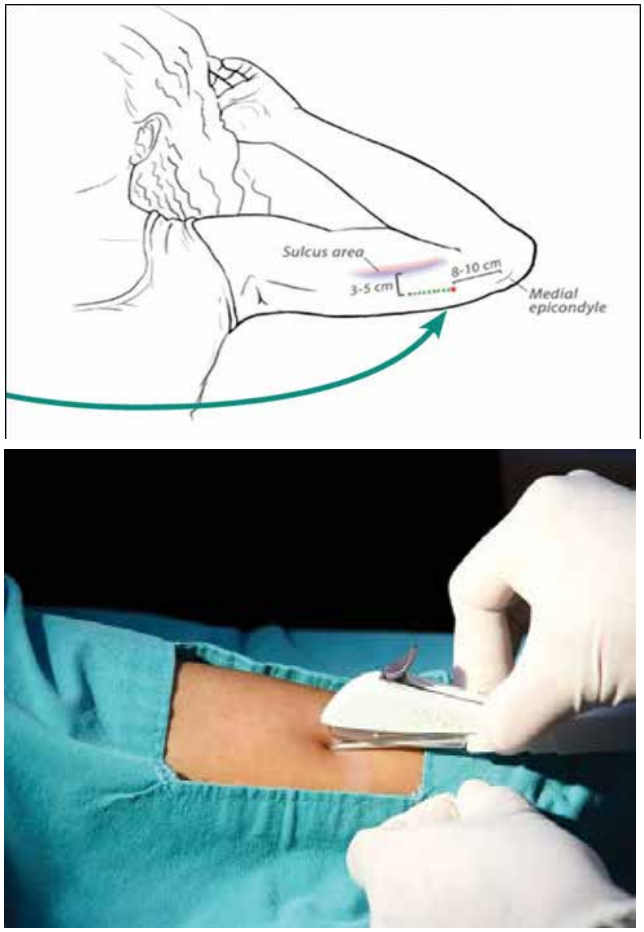

Fig 2: Site of Implanon implant insertion

The etonogestrel implant (Implanon) is a single rod progestin contraceptive placed subdermally in the inner upper non dominant hand for a period of 3 years. Return to fertility is immediate after removal. Local site erythema, bruising, pain, swelling, hematoma are some of the rare specific side effects apart from irregular bleeding. Like other progestetrone only contraception implants do not have negative impact on bone density. Studies have shown that implant insertion in post partum period before discharge from hospital have been promising in long run continuation and acceptance vs delayed insertion.[8]

Postpartum Non hormonal Contraception

Centchroman (Ormeloxifene), a reversible weekly oral contraceptive. It is a Selective estrogen Receptor Modulator (SERM) having weak estrogenic action on some organs (bone) while having strong antiestrogenic actions on uterus and breast. Currently it is available by name of **CHHAYA** in the contraceptive basket provided

by government of India. Other non-contraceptive benefits are dysfunctional uterine bleeding (DUB), mastalgia and fibroadenoma. It is a safe and effective contraception and can be taken during breast feeding.

Contraindications:

- Recent/past history of jaundice or active liver disease
- Polycystic ovarian syndrome (PCOS)
- Chronic cervicitis
- Hypersensitivity for the drug
- Chronic illness like renal disease or TB

Female Surgical Sterilisation

Female Surgical Sterilisation is an irreversible contraceptive option for women in the immediate post-partum period if this has been discussed antenatally on multiple occasions and the decision has been reached independent of the outcome for the newborn. It can be performed through a mini-laparotomy incision prior to discharge from hospital (within 7 days) or along with caesarean section.

LAM: Lactational Amenorrhea

Exclusive Breastfeeding can be an effective contraception with a high chance of failure rate.

Emergency Contraception

Women who are breastfeeding can use levonorgestrel (LNG) and combined oral contraceptive pill s regimes. Ulipristal acetate (UPA) can also be used though it is excreted in breast milk. It is recommended to express and discard the milk for one week after taking UPA (MEC 2).[5]

Conclusion

Post partum contraception has been proved to have an important role in birth spacing and thus improving maternal and child health. The majority of patients report intent to use postpartum contraception and easy accessibility as an important factor in their choice of a specific method. It needs to be emphasized in breast feeding women to reach the goal of unmet need for contraception to be zero percent by 2030.

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Safety of Common Medications in Breast-Feeding Women

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For healthcare providers and nursing mothers to make informed choices about treatment that ensures safety and efficacy as well as support a healthy breastfeeding relationship, it is essential that they understand the pharmacology of drug transfer in breast milk.

Mechanisms of Drug Entry into Human Milk

The amount of drug in breast milk depends on a number of kinetic factors[1] including:

1. Its lipid solubility
2. Molecular size of the drug
3. Levels of the drug in maternal blood
4. Protein binding
5. Its bioavailability, and
6. Its half-life in maternal circulation.

Drugs with high lipid solubility and lower molecular weight tend to concentrate more in breast milk.

Drugs with high plasma protein binding tend to be secreted in lower amount in breast milk as only the non-protein bound fraction of the drug can enter the breastmilk.[2]

Factors the influence the risk of adverse effects on the baby

Timing of Medication- Feeding the baby just before a mother takes a drug, results in the baby receiving the lowest drug concentration. This however does not apply to drugs with long half-life such as diazepam.

Age of the Infant - Drug clearance in the infant is a particularly important consideration. Premature infants have a severely limited ability to clear drugs due to immature hepatic and renal systems.[3] Table 1 provides information regarding clearance of drugs by infant:

Table 1 : Infant clearance of drugs

Post-conceptual age	Clearance of drug (compared with adults)
24-28 weeks	5%
28-34 weeks	10%
34-40 weeks	33%
40-44 weeks	50%
44-68 weeks	66%
> 68 weeks	100%

Oral Bioavailability in Infant- A drug's presence in the breastmilk does not necessarily lead to significant exposure to the infant as the oral bioavailability of the drug in the infant may be poor eg. Gentamicin.

Pregnancy and Lactation Labeling Rule (PLLR) Overview

The **Pregnancy and Lactation Labelling Rule (PLLR)** (34) was implemented by the U.S. Food and Drug Administration (FDA) to provide more detailed and helpful information regarding the use of prescription drugs during pregnancy and lactation. The rule went into effect on **June 30, 2015**, and it applies to all prescription drugs approved by the FDA.

Key Features of the PLLR

1. **Removal of Pregnancy Categories**: The traditional letter categories (A, B, C, D, X) were removed because they were often confusing and overly simplistic.
2. **Detailed Sections**: The PLLR requires the following sections to be included in the drug labeling:

- **Pregnancy**: This section includes information about the drug's effects on the fetus, human and animal data, and recommendations for use during pregnancy.
- **Lactation**: This section provides data on the drug's presence in breast milk, potential effects on the breastfed child, and guidance on drug use while breastfeeding.
- **Females and Males of Reproductive Potential**: This section covers recommendations on pregnancy testing, contraception, and infertility related to the drug.

3. **Subheadings in Each Section**:
   - **Risk Summary**: Provides a concise summary of the drug's potential risks during pregnancy and lactation.
   - **Clinical Considerations**: Includes information about the drug's effects on the mother and the fetus or infant, disease-associated maternal and/or embryo/fetal risk, dose adjustments during pregnancy and the postpartum period, and interventions that might minimize risks.
   - **Data**: Describes available data from human and animal studies and their relevance to the risks discussed.

Commonly used over the counter medications

Table 2 outlines the safety and considerations of various over-the-counter medications for breastfeeding mothers.

Table 2 : Safety of Commonly Used Over the Counter Drugs In Breastfeeding Women

Drug Category	Drug Type	Safety for Breastfeeding	Additional Notes
1. Non-opioid Analgesics	Paracetamol	Safe. Minimal transfer to breast milk.	Widely regarded as safe for infants.
	NSAIDs	Ibuprofen is considered safe due to minimal transfer to breast milk.[4]	Other NSAIDs with longer half-lives should be avoided. Prefer topical routes when possible.
2. Antihistaminic Drugs[5]	First-generation Antihistamines (e.g., Promethazine)	Use with caution.	Can cause sedation.
	Second-generation Antihistamines	Safe. Lower transfer rate and reduced sedative effects.	Cetirizine is preferred due to more available clinical data.
3. Nasal Decongestants[3]	Topical (Oxymetazoline, Phenylephrine)	Safe. Minimal absorption and low transfer into breast milk.	Generally considered safe for use during breastfeeding.
	Oral-Pseudoephedrine	Use with caution. Potential adverse effects on infants (irritability, trouble sleeping).	Considered safe for short-term use with monitoring of the infant.
	Oral-Phenylephrine	Safe. Lower transfer rate into breast milk.	Less effective than pseudoephedrine. Suitable for short-term use.
4. Gastrointestinal Ailments	Proton Pump Inhibitors	Safe. Excreted in very low amounts, substantially degraded in infant's gastrointestinal tract.[6]	Widely used for treatment of gastritis.
	Laxatives (Psyllium, Lactulose)	Safe. Bulk-forming laxatives like psyllium do not get absorbed; osmotic laxatives like lactulose are poorly absorbed.[7]	Stimulant laxatives (e.g., bisacodyl) should be used with caution due to risk of intestinal cramping.
	Drugs for Diarrhoea (Loperamide)[8]	Safe. Poorly absorbed and minimal secretion in breast milk.	Racecadotril is generally not recommended due to limited safety data.
	Probiotics (Lactobacillus, Bifidobacterium)	Safe for both mother and infant.	Used extensively in treatment of diarrhoea.

	Antiemetics[9] Ondansetron, Metoclopramide)	Safe. Secreted in small amounts in breast milk.	No significant adverse effects observed on breastfed infants.
5. Cough Syrups	Dextromethorphan[10], Guaifenesin	Safe.	Codeine is not recommended due to risk of respiratory depression in infants.[11] Diphenhydramine may cause sedation and decrease milk supply.
	Bromhexine, Noscapine	Use with caution.	Effects on breastfed infants are not well-documented.
6. Nutritional Supplements	Multivitamins, Calcium, Vitamin D, Iron, Omega-3 Fatty Acids	Safe.	Safe during lactation when taken in appropriate doses.

Lactation & Antimicrobial Agents

Anti-Bacterial Agents- Most antibiotics in clinical use are considered suitable during breastfeeding.[12]

1. Generally Safe Antibiotics

- **Penicillins** (e.g., Amoxicillin, Ampicillin)

  These antibiotics are commonly prescribed and are considered safe for breastfeeding mothers due to their low risk of adverse effects on infants and minimal transfer into breast milk.[13]

- **Cephalosporins** (e.g., Cephalexin, Ceftriaxone)

  Cephalosporins have a low concentration in breast milk with little to no bioavailability concerns.

- **Macrolides** (e.g., Azithromycin, Erythromycin)

  Known for their safety profile, macrolides are generally well-tolerated by infants in short term use, although they may occasionally cause gastrointestinal disturbances.[14]

- **Clindamycin**

  Although safe for mothers, it requires monitoring for possible gastrointestinal side effects in infants.

- **Fluoroquinolones** (e.g., Ciprofloxacin, Levofloxacin)

  Safe though advisable to monitor infants for any gastrointestinal side effects, and should be used only for short term.

- **Aminoglycosides** (e.g., Gentamicin, Tobramycin)

  The aminoglycosides are excreted in very small amounts into breast milk, and their absorption from the infant's gut is poor.

- **Nitrofurantoin**

  Safe for use in breastfeeding mothers, except in infants under one month of age due to potential risk of hemolytic anemia.[15]

2. Use with Caution

- **Sulphonamides** (e.g., Sulfamethoxazole)

  These should be used at the lowest effective dose for the shortest possible duration. Monitoring for signs of jaundice in infants is recommended.

- **Tetracyclines** (e.g., Doxycycline)

  Caution is advised due to potential risks of teeth discoloration and effects on bone growth in infants.

- **Streptomycin**

  Requires caution due to potential ototoxicity in infants, especially with long-term use.[16]

3. Not Recommended

- **Chloramphenicol**

  Potential for serious side effects, including bone marrow suppression.[17]

4. Antitubercular Drugs

- **Safe:** Isoniazid, Rifampicin, Ethambutol, and Pyrazinamide

  These are generally safe for use during lactation and have minimal adverse effects on breastfed infants.[18]

- **Caution:** Streptomycin (point 2)

Anti-Fungal Agents : Table 3

Table 3 : Safety profile of Anti-Fungal Agents

Drug	Safety Profile	Usage Notes
Fluconazole, Itraconazole, Nystatin, Terbinafine	Safe for short-term use.19, 20	Prefer topical application when possible, to reduce systemic exposure.
Ketoconazole, Griseofulvin	Use with caution due to higher systemic absorption.[21, 22]	Monitor for potential side effects; use only if clearly needed.
Voriconazole	Not recommended.[23]	Limited data on safety; alternatives should be considered.

Deworming Agents

- Commonly used deworming agents like Albendazole and Mebendazole are safe when used for short term, with minimal transfer to breastmilk.

Table 4 shows the safety profile of antimalarials

Table 4 : Drugs used for treatment of Malaria

Drug	Safety Profile	Usage Notes
Chloroquine, Hydroxychloroquine, Quinine[24]	Compatible with lactation.	Generally safe for breastfeeding mothers; minimal concerns.
Artemisinin-based Combination Therapies (ACTs)	Safe for short-term use.	Effective for treating malaria; monitor infant's response as no data on adverse effects in infants available.
Primaquine[24]	Not recommended.	Risk of hemolytic anemia; avoid during breastfeeding.
Ivermectin	Use with caution.	Seek alternatives if possible.

Antiviral Drugs

- **Acyclovir, valacyclovir, famciclovir, oseltamivir, and zanamivir** are considered safe during lactation. **Ribavirin and ganciclovir** should be used with caution. **Telbivudine** and **entecavir** are not recommended due to limited safety data.
- Most used antiretroviral drugs like **Zidovudine, lamivudine, tenofovir, efavirenz** and dolutegravir are considered safe during lactation and have been widely used by breastfeeding HIV positive mothers.[25]

Safety of Drugs used for Common Chronic Diseases

Hypertension (Table 5) Hypertensive women who are breastfeeding should be counselled that their treatment can be adapted to accommodate breastfeeding, and that the need to take antihypertensive medication does not prevent them from breastfeeding.

Due to the potential for antihypertensive agents to enter breast milk, the amount secreted in breastmilk is generally low, but mothers are advised to monitor their babies for drowsiness, lethargy, pallor, cold peripherals, or poor feeding.

General recommendations for Antihypertensive drugs[26]

- Offer enalapril to treat hypertension in women during the postnatal period, with appropriate monitoring of maternal renal function and maternal serum potassium.
- Nifedipine or amlodipine are considered safe to use in a lactating woman
- If blood pressure is not controlled with a single medicine, combination of nifedipine (or amlodipine) and enalapril can be considered
- Diuretics or angiotensin receptor blockers are better avoided by breastfeeding women
- It is advisable to use medicines that are taken once daily when possible

Table 5 Safety of antihypertensive drugs during lactation

Class of Drug	Drugs Considered Safe	Drugs to be Avoided
Thiazide Diuretics	None, however, Hydrochlorothiazide in low doses can be considered	
Loop Diuretics	Use with caution	
Calcium Channel Blockers (CCBs)	Nifedipine, Amlodipine	Avoid other Calcium channel blockers
ACE Inhibitors	Enalapril, Lisinopril, Captopril	Other ACEIs due to lack of safety data
Angiotensin Receptor Blockers (ARBs)	None	
Beta Blockers	Labetalol, Propranolol, Metoprolol, Carvedilol	Atenolol [can cause bradycardia and hypotension in infant]
Centrally Acting Antihypertensives	Methyldopa	Clonidine

Diabetes

- Insulin is naturally secreted into breastmilk and same implies for exogenous insulin. Insulin in breastmilk is thought to help in intestinal maturation of the infant.[27] It is not absorbed from the infant's gut.
- Amongst OHAs, Metformin is the preferred drug. Safety data on other drugs is limited, however glyburide and glipizide have been shown to be secreted in negligible amount in breast milk.[28]

Mental Illnesses (Tables 6, 7)

- Table 6 : Safety profile of Antidepressants[29]

Class of Drug	Drugs Considered Safe	Drugs to be Used with Caution	Drugs to Avoid
Selective Serotonin Reuptake Inhibitors (SSRIs)	Sertraline, Paroxetine	Fluoxetine	Citalopram, Escitalopram (due to higher infant plasma levels)
Tricyclic Antidepressants (TCAs)	Nortriptyline, Imipramine	Amitriptyline (less data available)	
Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs)	Venlafaxine, Desvenlafaxine		Duloxetine (limited data)

- Table 7 : Safety profile of antipsychotics in lactating women[30]

Class of Drug	Drugs Considered Safe	Drugs to be Used with Caution	Drugs to Avoid
First Generation (Typical) Antipsychotics	Haloperidol (with infant monitoring for sedation)	Other typical antipsychotics	
Second Generation (Atypical) Antipsychotics	Olanzapine, Quetiapine, Risperidone, Aripiprazole		Clozapine (risk of agranulocytosis and seizures)

Chronic Respiratory Ailments like Asthma/Chronic Bronchitis/COPD

Most drugs used to treat chronic respiratory ailments are safe for breastfeeding mothers(31):

- **Inhaled Drugs:** Short-acting beta agonists (salbutamol, levosalbutamol), long-acting beta agonists (salmeterol, formoterol), corticosteroids (budesonide, fluticasone), and anticholinergics (ipratropium, tiotropium) are preferred due to minimal systemic absorption and low breastmilk levels.
- **Oral Drugs:** Montelukast and theophylline are also safe choices.
- **Systemic Corticosteroids:** Can be used safely at doses below 20 mg per day.
- **Oral Bronchodilators:** Terbutaline should be used cautiously. Transient hypoglycemia has been observed in preterm infants.

Epilepsy

General Safety of Antiepileptic Drugs (AEDs) (Table 8)

- Most AEDs with breastfeeding data are considered safe for single-agent use during lactation(32):.
- Long-term follow-up shows no developmental problems in breastfed infants whose mothers used carbamazepine, lamotrigine, phenytoin, or valproate.
- There is limited data on long-term outcomes for other AEDs and various drug combinations.

Benefits of Folic Acid:

- Periconception use of folic acid improves intellectual outcomes in infants of mothers taking AEDs.

Monitoring and Adverse Reactions:

- Infants whose mothers take AEDs should be monitored for:
  - Apnea
  - Drowsiness
  - Adequate weight gain
  - Developmental milestones
- Monitoring is especially important for younger, exclusively breastfed infants and when multiple AEDs are used.

Risk of Hypersensitivity Reactions:

- AEDs have a higher risk of causing hypersensitivity reactions, including Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN), particularly in children.
- Breastfed infants should be carefully observed for any rashes.

Table 8 : Safety profile of Antiepileptic drugs in breastfeeding women

Category	Medications	Notes
Safe Options	Carbamazepine, Valproic Acid, Levetiracetam, Lamotrigine, Phenytoin, Gabapentin	Monitor for sedation, jaundice, feeding issues
Caution Advised	Topiramate, Oxcarbazepine, Clonazepam, Zonisamide, Ethosuximide, Primidone	Use if benefits outweigh risks
Avoid if Possible	Felbamate, Vigabatrin	Insufficient data, potential risks

Thyroid disorders

- Levothyroxine is secreted in very low levels in breastmilk and not expected to have any adverse effects on infant.
- Propylthiouracil has low transfer to breastmilk and is the preferred drug in breastfeeding, but lowest possible dose should be used. (33) Methimazole in doses less than <30mg per day can be used with monitoring of infant for any rash.
- Carbimazole should be avoided.

Thromboembolic disorders

- **Antiplatelets Drugs-** low dose Aspirin is acceptable in lactation; higher doses can cause Reye's syndrome in children. The safety of Clopidogrel is not well established, hence use with caution.
- **Anticoagulants-** Most used anticoagulants- Warfarin, Heparin and Enoxaparin- are all safe in lactation due to very minimal transfer to breastmilk.

Practice Points for Prescribing Medications to Breastfeeding Women

1. **Risk vs. Benefit:** Always weigh the drug's benefits against potential risks to the infant.
2. **Safe Medication Choices:** Opt for medications with low transfer to breast milk and a proven safety profile.
3. **Use Trusted Resources:** Keep up-to-date by consulting the latest guidelines and safety resources. These include LactMed, The Breast Feeding Network, UK Drugs in Lactation Advisory Service (UKDILAS), The American Academy of Pediatrics (AAP) Policy Statement.
4. **Infant Monitoring:** Watch the infant for changes in feeding, behaviour, or growth.
5. **Minimal Dosage:** Prescribe the lowest effective dose for the shortest possible duration.
6. **Strategic Timing:** Schedule medication doses to reduce the infant's exposure. Feed the infant just before taking the medication.
7. **Educate the Mother:** Discuss potential side effects and signs to watch for in the baby.
8. **Explore Alternatives:** Consider non-pharmaceutical options or safer alternatives if needed.
9. **Follow-Up:** Regularly reassess the health of

both mother and infant, adjusting treatment as necessary.

10. **Prioritize Maternal Health:** Ensure the mother's health is not compromised by withholding necessary medication.

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JOURNAL SCAN

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How the Marketing Practices of Commercial Milk Formula Companies Impact Infant Breastfeeding Practices in China

BMJ Global Health ; BMJ Glob Health 2023;8:e012803. doi:10.1136/ bmjgh-2023-012803

Zhonghai Zhu, Anuradha Narayan, Shuyi Zhang et al

As recommended by the WHO and UNICEF, optimal breast feeding is to initiate breast feeding within the first hour after birth, ensure exclusive breast feeding for 6 months, and continue breast feeding up to 2years of age or beyond with diverse complementary foods introduced after 6months. Breast milk has wide-ranging benefits, including decreased morbidity and mortality from infections, lowered risk of overweight and obesity, improved cognitive development and decreased maternal deaths due to breast and ovarian cancers and type 2 diabetes.

However, suboptimal breastfeeding practices are widely prevalent across the world. Globally, 60% of babies are not breastfed in the first hour, and almost 60% of infants are not exclusively breastfed, contributing to more than 800000 child deaths annually. Moreover, many infants aged 0–23 months are fed, at least in part, using commercial milk formula (CMF).A recent analysis using national data from 126 countries showed that each additional kilogram of CMF sold per child annually was associated with 1.9 (95% CI 1.5 to 2.2) percentage points lower in the breast feeding rate at age 1.

To limit the impact of CMF marketing on breast feeding, WHO with the support of Member States developed The International Code of Marketing of Breast Milk Substitutes and its subsequent resolutions (hereinafter the Code) for regulating inappropriate marketing and promotion of CMF. However, the weak adoption of the Code in countries, particularly in countries like China that have no administration rules of the Code, resulted in significant violations by CMF manufacturers.

A cross-sectional survey conducted in Mexico in 2021 quantitatively showed that more than 93% of parents reported exposure to digital CMF marketing and that parents seeing higher number of digital adds had lower likelihood of exclusively breast feeding their children and higher risk of feeding CMF. Taken together, as indicated in the 2023, breastfeeding series in the Lancet, the marketing and distribution practices of CMF manufacturers have been a major deterrent for optimal breastfeeding practices. However, the pathways remain unclear as to how the specific types of CMF marketing practices, including online message dissemination and active outreach to mothers, result in suboptimal breastfeeding.

METHOD

A cross-sectional survey was conducted in Beijing and Jinan in 2020, two relatively developed cities in China, through face-to-face interviews using a tablet assisted software (CAPI) delivered by a trained team.

Mothers or pregnant women under 18 years old, or having major health issues that may affect infant feeding, were excluded. In addition, for mothers who had multiple children, information on breastfeeding practices was collected only for the youngest child. Finally, participants were recruited in local clinics and

healthcare facilities and/or street-based such as in shops, supermarkets, department stores and health stores.

Written informed consent was obtained from all participants after explaining the purpose of the survey.

Mothers were interviewed about their current breastfeeding practices for their youngest child. Specifically, mothers were asked by 'how are you currently feeding your youngest baby?', with possible answers of (1) breast milk only since birth, (2) formula only since birth, (3) both breast feeding and formula feeding from birth, (4) breastfed first and now I am formula feeding, (5) breastfed first and now I am breast feeding and giving formula, (6) breast feeding and formula feeding first and now I am giving formula and (7) breast feeding and formula feeding first and now I am breast feeding. Two categorical outcomes were derived using the information above. Predominant breast feeding was defined as infants born to mothers who answered breast feeding only from birth, and any breast feeding was accordingly defined as those who received some breast milk. In addition, the mothers' and pregnant women's attitude towards the benefits and use of breast milk and CMF was also captured using a set of five statements: (1) formula-fed babies have improved growth compared with breastfed babies, (2) breast feeding and formula feeding provide a baby with the same health benefits, (3) formula helps babies sleep better, (4) formula is very similar to breast milk and (5) formula keeps babies fuller for longer. A principal component analysis was then applied to these questions and the factor score was used to assess maternal attitude towards the use of formula milk, with higher scores indicating a positive attitude or perception towards CMF feeding. The scores obtained were further categorised into mild, medium and strong attitudes by tertiles.

In the present study, we reviewed the relevant marketing practices of CMF companies and combined similar practices into several categories, which are summarised below

1. **Social media messaging on CMF**

   Mothers and pregnant women reported receiving WeChat messages, Weibo messages, emails or other forms of social media messages from CMF companies.

2. **Online engagement with CMF companies**

   Mothers or pregnant women reported engaging with CMF companies' online activities, such as using their web applications/software, following their official social media accounts, and actively communicating with CMF companies.

3. **CMF promotions and discounts**

   Mothers or pregnant women reported seeing special promotions and discounts for formula and baby products such as teats, toys and clothes.

4. **Targeted CMF advertisements**

   Advertisements for CMF were included on the websites and social media channels frequently used by mothers or pregnant women to receive information on how to feed babies.

5. **Feeding suggestions from CMF salespersons**

   The mothers or pregnant women reported receiving feeding suggestions from the salespersons of CMF companies who were not healthcare professionals.

6. **Free formula samples distributed in hospitals**

   Finally, the mothers or pregnant women reported receiving free formula samples in hospitals.

The other covariables were also collected through face- to-face interviews with mothers and pregnant women, including their level of education, occupation, mode of delivery etc.

RESULTS

A total of 750 mothers were interviewed, with 20.0% of mothers predominantly breast feeding their young children. Two marketing practices, online engagement with CMF companies and promotions and discounts, were statistically associated with a lower likelihood of predominant breast feeding, with an adjusted ORs of 0.53 (95% CI 0.35 to 0.82) and 0.45(95% CI 0.22 to 0.92). Furthermore, per CMF marketing practice increase mothers concurrently exposed to was associated with a 0.79 (95% CI 0.68 to 0.92) times lower likelihood of predominant breast feeding. In addition, online engagement and free formula samples distributed in hospitals had indirect effects on suboptimal breastfeeding outcomes, which was partly mediated by positive maternal attitude towards CMF.

CONCLUSION

CMF marketing practices were associated with a lower likelihood of optimal breastfeeding through influencing the maternal attitude towards CMF.

Breast-feeding as protective factor against bronchopulmonary dysplasia in preterm infants

British Journal of Nutrition (2024), 131, 1405–1412 doi:10.1017/S0007114523002982

Jose Uberos, Isabel Sanchez-Ruiz, Elizabeth Fernández-Marin et al

Bronchopulmonary dysplasia (BPD) is a chronic lung disease of the premature newborn. It is characterised by abnormal lung development provoked by factors such as mechanical ventilation, oxygen therapy or poor nutrition . Advances in the care of premature infants and the increased survival of the most immature ones have resulted in an increased incidence of BPD, which now affects about 50 % of those born with less than 30 weeks of gestational age. In accordance with the thresholds proposed by NIHCD, BPD is defined as a need for supplemental oxygen > 21 % positive airway pressure.

Nutrition is known to modulate lung development and studies based on experimental models have shown that malnutrition heightens the alveolar damage caused by hyperoxia. In this regard, early enteral nutrition, especially nutrition in the early neonatal period, may be decisive in conditioning neurological and pulmonary development . Insufficient nutritional intake in the first week of life can produce long-lasting damage to lung development, maturation and repair in extremely preterm infants, in whom alveolisation of the lung occurs mostly or entirely after birth

Breast milk is considered the best nutrition for all newborns during the first 6 months of life, including those who are very low birth weight (VLBW) and premature, who often require protein and energy supplements

The aim of this study was to analyse a cohort of VLBW newborns to determine whether breast milk nutrition during the first weeks of life is associated with a lower prevalence and severity of BPD.

METHODS

A retrospective study was conducted to record the intake of mother's own milk (MOM), pasteurised donor human milk or preterm formula milk in the first 2 weeks of postnatal life of 566 VLBW newborns at a hospital in Spain during the period January 2008–December 2021 after decinding upon the inclsuon and exclusion factors.

RESULTS

Out of the total population , those with BPD were 195 (39·8 %) and those with no BPD were 294 (60·2 %). On average, the gestational age of neonates in the sample was 29·6 (± 2·3) weeks of gestation, and their birthweight was 1241 g (±317). Enteral fluid intake in the first week of life was significantly lower in neonates with BPD, who received significantly greater volumes of parenteral nutrition . 48·6% of the newborns received MOM in the first week of life; in 21·4 % of the cases this nutrition was supplemented with DHM. During the second week of life, 64·2 % of the newborns received MOM and 16·7 % of the cases this nutrition was supplemented with DHM. The remaining newborns received premature formula, 51·5 % during the first week of life and 35·8 % during the second week.

A statistically significant proportion of newborns who developed BPD had not received MOM nutrition in the first weeks of life (61·0 % v. 66·6 %) . After applying the relevant exclusion criteria, data for 489 VLBW infants were analysed; 195 developed some degree of BPD. Moderate or severe BPD was associated with less weight gain. Moreover, the preferential ingestion of breast milk in the first and second postnatal weeks had effects associated with lower OR for BPD, which were statistically demonstrable for mild (OR 0·16; 95 % CI 0·03, 0·71) and severe BPD(OR 0·08; 95 % CI 0·009, 0·91).

Ongoing research into the pathogenesis of BPD examines the potential value of human milk in preventing and controlling this neonatal complication. Antioxidant activity may be the main mechanism by which breast milk decreases the risk of BPD. Although BPD is multifactorial in origin, it has been suggested that the association between breastfeeding and BPD is related to the presence of antioxidant components such as the exosomes in breast milk, which exert a protective role on the type II alveolar epithelium. From an epidemiological standpoint, the prevalence of late sepsis and NEC is reported to be lower in VLBW infants fed with breast milk, due to the shorter period spent in the neonatal intensive care unit, with fewer days of mechanical ventilation and oxygen therapy, and hence a lower risk of BPD, observations in line with this study results. Moreover, the anti-inflammatory factors present in breast milk may not only reduce inflammation but also strengthen the immune response and thus decrease the prevalence of late-onset sepsis

CONCLUSION

Breast-feeding during the first weeks of postnatal life is associated with a reduced prevalence of BPD, which is frequently associated with less weight gain as a result of greater respiratory effort with greater energy expenditure.

QUIZ TIME

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1. The amount of the drug in the breast milk is dependent upon one of the following factors:
A. Molecular size of the drug
B. Its lipid solubility / protein binding
C. Levels of the drug in the maternal blood
D. All of the above

2. Which statement regarding the advantages of breast milk is false ?
A. Breastmilk lowers the risk of infections and NEC
B. Breast milk prevents childhood obesity
C. Breast milk has no effect on emotional development of child
D. Breast milk reduces the risk of childhood asthma

3. The most important hormones for breast feeding ?
A. Prolactin and estrogen B. Prolactin and oxytocin
C. Prolactin and Progesterone D. All of the above

4. Which of the following statements regarding the breast feeding is true ?
A. Breastfeeding causes delay in ovulation in almost all the mothers who exclusively breastfeed
B. Breastfeeding mothers gain more weight due to increased calorie requirement during breast feeding .
C. Breast feeding does causes delayed emotional bond between the mother and the baby as mother is always exhausted
D. WHO recommends exclusive breast feeding till 9 months of age.

5. What is the meaning of acronym BFHI?
A. Breast feeding healthy initiative
B. Breast feeding Habits in India
C. Baby friendly health initiative
D. Baby friendly hospitals in India

6. Where was the first milk bank established in Asia?
A. India B. China C. Russia D. Singapore

7. When should the normal infant put on the breast after birth ?
A. Within 3 hours of birth B. Within 2 hours of birth
C. Within 1 hour of birth D. When mother has rested

8. Should an exclusively breast fed baby given water to drink ?
A. When it is very hot , baby should be given water
B. Baby should not be given water at all in first 6 months
C. When baby does not want to have breast milk, then baby should be given water
D. Baby should be given warm water in between breast milk

9. Signs of good attachment ?
A. It is painful for the mother
B. Baby's chin does not touch the mother's breast
C. Baby's head is turned to one side
D. The nipple and most of the areola are into the baby's mouth

10. According to the latest NFHS IV , what is the percentage of breastfeeding rates in our country?
A. 55% B. 64% C. 73% D. 80%

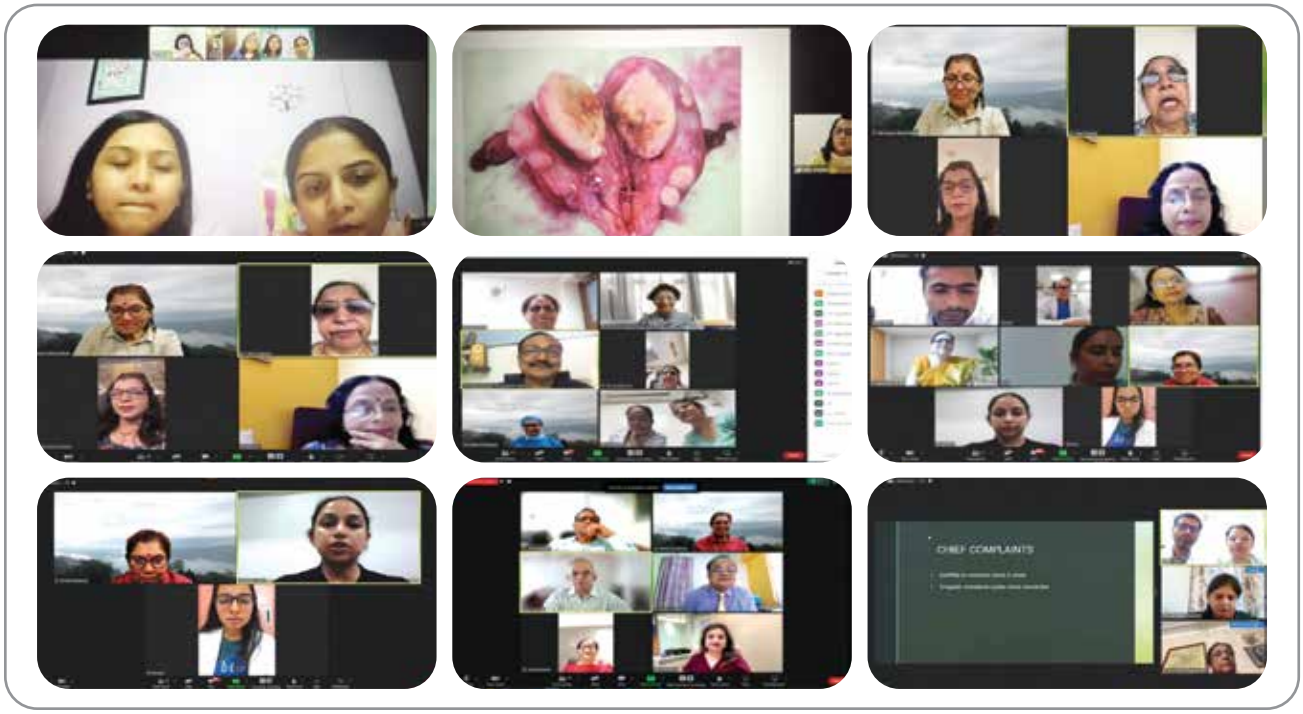
Ans 1 : D, Ans 2 : C, Ans 3 : B, Ans 4 :A, Ans 5 : C, Ans 6 : A, Ans 7 : C, Ans 8 : B, Ans 9 : D, Ans 10 : B.

ACTIVITIES HELD UNDER NARCHI IN JULY 2024

GURUKUL CLASSES HELD ON 5th – 7th JULY, 2024

Gurukul classes organized by Institute of Obstetrics & Gynaecology, were held for post graduate students at Sir Ganga Ram Hospital on 5th – 7th July, 2024. The Gurukul was attended by approximately 80 delegates.

It was an interactive session with lots of take home messages.



CME ON CONTRACEPTION HELD ON 11th July, 2024

NARCHI Delhi Chapter organized CME on Conraception at Sir Ganga Ram Hospital, New Delhi to celebrate world population day.

We were blessed by our Chief Guest – Dr. Jyoti Sachdeva & Guest of Honor - Dr. Jayashree Sood. We had inputs from experienced chairpersons like – Dr. Kanwal Gujral, Dr. Harsha Khullar, Dr. Kanika Jain, Dr. Mamta Dagar, Dr. Richa Sharma, Dr. Nidhi Khera, Dr. Seema Prakash & Dr. Jaya Chawla. We were lucky to have star speakers who enlightened us on topics of "Role of E2V/DNG – A novel quadriphasic regimen in management AUB O-AUB E" by Dr. Mala Srivastava, "Newer methods of contraception introduced in GOI Basket" by Dr. Dr. Anita Rajorhia. Case based Panel Discussions were held on Contraceptives in Special Scenarios by Dr. Geeta Mediratta & Dr. Chandra Mansukhani, moderated by – Dr. Kavita Aggarwal and panelists were Dr. Sharmistha Garg, Dr. Purvi Khandelwal, Dr. Huma Ali, Dr. Renuka Brijwal & Dr. Vidhi Chaudhary. The CME was attended by approximately 50 delegates.

It was an interactive session with lots of take home messages.




PUBLIC AWARENESS LECTURES ON RESPECTFUL MATERNITY CARE HELD ON 14TH JULY, 2024

NARCHI DELHI CHAPTER - Together with Institute of Obstetrics & Gynaecology and Institute of Anaesthesiology, Pain & Perioperative Medicine, Sir Ganga Ram Hospital, New Delhi organized Public Awareness Lectures on Respectful Maternity Care at Sir Ganga Ram Hospital, New Delhi on 14th July 2024.

It was attended by 8 antenatal patients along with their husbands, an interactive session was held where basics of "Antenatal Care" was taken by Dr. Sharmistha Garg, "Introduction To Labour Analgesia" was taken by Dr. Anjeleena Gupta, "Dietary Management" was taken by Dr. Vandana, "Physiotherapy In ANC" was taken by Dr. Indu (PT) & Dr. Deepti Pandey (PT), "Breast Feeding" was taken by Ms. Neha along with Mrs. Priya Gandhi & "Labour Care Bundle" was taken by S/N Sarita Samul. The topics were discussed in detail and all the related queries were answered. This sessions of Public Awareness Lectures was highly appreciated.

It was an interactive session and all the delegates really appreciated the event.




PUBLIC AWARENESS ON WPD (WORLD POPULATION DAY) WAS HELD IN THE FORM OF PAKHWADA UNDER THE AEGIS OF NARCHI DELHI CHAPTER AT SIR GANGA RAM HOSPITAL.

The theme decided by the government of India was "Healthy timing & spacing of pregnancies for well being of mother & child".

The activity was conducted in two phases, each lasting a fornight.

First Pakhwada was on "Dampati Sampark Pakhwada" or "Mobilization Fortnight" organized from 27th June to 10th July 2024.

Second Pakhwada was on "Jansankhya Sthirta Pakhwada" or "Service Provisioning Fortnight" organized from 11th July to 24th July 2024.

Pakhwada was attended by the reproductive population of Delhi and it was very well appreciated.

ACTIVITIES HELD UNDER NARCHI IN AUGUST 2024

PUBLIC AWARENESS LECTURES ON RESPECTFUL MATERNITY CARE HELD ON 14TH AUG, 2024

NARCHI DELHI CHAPTER - Together with Institute of Obstetrics & Gynaecology and Institute of Anaesthesiology, Pain & Perioperative Medicine, Sir Ganga Ram Hospital, New Delhi organized Public Awareness Lectures on Respectful Maternity Care at Sir Ganga Ram Hospital, New Delhi on 14th August 2024.

It was attended by 8 antenatal patients along with their husbands, an interactive session was held where basics of "Pregnancy of Labour" was taken by Dr. Sharmistha Garg, " Labour pain is the most painful experience in a woman's life" was taken by Prof. (Dr.) Anjeleena Kumar Gupta, "Dietary Management" was taken by Dr. Vandana, "Role of Physiotherapy" was taken by Dr. Deepti Pandey (PT), "Breast Feeding"

was taken by Mrs. Priya Gandhi & "The Maternity Bag" was taken by S/N Sarita Samul. The topics were discussed in detail and all the related queries were answered. This sessions of Public Awareness Lectures was highly appreciated.

It was an interactive session and all the delegates really appreciated the event.

ACTIVITIES HELD UNDER NARCHI IN SEPTEMBER 2024

PUBLIC AWARENESS LECTURES ON RESPECTFUL MATERNITY CARE HELD ON 14TH Sept, 2024

NARCHI DELHI CHAPTER - Together with Institute of Obstetrics & Gynaecology and Institute of Anaesthesiology, Pain & Perioperative Medicine, Sir Ganga Ram Hospital, New Delhi organized Public Awareness Lectures on Respectful Maternity Care at Sir Ganga Ram Hospital, New Delhi on 14th September 2024.

It was attended by 8 antenatal patients along with their husbands, an interactive session was held where basics of "Pregnancy of Labour" was taken by Dr. Sharmistha Garg, " Labour pain is the most painful experience in a woman's life" was taken by Prof. (Dr.) Anjeleena Kumar Gupta, "Dietary Management" was taken by Dr. Vandana, "Role of Physiotherapy" was taken by Dr. Deepti Pandey (PT), "Breast Feeding" was taken by Mrs. Priya Gandhi & "The Maternity Bag" was taken by S/N Sarita Samul. The topics were discussed in detail and all the related queries were answered. This sessions of Public Awareness Lectures was highly appreciated.

It was an interactive session and all the delegates really appreciated the event.


PUBLIC AWARENESS PROGRAM ON MENSTRUAL HEALTH IN ADOLESCENTS HELD ON 21ST Sept, 2024.

Under the aegis of NARCHI Delhi Chapter Institute of Obstetrics and Gynaecology, Sir Ganga Ram Hospital organized a public awareness program and adolescent health at Children Hope Prayas, Anand Parbat. Relevant Topics concerning adolescent health like hormonals changes and menstrual hygiene were discussed by the senior consultant Dr. Chandra Mansukhani, the workshop attended by 75 adolescent girls, all of whom eagerly participated in the discussion.





NARCHI DELHI 2024

30th Annual Conference of National Association for Reproductive & Child Health of India (NARCHI)-Delhi Branch

Organized by: Institute of Obstetrics & Gynaecology
Sir Ganga Ram Hospital, New Delhi

Venue: Hotel The Lalit, New Delhi

Theme: "Be Aware-Adopt-adhere to the protocols"

04th-06th October 2024

Conference Brochure

GetSet Conferences & Incentive Travels

Welcome Message

Respected Seniors and Colleagues,

On behalf of the ***National Association for Reproductive & Child Health of India (NARCHI) - Delhi Chapter****, it is our great pleasure to welcome you to attend the 30th Annual Conference scheduled from* ***October 4th – 6th, 2024****, at Hotel The Lalit, New Delhi. There will be pre-conference workshops on 4th October 2024.*

The theme for this conference is ***"Be Aware-Adopt-adhere to the protocols"****. This event promises to be an enriching experience, bringing together experts, professionals, and stakeholders from diverse fields to exchange knowledge, share best practices, and explore innovative solutions in reproductive and child health.*

The conference will feature a comprehensive program comprising keynote sessions, panel discussions, and poster presentations covering various aspects of reproductive and child health, including but not limited to maternal health, family planning, newborn care, adolescent health, and nutrition.

This gathering presents an invaluable opportunity for networking, collaboration, and professional development. By participating in the conference, you will have the chance to engage with leading experts, gain insights into the latest research and developments, and contribute to shaping the future of reproductive and child health in India.

We sincerely hope that you will join us in New Delhi for this significant event and contribute to making it a grand success.

We look forward to your active participation

Warm regards,

Organising Committee
NARCHI Delhi Chapter

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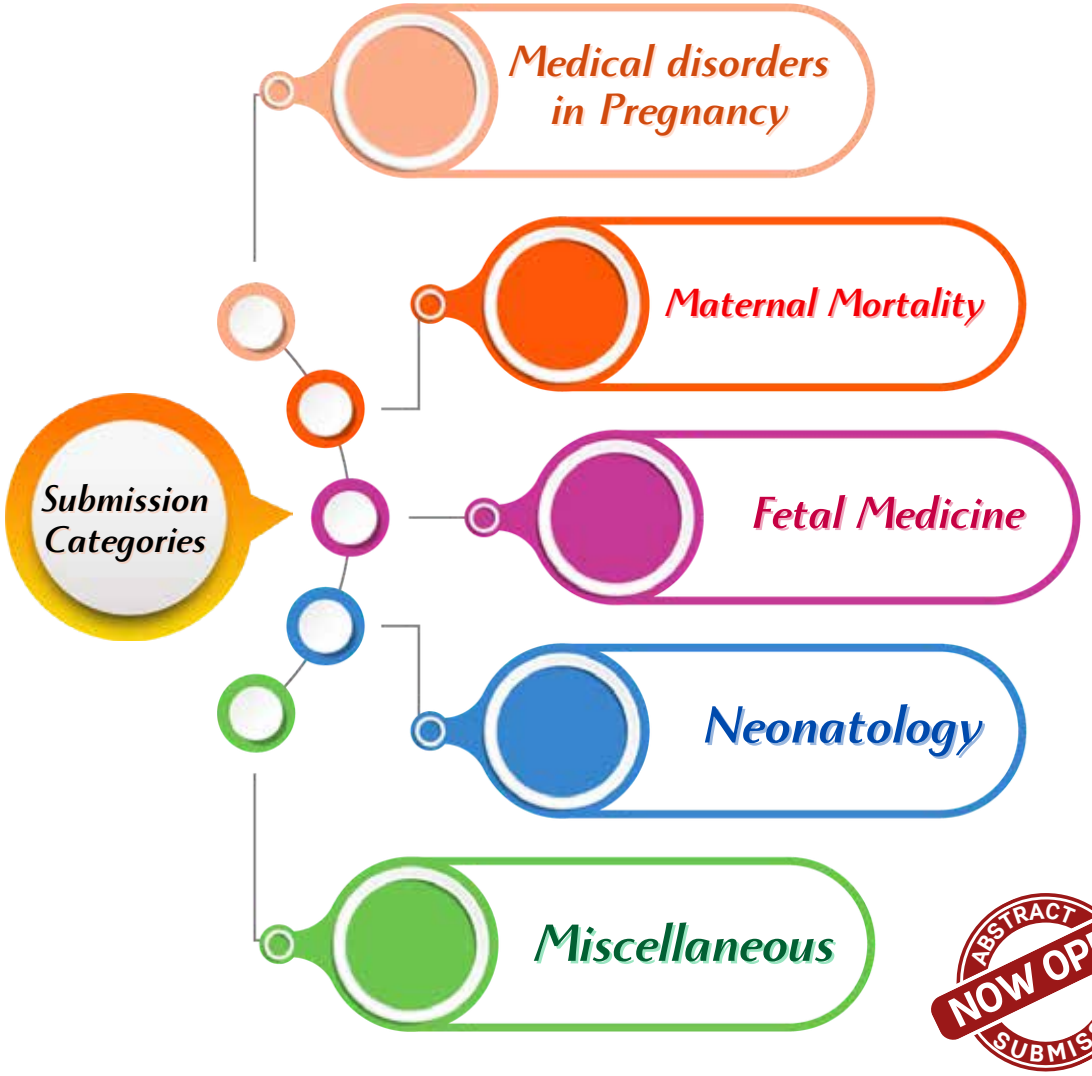
Dr. Purvi Khandelwal
(Outreach Committee)

Mrs. Uma Bhalla
(Outreach Committee)

Ms. Josephine Cyril
(Outreach Committee)

Abstract Submission

NARCHI Delhi 2024 invites free paper / scientific research / abstracts to be presented in the conference. The scientific committee shall review each abstract and the presenters shall be notified of the outcomes and successful authors shall be invited to present poster / papers depending upon originality and appeal of the scientific work.



IMPORTANT DATES

The last date for Early Bird Registration is
31st July 2024

The last date for abstract submission is
31st August 2024

WORKSHOPS

Workshop Name	Date	Venue	Convener	Co-Covener
Obstetrics Skill Workshop	03-10-24	Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi	Dr Aruna Nigam	Dr Nidhi Gupta
Video Workshop on Urogynaecology	03-10-24	Auditorium, Sant Parmanand Hospital, Civil Lines, Delhi	Dr Sonal Bathla	Dr Uma Rani Swain
Endoscopy	03-10-24	Sir Ganga Ram Hospital	Dr Punita Bhardwaj	– –
Criticalcare in Obstetrics	04-10-24	Safdarjung Hospital	Dr Jyotsna Suri	Dr Rekha Bharti
Stillbirths: Decoding the Enigma	04-10-24	BLK Max Hospital	Dr Nidhi Khera	Dr Kumar Ankur
Preventive Oncology	04-10-24	Hotel The Lalit, New Delhi	Dr Urvashi Miglani	– –
Intrapartum fetal monitoring workshop: CTG	04-10-24	Hotel The Lalit, New Delhi	Dr Mamta Dagar	Dr Purvi Khandelwal
Neonatology	04-10-24	Hotel The Lalit, New Delhi	Dr Pankaj Garg	– –
Fine tuning ovarian stimulation for practising Gynecologist	04-10-24	Hotel The Lalit, New Delhi	Dr Shweta M. Gupta	– –
FP Services: Expanding choices, Ensuring Rights	04-10-24	Hotel The Lalit, New Delhi	Dr Sumita Mehta	Dr Anshul Rohatgi

Visit our Website For More Details

www.narchidelhi2024.com

Registration Details

REGISTRATION FEE

Registration Categories	Early Bird Registration (Till 31st July 2024)	Regular Registration (till 15th Sept. 2024)	On Spot Registration (16th Sept. onwards)
Conference	INR 5000	INR 6000	INR 7000
Combo (Conference +Workshop)	INR 6000	INR 7000	INR 8000
Conference (PG students)	INR 4000	INR 5000	INR 6000
Combo (Conference +Workshop) for (PG students)	INR 5000	INR 6000	INR 7000

Terms & Conditions

- *The GST Inclusive on the registration fee*
- *Registration fee includes access to scientific sessions, trade exhibition, conference lunches, & the conference kit*
- *Organizing Committee shall not liable in any form in case of changes in date / venue due to unforeseen reasons.*
- *PG Student need bonafide certificate from the HOD*

Cancellation & Refund Policy

- *100% refund - the congress secretariat must receive a notification of cancellation in writing at least 30 days before the event. This will entitle the delegate to a 100% refund of money paid after deduction of taxes.*
- *No refund - 100% cancellation fee will be charged for any cancellations made within 29 days before to the event date.*
- *For PG Students bonafide certificate required from the Head of department or institute.*
- *Guidelines for Becoming a Life Member of NARCHI:*
- *Those who are opting for the membership combo option have to fill out the Life Membership Form click here to download and send the scanned copy of the membership form to narchidelhisgrh@gmail.com along with the registration payment receipt.*

All cancellations and requests for refund must be in writing to conference secretariat at narchidelhi2024@gmail.com

Account Details

- ***Bank Name:*** *Central Bank of India*
- ***A/C Name:*** *NARCHI DELHI BR*
- ***A/C No.:*** *3529874897*
- ***Branch:*** *Lady Harding Medical College & Hospital*
- ***IFSC Code:*** *C B I N 0 2 8 3 4 6 2*

REGISTRATION FORM

NARCHI DELHI 2024

30th Annual Conference of National Association for Reproductive & Child Health of India (NARCHI)-Delhi Branch

Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi

Theme: "Be Aware-Adopt-adhere to the protocols"

Date: 04th-06th October 2024 | Venue: Hotel The Lalit, Connaught Place, New Delhi

Title (Mr, Ms, Mrs, Dr, Prof) ..... **First Name** .....

Middle Name ..... **Last Name** .....

Membership No. ..... **Gender** .....

Registration Category .....

E-Mail ID .....

Designation .....

Hospital/Institute .....

Home Address .....

PIN Code ..... **Mobile No.** .....

Workshops

• Criticalcare in Obstetrics	• Endoscopy	• Obstetrics Skill Workshop	• Video Workshop on Urogynaecology
• Stillbirths: Decoding the Enigma	• Preventive Oncology	• Intrapartum fetal monitoring workshop: CTG	• Neonatology
• Fine tuning ovarian stimulation for practising Gynecologist		• FP Services: Expanding choices, Ensuring Rights	

TERMS AND CONDITIONS

- The GST Inclusive on the registration fee
- Registration fee includes access to scientific sessions, trade exhibition, conference lunches, & the conference kit
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- PG Student need bonafide certificate from the HOD

Account Details

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A/C No.: 3529874897
Branch: Lady Harding Medical College & Hospital
IFSC Code: CBIN0283462

CANCELLATION POLICY

- 100% refund - the congress secretariat must receive a notification of cancellation in writing at least 30 days before the event. This will entitle the delegate to a 100% refund less bank/card charges.
- No refund - 100% cancellation fee will be charged for any cancellations made within 14 days prior to the event date.
- All cancellations and requests for refund must be in writing to conference secretariat at **vinod@getsetevents.in**

Please send completed Registration form & Payment detail to

Conference Secretariat:
Ms. Asha (M.) +91 99585 18712, +91 88825 13527
Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, Rajinder Nagar, New Delhi-110060
Ph: 011 42251768, email- **narchidelhi2024@gmail.com**, **www.narchidelhi2024.com**

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30th Annual Conference of National Association for Reproductive & Child Health of India (NARCHI)-Delhi Branch

04TH-06TH October 2024

Organized by Institute of Obstetrics & Gynaecology
Sir Ganga Ram Hospital, New Delhi

Theme: "Be Aware-Adopt-adhere to the protocols"

NARCHI DELHI 2024

Venue: Hotel The Lalit New Delhi

REGISTRATIONS AND ABSTRACT SUBMISSION ARE NOW OPEN

Abstract Submission Categories:

- Medical disorders in Pregnancy
- Maternal Mortality
- Fetal Medicine
- Neonatology
- Miscellaneous

REGISTER NOW

Conference Secretariat:
Dr. Mala Srivastava (Organising Chairperson)
Dr. Chandra Mansukhani (Organising Chairperson)
Dr. Geeta Mendirata (Organising Chairperson)
Dr. Kanika Jain (Organising Secretary)
Institute of Obstetrics & Gynaecology
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NARCHI DELHI CHAPTER

Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi

You are well aware that the International Community Celebrates 11th July every year as World Population Day. The Govt. of India has been giving due emphasis to the issue of Population Stabilization and all states observe a month long campaign in the month of June and July every year.

The theme for this year World Population Day

"Healthy timing & spacing of pregnancies for wellbeing of mother and child".

The National Slogan for WPD 2024 has been themed as follows:

Viksit Bharat Ki Nayi Pehchan Parivar Niyojan har Dampati Ki Shaan

विकसित भारत की नई पहचान परिवार नियोजन हर दम्पति की शान

The activities are spread over two phases each lasting a fortnight, the **first one** dedicated to demand generation and **second one** dedicated to intensified service delivery.

The details of the fortnights to be observed are as follows:

Phase I: First Pakhwada (Fortnight) as the "**Dampati Sampark Pakhwada**" or "**Mobilization Fortnight**" from 27th June, 2024 to 10th July, 2024.

Phase II: Second Pakhwada "**Jansankhya Sthirta Pakhwada**" or "**Service Provisioning Fortnight**" from 11th to 24th July, 2024.

NARCHI DELHI 2024

SANT PARMANAND HOSPITAL

30th Annual Conference of National Association for Reproductive & Child Health of India

Theme: "Be Aware-Adopt-adhere to the protocols"

VIDEO WORKSHOP ON UROGYNAECOLOGY

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 3rd October 2024
Time: 08:00 - 04:00 PM

Venue: Auditorium, Sant Parmanand Hospital, Civil Lines, Delhi

Convener : Dr. Sonal Bathla
Co-Convener : Dr. Uma Rani Swain

Chief Guest : Dr. Sharda Jain

Guest of Honour: Dr. Ashok Kumar, Dr. Nirmala Agarwal

	REGISTRATION	
	WELCOME ADDRESS AND INTRODUCTION	**MOC: Dr. Anju Bala**

Time	TOPIC	Speaker	Chairpersons
Session 1- Ascending Beyond : The Art & Science of Non Descent Vaginal Hysterectomy			
9:00 - 9:20 am	The Art of Vaginal Surgery: An Anatomical Approach	Dr. Monika Gupta	Dr. Sharda Jain, Dr. N B Vaid, Dr. Indu Chawla, Dr. Neha Mishra, Dr. Shalu Jain, Dr. Mohini Agarwal
9:20 - 9:40 am	Non Descent Vaginal Hysterectomy: Surgical Dilemmas	Dr. Sonal Bathla	
9:40 - 10:30 am	Panel: NDVH unveiled: Expert Perspectives & Practices	Dr. Sweta Balani Dr. Priti Arora Dhamija	Dr. Rajeshree Jain, Dr. A.G Radhika, Dr. Reena Yadav, Dr. Rashmi Malik, Dr. Rinku Sen Gupta, Dr. Anshuja Singla
10:30 - 11:00 am	**INAUGURATION AND TEA BREAK**		
Session II- A Comprehensive Session : Understanding the Management of Utero-Vaginal Prolapse			
11:00 - 11:20am	Tissue Triumph: Advocating Prolapse Treatment through Native tissue Repair	Dr. Uma Rani Swain	Dr. Manju Khemani, Dr. Shakuntala Kumar, Dr. Jayshree Sunder, Dr. Arbinder Dang, Dr. Vandana Agrawal, Dr. Payal Agarwal
11:20 - 11:40am	Reinforcing the Vault: Insights into Sacrospinous Colpopexy	Dr. R. K Purohit	
11:40 - 12:00noon	Advanced Techniques in High Uterosacral Suspension for better Surgical Outcome & Patient Care	Dr. Hara Prasad Pattanaik	
12:00 - 12:50pm	Panel Discussion : Evidence Based Management of Prolapse of Different Compartments of Vagina	Dr. Sandhya Jain Dr. Swati Agrawal	Dr. Ranjana Sharma, Dr. Manju Puri, Dr. Achla Batra, Dr. Pawan Bhasin, Dr. Poonam Sachdeva.
1:00 - 2:00 pm	**Lunch**		
Session III-Confidence Regained:Conquering Bladder Incontinence withModern Solutions			
2:00 - 2:20 pm	Applied Anatomy for SUI & Role of Autologous Sling	Dr. Karishma Thariani	Dr Chitra Setya, Dr Jyoti Chugh, Dr Abha Sharma, Dr Uma Vadynathan, Dr Sonia Madaan Dr Anju Bala
2:20 - 2:40 pm	Burch Colposuspension	Dr. Alka Sinha	
2:40 - 3:00 pm	Physiology & Medical Management of Urge Urinary Incontinence	Dr. Nikhil Khattar	
3:00 - 3:50 pm	Panel : Transforming Lives with Innovative Incontinence Solutions	Dr. Amita Jain Dr. Manasi Deoghare	Dr. J B Sharma, Dr. Geeta Mediratta, Dr. Shrihari Anikhindi Dr. Rajesh Kumari, Dr. Jaya Chawla
3:50 - 4:00 pm	**Vote of Thanks**		

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Theme: "Be Aware-Adopt-adhere to the protocols"

MASTERING MYOMECTOMY VIDEO WORKSHOP

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 3rd October 2024
Time: 09:00 - 05:00 pm

Venue: Hall 'A' Auditorium, Sir Ganga Ram Hospital

Convener
Dr. Punita Bhardwaj

Chief Guest
Dr. Jaya Shree Sood

Guest of Honour
Dr. A.K. Bhalla

Co-Convener
Dr. Renuka Brijwal,

Co-Convener
Dr. Jhanvi

09:00-09:15 AM	REGISTRATION		
----	WELCOME ADDRESS AND INAUGURATION		
Time	**Topic**	**Speaker**	**Chairperson**
9:30 – 10:00 am	Port Placements in Laparoscopic Myomectomy	Dr. Shivani Sabharwal	Dr. K. Gujral Dr. Sanjivni Khanna Dr. Geeta Mediratta
10:00 - 10:30 am	Incision and Enucleation in Laparoscopic Myomectomy	Dr. Debasis Dutta	
10:30 - 11:00 am	Tissue retrieval & Laparoscopic Myomectomy	Dr. Alka Sinha	
11:00 – 11:30 am	Hemostasis in Endoscopic Myomectomy	Dr. Dinesh Kansal	Dr. Harsha Khullar Dr. Sandeep Talwar Dr. Tripti Sharan
11:30 - 12:00 noon	Uterine Reconstruction and Laparoscopic Myomectomy	Dr. Punita Bhardwaj	
12:00 -12:30 pm	**TEA BREAK**		
12:30 – 01:30 pm	Complications & Pit falls in Laparoscopic Myomectomy **Moderator:** Dr. Punita Bhardwaj **Discussants:** Dr. Alka Sinha, Dr. Anupama Sethi, Dr. Dinesh Kansal , Dr. Jyoti Mishra, Dr. Meenakshi Goyal, Dr. Neema Sharma, Dr. Sanjeevni Khanna, Dr. Shivani Sabharwal, Dr. Usha Kumar		Dr. Renu Mishra Dr. Pikee Saxena Dr. Renu Tanwar
01:30 - 02:00 pm	**LUNCH**		
02:00 – 02:30 pm	Hysteroscopic Morcellation	Dr. Anupama Sethi	Dr. K. K. Roy Dr. Indu Chawla Dr. Anjila Aneja
02:30 – 03:00 pm	Hysteroscopic Myomectomy	Dr. Neema Sharma	
03:00 – 03:30 pm	Complications in Operative Hysteroscopy	Dr. Meenakshi Goyal	
03:30 – 04:00 pm	Laparoscopy v/s Robotic myomectomy	Dr. Jyoti Mishra	Dr. Neena Singh Dr. Mala Shrivastava Dr. Chandra Mansukhani
04:00 – 04:30 pm	Robotic and Multiple myomectomy	Dr. Usha Kumar	
Vote of Thanks			

Hands on Endotrainer for all registered delegates 9:00 to 6:00 pm

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NARCHI DELHI 2024

30th Annual Conference of National Association for Reproductive & Child Health of India
Theme: "Be Aware-Adopt-adhere to the protocols"

OBSTETRICS SKILL WORKSHOP

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 3rd October 2024
Time: 08:00 - 04:00 PM

Venue: Hamdard Institute of Medical Sciences and Research, Jamia Hamdard, New Delhi

08:30 - 09:00 AM	REGISTRATION	
——	WELCOME ADDRESS AND INTRODUCTION	
Time	**TOPIC**	**Speaker**
Session 1 - Chairpersons: Dr. Vinita Sarabhai, Dr. Ritu Sharma		
9:05 - 9:15 AM	Breech vaginal delivery	Dr. Dina Aisha Khan
9:15 - 9:25 AM	Shoulder Dystocia	Dr. Supriya Chaubey
9:25 - 9:35 AM	Instrumental vaginal delivery	Dr. Shilpi Nain
9:35 - 9:45 AM	Balloon Tamponade	Dr. Nidhi Gupta
9:45 - 10:00 AM	**TEA**	
Time	**TOPIC**	**Speaker**
Session 2 - Chairpersons: Dr. Bindu Yadav, Dr. Reva Tripathi		
10:00 - 10:10 AM	Approach in case of adhesions	Dr. Neha Varun
10:10 - 10:20 AM	Second stage Cesarean section	Dr. Sumedha Sharma
10:20 - 10:30 AM	Delivering baby in malpresentations and use of forceps and vacuum in cesarean	Dr. Arpita De
10:30 - 10:40 AM	Hemostatic sutures	Dr. Arifa Anwar
10:40 - 10:50 AM	Stepwise devascularization & Int iliac Ligation	Dr. Aruna Nigam
10:50 - 1:00 PM	**HANDS ON SESSION:** 2nd stage (Patwardhan), Shoulder dystocia, Instrumental vag deliy, Baby delivery with Malpresentations in CS & instruments in CS, Hemostatic sutures, SWD & int iliac artery ligation, Balloon Tamponade.	
1:00 - 1:45 PM	**LUNCH**	
Time	**TOPIC**	**Speaker**
Session 3 - Chairpersons : Dr. Sunita Malik, Dr. Raka Guleria		
1:45 -2:00 PM	LSCS- Normal Technique	Dr. Jayshree Sunder
2:00 - 2:15 PM	Bladder Repair	Dr. Yasir
2:15 - 2:30 PM	Peripartum Hysterectomy	Dr. Aruna Nigam
2:30 - 2:45 PM	Complete Perineal Tear Repair	Dr. Mohini Agarwal
2:45 - 4:15 PM	**HANDS ON SESSION :** Cesarean suturing, Bladder suturing, Complete perineal repair (on Tissues)	
4:15 - 4:45 PM	**VOTE OF THANKS AND TEA**	

Organizing Chairperson
Prof Aruna Nigam

Organizing Secretary
Dr. Nidhi Gupta

Treasurer
Dr. Asma Khanday

Organizing Committee

Dr. Arifa Anwar Elahi
Dr. Pratibha Roy
Dr. Sumedha Sharma
Dr. Garima Maan
Dr. Dina Ayesha Khan
Dr. Neha Rathore
Dr. Supriya Chaubey
Dr. Lubna Inam

Senior Residents

Dr. Neeti singhal
Dr. Shazia anjum
Dr. Ambreen Fatima

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30th Annual Conference of National Association for Reproductive & Child Health of India
Theme: "Be Aware-Adopt-adhere to the protocols"

GENETICS

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 02:00 - 05:00 pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Chief guest
Dr. Dipika Dekha

Convener
Dr. Veronica Arora

------	REGISTRATION		
01:00 PM	WELCOME ADDRESS BY THE CHIEF GUEST AND SECRETARY SIAMG		
(10min)	**Pre workshop questionnaire**		
Time	**TOPIC**	**Speaker**	**Chairpersons**
2:00 - 2:25	Markers and their meaning	Dr. Seema Thakur	Dr. Sangeeta Gupta Dr. Ramnik Sabharwal Dr. Vidhi Hathi
2:25 - 2:50	Chromosomal microarray demystified. Indications and Interpretation	Dr. Sunita Bijarnia Mahay	Dr. Leena Sridhar Dr. Alok Varshney Dr. Anubhuti Rana
2:50 - 3:15	Exome Elaborated- Indications and Interpretation	Dr. Ratna Puri	Dr. Vandana Chadha Dr. Neerja Gupta Dr. Upma Saxena
3:15 - 3:40	Prenatal genetic testing beyond exome and microarray	Dr. Madhulika Kabra	Dr. Vatsala Dadwal Dr. Dipika Deka Dr. Jyoti Bali
3:45 - 5:00	**Hands on training for genetic report interpretation**		
Time	**Topic**	**Group 1**	**Group 2**
	Case based hands on training for ordering and interpretation of tests	Dr. Sangeeta Khatter Dr. Sameer Bhatia	Dr. Swasti Pal Dr. Mayank Nilay
10 min	**Post Workshop Questionnare**		
Quiz on genetic test interpretation			

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FP SERVICES: EXPANDING SERVICES, ENSURING RIGHTS

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 02:00 - 05:00 pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener
Dr. Sumita Mehta

Co-Convener
Dr. Anshul Rohtagi

	REGISTRATION
02:00 - 02:15 pm	**WELCOME ADDRESS**

Time	Topic	Speaker	Chairperson
	SESSION - 1		
02:15 - 02:30 pm	MTP Act- Connecting the Dots	Dr. Amita Agarwal	Dr. Nalini Bala Pandey Dr. Richa Sharma Dr. CD Jassal Dr. Poonam Sachdeva
02:30 - 2:45 pm	Second Trimester Abortion- Protocols and Techniques	Dr. Anshul Rohtagi	
	SESSION - 2		
2:45 - 3:00 pm	Postabortion Contraception : Challenges & Stitching the Gap	Dr. Rashmi Gera	Dr. Harsha Khullar Dr. Suman Lata Mendiratta Dr. Rachna Sharma Dr. Arifa Anwar
3:00 - 3:15 pm	Breaking Barriers-Immediate Postpartum LARC	Dr. Kanika Chopra	
	SESSION - 3		
3:15 - 3:30 pm	Manual Vacuum Aspiration : Regaining Confidence	Dr. Sumita Mehta	Dr. Ashok Kumar Dr. Sudha Gupta Dr. Anita Rajorhia
3:30 - 3:45 pm	Subdermal Implant: New Kid on the Block	Dr. Anshuja Singla	
	SESSION - 4		
3:45 - 4:15 pm	Role Play- Contraception Conundrum	**Experts :** Dr. Renu Manchanda Dr. Jyoti Sachdeva Dr. Vinita Gupta Dr. Neeta Sagar	
4:15 - 5:00 pm	**"Hands-on Workshop" on MVA and subdermal Implants**	**Trainers :** Dr. Shailja R Sinha Dr. Sumita Mehta Dr. Anshuja Singla Dr. Neha Varun	

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Royal College of Obstetricians & Gynaecologists

30th Annual Conference of National Association for Reproductive & Child Health of India

Theme: "Be Aware-Adopt-adhere to the protocols"

PRE CONFERENCE WORKSHOP

CTG:INTRAPARTUM FETAL MONITORING

Organized by:

Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi

&

"IRC RCOG India North"

Date: 4th October 2024
Time: 9:00am-1:00pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener : Dr. Mamta Dagar
Co-Convener : Dr. Purvi Khandelwal

MOC : Dr. Purvi Khandelwal & Dr. Huma Ali

08:30-09:00 AM	REGISTRATION
09:00-09:15 AM	WELCOME ADDRESS AND INTRODUCTION (Dr. Mamta Dagar)
	Chairpersons : Dr. Kanwal Gujral, Dr. Geeta Mediratta, Dr. Mamta Dagar, Dr. Neeti Tiwari

Time	Session 01	Speaker
09:15-09:30 AM	• Pathophysiology Behind CTG (5 min Q/ A & Discussion)	Dr. Jharna Behura
09:30-09:50 AM	• CTG Interpretation (5 min Q/ A & Discussion)	Dr. Poonam Tara
09:55-10:10 AM	• Pathological CTG - when to Intervene (5 minutes Q/A & Discussion)	Dr. Jayasree Sundar
10:15-10:30 AM	• Optimal Fetal Surveillance in Labour (5 min Q/ A & Discussion with)	Dr. Mamta Mishra
10:45-01:00 PM	**Breakout session-CTGs with 5 case scenarios ,15 min each session :** Dr. Jayasree Sundar, Dr. Jharna Behura, Dr. Poonam Tara, Dr. Shelly Arora, Dr. Mamta Mishra, Dr. Muntaha Khan, Dr. Huma Ali, Dr. Purvi Khandelwal, Dr. Puja Jain	

FACULTIES

Dr. Kanwal Gujral
Dr. Neeti Tiwari
Dr. Jayasree Sundar
Dr. Jharna Behura
Dr. Geeta Mediratta
Dr. Huma Ali
Dr. Poonam Tara
Dr. Shelly Arora
Dr. Mamta Dagar
Dr. Purvi Khandelwal
Dr. Mamta Mishra
Dr. Muntaha Khan
Dr. Puja Jain

SUMMARY

This workshop is designed for professionals involved in intrapartum care. It provides a comprehensive overview of CTG interpretation and management strategies to improve fetal outcomes during labor. The combination of lectures and breakout sessions ensures practical, hands-on experience with real case scenarios.

WHY YOU MUST ATTEND

- Understanding the pathophysiology of fetal hypoxia and its manifestation on CTG
- Correct Interpretation of CTG
- Interpret CTG abnormalities that might suggest hypoxia
- Improve your decision making in Intrapartum management & avoid Intrapartum hypoxia

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Theme: "Be Aware-Adopt-adhere to the protocols"

CRITICAL CARE IN OBSTETRICS

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 08:30 - 04:30 PM

Venue: Old LT opp OPD Building , VMMC and Safdarjung Hospital, New Delhi

MOC: Dr. Himal and Dr. Sakshi

CONVENER : DR. JYOTSNA SURI
CO-CONVENER : DR. REKHA BHARTI

Time	TOPIC	Speaker	Chairpersons
08:30 - 09:00 AM	REGISTRATION AND PRELIMINARY QUIZ		
09:00 - 09:05 AM	WELCOME ADDRESS AND INTRODUCTION		DR. BINDU BAJAJ
09:05 - 10:00 AM	**Session 1- Cross Talk : Evaluation of Critically Ill Pregnant Women**		
09:05 - 09:30 AM	Why critically ill pregnant women are a challenge?	Dr. Sheeba Marwah, Dr. Binita Jaiswal	Dr. Anjali Dabral, Dr. Bindu Bajaj, Dr. Usha Rani, Dr. Sunita Yadav
09:30 - 9:55 AM	Early warning scores Why & When?	Dr. Ratna Biswas, Dr. Anjila Aneja	
09:55 - 10:00 AM	Audience Interaction		
10:00 - 11:00 AM	**Session II- Point of Care Tests in Critically Ill Pregnant Women**		
10:00 - 10:25 AM	RUSH Protocol	Dr. Nalini Bala Pandey	Dr. Achla Batra, Dr. Mala Srivastava, Dr. Jyoti Sachdeva, Dr. Upma Saxena
10:25 - 10:50 AM	ABG	Dr. Jyotsna Suri	
10:50 - 11:00 AM	Audience Interaction		
11:00 - 11:30 AM	INAUGURATION		
11:30 - 11:50 AM	Tea Break		
11:50 - 12:50 AM	**Session III- Panel Discussion**	**Moderators: Dr. Rekha Bharti, Dr. Zeba Khanam**	**Expert: Dr. Jyotsna Suri**
	Eclampsia with HELLP, PE & AKI,	Dr. Sumitra Bachani, Dr. Meenakshi, Dr. Rajesh Kumar, Dr. Rajesh Kumari (SJH)	
	AFE, Maternal Collapse with DIC	Dr. Taru Gupta, Dr. Prasoon Gupta, Dr. Leena N Sreedhar	
12:50 - 01:30 AM	**Session IV- Sepsis in Obstetrics**		
12:50 - 01:05 PM	SSC bundle approach	Dr. Niharika Dhiman	Dr. Sudha Salhan, Dr Anita Kumar, Dr. Reeta, Dr. Kavita Agarwal
01:05 - 01:20 PM	Antibiotics in Sepsis	Dr. Rekha Bharti	
01:20 - 01:30 PM	Audience Interaction		
01:30 - 02:00 PM	Lunch		
02:00 - 02:30 PM	**Session V- Quiz Masters:** Dr. Sheeba Marwah, Dr. Zeba Khanam **Quiz Judges:** Dr. Harsha S. Gaikwad, Dr. Rajesh Kumari (AIIMS)		
02:30 - 04:30 PM	**Session VI- Workshop Five Workshop Stations: 20 minutes each**		
Stations I	Ventilator Setting	Dr. Harish Sachdeva & Team Anaesthesia	
Stations II	CPR	Dr. Sheeba Marwah, Dr. Zeba Khanam, Dr. Sakshi Nischal	
Stations III	Airway Management	Dr. D. S. Meena & Team Anaesthesia, Dr. Aprajita Gupta	
Stations IV	Oxygen & NIV	Dr. Rohit Kumar, & Team Respiratory Medicine, Dr. Akanksha Mohanty	
Stations V	Vasopressors	Dr. Rekha Bharti, Dr. Monika Gupta, Dr. Himal Singla	
04:30 PM	**Quiz Result**		

Advisors
DR. BINDU BAJAJ
DR. ANJALI DABRAL

Organising Secretary
DR. SHEEBA MARWAH

Jt. Organising Secretary
DR. ZEBA KHANAM

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30th Annual Conference of National Association for Reproductive & Child Health of India
Theme: "Be Aware-Adopt-adhere to the protocols"

FP SERVICES: EXPANDING SERVICES, ENSURING RIGHTS

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 02:00 - 05:00 pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener
Dr. Sumita Mehta

Co-Convener
Dr. Anshul Rohtagi

	REGISTRATION		
02:00 - 02:15 pm	**WELCOME ADDRESS**		
Time	**Topic**	**Speaker**	**Chairperson**
SESSION - I			
02:15 - 02:30 pm	MTP Act- Connecting the Dots	Dr. Amita Agarwal	Dr. Nalini Bala Pandey Dr. Richa Sharma Dr. CD Jassal Dr. Poonam Sachdeva
02:30 - 2:45 pm	Second Trimester Abortion- Protocols and Techniques	Dr. Anshul Rohtagi	
SESSION - 2			
2:45 - 3:00 pm	Postabortion Contraception : Challenges & Stitching the Gap	Dr. Rashmi Gera	Dr. Harsha Khullar Dr. Suman Lata Mendiratta Dr. Rachna Sharma Dr. Arifa Anwar
3:00 - 3:15 pm	Breaking Barriers-Immediate Postpartum LARC	Dr. Kanika Chopra	
SESSION - 3			
3:15 - 3:30 pm	Manual Vacuum Aspiration : Regaining Confidence	Dr. Sumita Mehta	Dr. Ashok Kumar Dr. Sudha Gupta Dr. Anita Rajorhia
3:30 - 3:45 pm	Subdermal Implant: New Kid on the Block	Dr. Anshuja Singla	
SESSION - 4			
3:45 - 4:15 pm	Role Play- Contraception Conundrum	**Experts :** Dr. Renu Manchanda Dr. Jyoti Sachdeva Dr. Vinita Gupta Dr. Neeta Sagar	
4:15 - 5:00 pm	**"Hands-on Workshop" on MVA and subdermal Implants**	**Trainers :** Dr. Shailja R Sinha Dr. Sumita Mehta Dr. Anshuja Singla Dr. Neha Varun	

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(NARCHI)-Delhi Branch and (IFS) Indian Fertility Society
Theme: "Be Aware-Adopt-adhere to the protocols"

FINE-TUNING OVARIAN STIMULATION FOR PRACTISING GYNECOLOGISTS

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 09:00 - 01:00 PM

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener : Dr.Shweta Mittal Gupta
Co-Convener : Dr.Neeti Tiwari

Coordinator: Dr.Sakshi Nayar

08:45 AM	**REGISTRATION**	
9:00am – 9:05am	Welcome address by convener	
9:05 am - 9:10 am	Address by chief guests	
Time	**TOPIC**	**Speaker**
Session 1 - Chairpersons: Dr. Sharmistha Garg, Dr. Tejashri Shrotri, Dr. Shikha Gurnani		
9:10 am - 9:30 am	Revisiting Oral ovulogens	Dr.Ruma Satwik
9:30 am - 9:50 am	How to use gonadotropins safely for ovarian stimulation in IUI?	Dr.Surveen Ghumman
9:50 am -10:10 am	When and how to trigger?	Dr Puneet Rana Arora
Time	**TOPIC**	**Speaker**
Session 2 - Dr. Sheetal Sachdeva, Dr. Shivani Sabharwal, Dr. Ankita Sethi		
10:10am - 10:30am	How do I improve my Success rate in IUI ?	Dr.Abha Majumdar
10:30am - 10:45am	How to set up level 1 ART clinic?	Dr.Rashmi Sharma
10:45am -11:00am	Antioxidants in infertility (sponsored by Celagenics)	Dr. Sakshi Nayar
11.00am -11.15 am	**Tea Break**	
Time	**Session 3 - Panel Discussion**	
11:15 am – 12:15 pm	Moderator: Endocrinopathies affecting Ovarian stimulation: Practical approach	
	Moderators: Dr.Shweta Mittal Gupta, Dr.Neeti Tiwari	
	Panelists : Dr. Pikee Saxena, Dr. Setu Gupta (Endocrinologist), Dr. Jyoti Bali, Dr. Sunita Arora, Dr. Renu Tanwar, Dr. Nisha Bhatnagar , Dr. Bhawani Shekhar, Dr. Manisha Navani	
Time	**Session 4**	
12:15 PM – 1:00 PM	**Reverse panel :** Difficult situations in ovarian stimulation	
12:15- 12:25	Case 1: Stagnant follicle with clomiphene citrate Presenter : Dr. Renu Singh ; Experts: Dr. Shalini Chawla Khanna, Dr. Parul Garg	
12:25-12:35	Case 2: Multiple follicles with thin ET with letrozole stimulation Presenter : Dr. Snigdha ; Experts : Dr. Aanchal Agarwal , Dr. Ankita Sethi	
12:35- 12:45	Case 3: Unilateral small endometrioma with infertility Presenter: Dr. Tanu Sharma ; Experts: Dr. Tejashri Shrotri, Dr. Keya Kalra	
12:45 - 12:55	Case 4: Mild Male factor infertility Presenter : Dr. Nisha Yadav; Experts : Dr. Sweta Gupta, Dr. Shikha Jain	
1:00 pm	**Lunch**	

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Theme: "Be Aware-Adopt-adhere to the protocols"

STILL BIRTHS: DECODING THE ENIGMA

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 02:00 - 05:00 pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener
Dr. Nidhi Khera

Co-Convener
Dr. Kumar Ankur

Co - Convener
Dr. Chanchal

	REGISTRATION
02:00 - 02:05 pm	**WELCOME ADDRESS**

Time	Topic	Speaker
PREVENTIVE OF STILL BIRTH		
Chairpersons : Dr. Kanwal Gujral, Dr. A.G. Radhika, Dr. Vatsla Dadhwal, Dr. Alok Bhandari		
02:05 - 02:20 pm	Is Stillbirth preventable ?	Dr. Tamkeen Khan
02:25 - 02:40 pm	Intrapartum Prevention of Stillbirth	Dr. Rinku Sen Gupta
02:45 - 03:00 pm	Role of Neonatologist in preventing Stillbirth	Dr. Avneet Kaur
THE UNTHINKABLE HAS HAPPENED .... what next?		
Chairpersons : Dr. Asmita Rathore, Dr. Dipika Deka, Dr. Preety Aggarwal, Dr. Shilpa Ghosh		
03:05 - 03:25 pm	Evaluation of Stillbirth Fetus & Placenta	Dr. Ratna Puri
03:30 - 04:30 pm	**Panel Discussion : Case Scenarios : What went wrong ?**	
	Moderators : Dr. Chanchal, Dr. Nidhi Khera **Experts** : Dr. Reva Tripathi, Dr. Dipika Deka **Panelists :-** Dr. Jayasree Sundar, Dr. Poonam Tara, Dr. Manisha, Dr. Nandita Dimri, Dr. Seema Thakur, Dr. Kumar Ankur	
Chairpersons : Dr. Tamkeen Khan, Dr. Kiran Arora, Dr. Krishna Aggarwal, Dr. Richa Aggarwal		
04:30 - 05:00 pm	Role Play - Breaking News of Still birth	Dr. Kamna Datta & Team
Vote of Thanks		

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Theme: "Be Aware-Adopt-adhere to the protocols"

PREVENTIVE ONCOLOGY WORKSHOP

"Organized by Institute of Obstetrics & Gynaecology, Deen Dayal Upadhyaya Hospital, New Delhi"

Date: 4th October 2024
Time : 11:30 - 05:00pm

Venue: Hotel The Lalit, Connaught Place, New Delhi

Chief Guest : Dr. Mala Shrivastava
Guest of Honour : Dr. Pushpa Singh

Organising Chairperson : Dr. Poonam Laul
Convener: Dr. Urvashi Miglani, Dr. Harvinder Kaur
Organizing Secretary: Dr. Ritu Goyal, Dr Richa, Dr. Aishwarya

11:30-11:40 PM	REGISTRATION	
	WELCOME ADDRESS AND INTRODUCTION	
Time	**TOPIC**	**Speaker**
SESSION 1 – Chairpersons: Dr. Sunita Seth, Dr. Sunita Malik, Dr. Sunita Lamba , Dr. Shanti		
11:40-11:50AM	Changing perspectives of Cervical Screening with HPV Tests	Dr. Shalini Aggarwal
11:50-12:00O Clock	The enigmatic HPV tests: Which one to choose	Dr. Rashmi Yadav
12:00-12:10PM	Endometrial and Vulval Cancer Screening: What can be done	Dr. Swasti
12:10-12:20PM	Preventive Strategies for Ovarian Cancer	Dr. Monisha Gupta
Time	**TOPIC**	**Speaker**
SESSION 2 – Chairpersons: Dr. Y. M. Mala, Dr. Suman Lata , Dr. Shashi Raheja		
12:20-12:30PM	HPV vaccination: Recent Updates	Dr. Poonam Laul
12:30-12:40PM	Tissue Basis of Colposcopy and Scoring Systems	Dr. Niharika Dhiman
12:40-12:50PM	Colposcopy Equipment : What's new	Dr. Shweta Balani
12:50-01:00PM	Management of CIN : The underlying principles	Dr. Shruti Bhatia
01:00-02:00PM	**LUNCH**	
Time	**SESSION 3**	
02:00-03:00PM	**Panel Discussion** **Experts :-** Dr. Amita Naithani, Dr. Shweta Giri **Panellists :-** Dr. Ritu Goyal, Dr. Kamna Datta, Dr. Kanika Batra Modi, Dr. Monika Madaan	**Moderators :-** Dr. Urvashi Miglani Dr. Harvinder Kaur
Time	**TOPIC**	**Speaker**
SESSION 4 – Video Sessions Chairpersons: Dr. Vijay Zutshi, Dr. Indu Chawla, Dr. Veena Acharya, Dr. Reena Yadav		
03:00-03:10PM	Lletz	Dr. Shruti Bhatia
03:10-03:20PM	Thermoablation	Dr. Urvashi Miglani
03:20-03:30PM	Conisation	Dr. Aruna Nigam
03:30-03:40PM	Vulvoscopy	Dr. Archana
03:40-04:30PM	**Brain teasers : Dr. Ritu Goyal, Dr. Richa Madaan and Dr. Aishwarya Nandakumar**	
04:30-05:00PM	**Hands on Session**	

COURSE HIGHLIGHTS

- SKILL ENHANCING HANDS-ON SESSIONS
- CRISP PRECISE DELIBERATIONS ON BASICS
- CASE BASED PANEL DISCUSSION WITH IMPORTANT TAKE HOME MESSAGES
- ENGAGE IN KNOWLEDGE SHARING BY EXPERTS OF THE FIELD
- ENLIGHTENING VIDEO SESSIONS ON PROCEDURES, HIGHLIGHTING TIPS AND TRICKS
- ENGAGING QUIZ FOR INQUISITIVE MINDS

WHO SHOULD ATTEND

- GYNAECOLOGISTS
- POST GRADUATES IN OBSTETRICS AND GYNAECOLOGY,
- TRAINEES IN GYNAE ONCOLOGY

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30th Annual Conference of National Association for Reproductive & Child Health of India
Theme: "Be Aware-Adopt-adhere to the protocols"

"COMPREHENSIVE OBSTETRIC SKILLS" NURSES MODULE

"Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi"

Date: 4th October 2024
Time: 08:00 - 11:00 am

Venue: Hotel The Lalit, Connaught Place, New Delhi

Convener : Dr. Seema Prakash
Special Guest : Dr. Mala Shrivastava, Mrs. Upasana Arora
Guest of Honour : Dr. Ashwani Dalmia, Dr. Archana Verma, Dr. Tarini Taneja, Dr. Kanika Gupta
Special Invitee : Dr. (Col) Pranjali Dhume, Dr. Pratiksha Gupta, Mrs Shalini Mittal
Co-Convenor : Dr. Srishti Prakash, Dr. Neha Varun
Chief Coordinators : Dr. Anita Rajorhia, Dr. Bhanupriya
MOC : Dr. Bhanupriya, Dr. Rashmi Shreya

Time	TOPIC	Speaker	Chairperson's/ Panelists/ Experts
7:30 - 8:00 am	**Registration**		
8:00 - 8:15 am	**Welcome Address and Introduction**	Dr. Seema Prakash	Dr. Neha Varun Dr. Srishti Prakash
8:15 - 9:15 am	**Skits :** 5 min/skits 15 min discussion **Topics :** 1. Obstetric hemorrhage emergency management 2. Lactation counselling in women 3. Breaking Bad News 4. Patient Identification 5. Respectful Maternity Care	**Moderators:** Dr. Neha Varun Dr. Srishti Prakash Dr. Smiti Jain Dr. Haritha Mannem Ms. Anjali Sharma Ms. Josephine Ms. Manita Ms. Promila	**Judges:** Dr. Kanika Gupta Dr. (Col) Pranjali Dhume Dr. Tarini Taneja Dr. Sunita Arora Dr. Shivani Gaur Dr. Pratiksha Gupta Dr. Shama Batra Dr. Vandana Gupta
9:15 - 9:30 am	**Slogan**	**Moderators:** Dr. Neha Pruthi Dr. Tanvi Ms. Promila Ms. Seema Mittal	**Judges** Dr. Sujata Agarwal Dr. Rashi Agrawal Dr. Mamta Tyagi Dr. Ritu Arya Dr. Manpreet Saini
9:30 - 9:45 am	**Posters 1**	**Moderators:** Dr. Chandana Shekhar Dr. Aditi Ghai Ms. Neelima	**Judges:** Dr. Vandana Gupta Dr. Vineeta Gupta Dr. Vibha Bansal
	Posters 2	**Moderators:** Dr. Shuchita Sharma Dr. Supriya Chaubey Ms. Seema Mittal	**Judges:** Dr. Haritha Mannem Dr. Deepa Gupta Ms. Shalini Mittal Dr. Neelam Gupta
9:45 - 10:00 am	**INAUGURATION & LAMP LIGHTING**		
	Panel discussion	**Moderators:**	**Judges:**
10:00-10:15 am	**1. Antenatal Care**	Dr. Neha Pruthi Dr. Vineeta Gupta Dr. Neha Varun	Dr. Pratiksha Gupta Dr. Rashi Agrawal Dr. Mamta Tyagi Ms. Urvashi Chaglani
10:15-10.30 am	**2. Postnatal Care & Contraception**	Dr. Aditi Ghai Dr. Manpreet Saini Dr. Bhanupriya	Dr. Kanika Gupta Dr. Tarini Taneja Dr. Sunita Arora Dr. Shuchita Sharma Ms. Latha
10.30-10.45 am	**3. Emergency Obstetrics**	Dr. Rashmi Shriya Dr. Aastha Srivastav Dr Srishti Prakash	Dr. Sushma Sinha Dr. Anita Rajorhia Dr. Ritu Arya Ms. Josephine
10:45-11:00 am	Valedictory function/Vote of thanks		

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HALL A - 5TH OCTOBER, 2024 (Saturday) - DAY I

MOC : *Dr. Ila Sharma (9:00-1:30 pm) & Dr. Purvi Khandelwal (2:30 – 5:00 pm)*

8:00 - 9:00 am	**Scientific Free Paper /Poster Presentation**

SESSION I 3 P'S of Obstetrics

CHAIRPERSONS : Dr. Indu Chugh, Dr. Neelam Jain, Dr. Vinita Singh, Dr. Sunita Arora

TIME	TOPIC	SPEAKER
09:00 - 09:15 am	Evidence based strategies for preterm birth reduction in singleton pregnancies	Dr. Kanwal Gujral
09:15 - 09:30 am	Prediction of Pre-Eclampsia : What's new ?	Dr. Sangeeta Gupta
09:30 - 09:45 am	Indian Innovation in Management of PPH	Dr. Ashmita Rathore
09:45 - 10:00 am	Discussions	

SESSION II - Reverse Panel ON MEDICO - LEGAL ISSUES IN OBSTETRICS

10:00 - 11:00 am	**MODERATOR :** Dr. Geetendra Sharma **EXPERTS :** Dr. Anjali Gera, Dr. Neeti Tiwari Mr. Ankur Rai **PANELISTS :** Dr. Geeta Mediratta, Dr. Supriya Jaiswal, Dr. Anita Rajoria, Dr. Yukti Wadhwan, Dr. Kiran Chandna, Dr. Reena Yadav, Dr. Taru Gupta
11:00 - 11:30 am	**TEA BREAK**

SESSION III DR. S.K. DAS ORATION

CHAIRPERSONS : Dr. Kamal Buckshee, Dr. Sushma Chawla, Dr. Achla Batra, Dr. Geeta Mediratta

11:30 - 12:15 pm	**Topic :**The emerging challenge of the transitions in women's cancers: The need for an Integrated Reproductive Health Systems Approach	**Orator :** Dr. Sharmila Pimple

SESSION – IV : KEY NOTES

CHAIRPERSONS : Dr. Sudha Prasad, Dr. Neerja Goyal, Dr. Deepa Masand, Dr. Sanjivini Khanna, Dr. Jyoti Bali

12:15 – 12:30 pm	1. Clinico-epidemiological Profile of Cancer among women in India	Dr. Amey Oak
12:30 – 12:45 pm	2. Syphilis in Pregnancy	Dr. Deepika Deka
12:45 – 01:00 pm	3. Adolescent Health	Dr. Veena Acharya
01:00 – 01:15 pm	4. Cholestasis of Pregnancy	Dr. Ashok Kumar
01:15 – 01:30 pm	5. Role of PRP in Endometrial Rejuvenation	Dr. Tarini Taneja
01:30 - 02:30 pm	**LUNCH BREAK**	

SESSION V - PANEL DISCUSSION - CASE BASED DISCUSSION ON LOOP HOLES IN MTP - ACT

02:30 - 03:30 pm	**MODERATOR :** Dr. Richa Sharma **CO- MODERATOR :** Dr. Anuradha Panda **EXPERTS :** Dr. Manju Verma, Dr. Renu Patel	**PANELISTS :** Dr. Kavita Bhatti, Dr. Anita Sabharwal, Dr. Anurag Vashist, Dr. Smriti Gupta, Dr. Shikha Chadha, Dr. Divya Singhal, Dr. Tripti Saran, Dr. Meenakshi Rohilla

SESSION VI - KEY NOTES

CHAIRPERSONS : Dr. Leena Shridhar, Dr. Neeru Kiran Banerjee, Dr.Bindu Bajaj, Dr. Priyanka Suhag

03:30 - 04:00 pm	1. Legal issues in Medical practice: Current practices	Dr. Girish Tyagi
04:00 - 04:15 pm	2. Triaging in Obstetrics	Dr. Archana Verma
04:15 – 04:30 pm	3. Genital Penetration Pain Disorder	Dr. Ragini Agarwal

SESSION VII		
CHAIRPERSONS : Dr. Chandra Mansukhani, Dr. Mala Srivastava		
04:30 - 04:45 pm	Next Gen Surgical Excellence : Mizzo Flex Single Access Surgical Robotic System in Action	Dr. Ritika Srivastav
04:45 - 05:00 pm		
05:00 - 05:30 pm	**TEA BREAK**	
06:00 pm onwards	**INAUGURATION FOLLOWED BY CULTURAL PROGRAM & DINNER**	

HALL B - 5TH OCTOBER, 2024 (Saturday) - DAY I

MOC : Dr. Sakshi Nayar (8:00-1:30 pm) & Dr. Renuka Brijwal (2:30 – 5:00 pm)

SESSION I		
TIME	**TOPIC**	**SPEAKERS**
08:00 - 10:00 am	Scientific Free Paper /Poster Presentation	
10:00 -10:45 am	Quiz Theory Elimination Round	
EXPERT : Dr. Ruma Satwik		
10:45 - 11:00 am	Contraceptive Failure – Skit	Dr. Harvinder Kaur
11:00 - 11:30 am	**TEA BREAK**	
SESSION II		
EXPERT : Dr. Abha Singh		
11:30 - 01:30 pm	Respectful Maternity Care	Dr. Manju Puri & Dr. Aparna K.Sharma
01:30 - 02:30 pm	**LUNCH BREAK**	
SESSION III		
EXPERTS : Dr. Ritu Mittal Arya, Dr. Aparna Sharma		
02:30 - 03:00 pm	Shoulder Dystocia – Drill	Dr. Juhi Bharti
CHAIRPERSONS : Dr. Madanjeet Paschricha, Dr. Rashmi Malik		
03:00 - 03:15 pm	Hugo Medtronics Presentation	Mr. Gautam Palani
03:15 - 03:30 pm	Melodies of Comfort: Enhancing Labour Experience with Music Therapy	Dr. Bhavneet Bharti
SESSION IV		
Expert : Dr. Manju Khemani, Dr. Manju Puri		
03:30 - 04:00 pm	PPH - Drill	Dr. Shashilata Kabra
04:00 - 04:30 pm	Eclampsia – Drill	Dr. Ratna Biswas
04:30 - 05:00 pm	Breaking The Bad News – Role Play	Dr. Aruna Nigam

HALL A - 6TH OCTOBER, 2024 (Sunday) - DAY II

MOC : *Dr. Ila Sharma (9:00-1:30 pm) & Dr. Huma Ali (2:30 – 5:00 pm)*

8:00 - 9:00 am	Scientific Free Paper /Poster Presentation	
SESSION I - PANEL DISCUSSION - ADOLESCENT HEALTH		
TIME	**TOPIC**	**SPEAKER**
09:00 - 09:45 am	**Moderators :** Dr. Sadhana Gupta & Dr. Latika Bhalla **Experts :** Dr. Ranjana Sharma & Dr. Seema Sharma **Panelists :** Dr. Anjila Aneja, Dr. Meena Samant, Dr. Vandana Gupta, Dr. Indu Bala Khartri, Dr. Namrta Bhardwaj, Dr. Shobhane Hema, Dr. Sadhna Jaiswal	
SESSION II - KEY NOTES		
CHAIRPERSONS : Dr. Reva Tripathi, Dr. Y.M. Mala, Dr. Meenakshi Ahuja, Dr. Deepa Gupta,		
09:45 - 10:00 am	1. Eclampsia Mukt Bharat - Easy Approach	Dr. Gorakh Mandrupkar
10:00 – 10:15 am	2. Anaemia Mukt Bharat by 2047	Dr. Sharda Jain
10:15 – 10:30 am	3. Cervical Cancer Mukt Bharat	Dr. Priya Ganesh Kumar
10:30 – 10:45 am	4. Surgical Site Infection	Dr. Achla Batra
10:45 - 11:15 am	**TEA BREAK**	
SESSION III – LEELAWATI ORATION		
CHAIRPERSONS : Dr.S.N.Mukherjee, Dr.S.Dawn, Dr. Neera Agarwal, Dr. Malvika Sabharwal, Dr. Neelam Bala Baid, Dr. M. Srivastava		
11:15 - 12 noon	Salute to Motherhood	Dr. P.C. Mahapatra
SESSION IV - CONFERENCE ORATION		
CHAIRPERSONS : Dr. V.L. Bhargava, Dr. Sunita Mittal, Dr. Shobha Sagar Trivedi, Dr. K.K. Roy, Dr. Chandra Mansukhani		
12:00- 12:45 pm	Challenging The Challenges	Dr. Manju Puri
SESSION V		
CHAIRPERSONS : Dr. Sonia Malik, Dr. Shakti Bhan Khanna, Dr. Sudha Salhan		
12:45 - 01:05 pm	Journey of IVF in India	Dr. Abha Majumdar
01:05 - 01:25 pm	Saving Ovaries	Dr. Alka Kriplani
01:25 - 01:30 pm	Discussion	
01:30 - 02:30 pm	**LUNCH BREAK**	
SESSION VI - KEY NOTES		
CHAIRPERSONS : Dr. Swaraj Batra, Dr. Kiran Agarwal, Dr. Vatsla Dadhwal, Dr. Monica Rana		
02:30 - 02:45 pm	Sepsis in Obstetrics	Dr. Harsha Khullar
02:45 – 3:00 pm	Improving Program Implementation : National Family Planning & Maternal Health Programs	Dr. Jyoti Sachdeva
03:00 – 03:15 pm	Identifying Complications in Twin Pregnancy	Dr. Anita Kaul
03:15 – 03:30 pm	Artificial Intelligence in Reproductive Health	Dr. Jaya Chaturvedi

SESSION VII - VEDIO SESSION - LABOUR ROOM PROCEDURES		
CHAIRPERSONS : Dr. Poonam Sachdeva, Dr. Manisha Navani, Dr. Krishna Agarwal, Dr. Veena Vidyasagar,		
03:30 - 03:40 pm	Episiotomy	Dr. Neha Varun
03:40 – 3:50 pm	Repair of 3rd & 4th Degree Tears	Dr. Bhanu Priya
03:50 - 04:00 pm	Instrumental Delivery Forceps	Dr. Kavita Agarwal
04:00 - 04:10 pm	Vacuum Delivery	Dr. Pallavi Gupta
04:10 - 04:20 pm	Patwardhan's Technique / Breech Extraction	Dr. Ratna Bishwas
04:30 - 05:15 pm	Final Quiz Round	
05:15 pm	Valedictory Session	

HALL B - 6TH OCTOBER, 2024 (Sunday) - DAY II

MOC : *Dr. Bhawani Shekhar (8:00-1:30 pm) & Dr. Anusha Sharma(2:30 – 5:00 pm)*

SESSION I		
TIME	**TOPIC**	**SPEAKERS**
08:00 - 10:00 am	Scientific Free Paper /Poster Presentation	
10:00 -11:00 am	Neonatology Resuscitation - Drill	Dr. Pankaj Garg
11:00 - 11:30 am	**TEA BREAK**	
SESSION II		
CHAIRPERSONS : Dr. Mamta Dagar, Dr. Ashmita Mehla		
11:30 - 12:00 noon	Breaking The Bad News	Dr. Sonal Bathla
12:00 – 12:30 pm	Violence Against Women - Skit	Dr. Monika Gupta
SESSION III		
CHAIRPERSONS: Dr. Kanika Jain, Dr. Vidhi Chaudhary		
12:30 – 12:45 pm	Menopause - Role Play	Dr. Sujata Agarwal
12:45- 01:10 am	Doctor ki Maut (Moot Court)	Dr. Jasmine Chawla
01:10 – 01:30 pm	Menstrual Hygiene - Role Play	Dr. Nidhi Khera
01:30 - 02:30 pm	**LUNCH BREAK**	
SESSION IV		
CHAIRPERSONS : Dr. Neeti Tiwari Dr. Sharmistha Garg		
02:30 - 03:00 pm	Counselling for LSCS - Role Play	Dr. Jyotsna Suri
03:00 - 03:30 pm	Pre Eclampsia - Drill	Dr. Upma Saxena
03:30 - 04:00 pm	Antenatal Care Counselling	Dr Seema Prakash
JUDGES : Dr. K. Gujral, Dr. Harsha Khullar, Dr. Anita Rajoria		
04:00 - 04:30 pm	Slogan Completion	

Organizing Team

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