Volume 26 I July 2025 I Monthly Issue 3

AOGD BULLETIN

"Women's wellness-From tiny heartbeats to timeless strength"

THEME: INTEGRATING FOURTH TRIMESTER CARE INTO ROUTINE OBSTETRIC PRACTICE: A POSTPARTUM-CENTERED APPROACH

AOGD SECRETARIAT
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Lady Hardinge Medical College & Associated Hospitals, New Delhi-110001
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AOGD 2025

47th Annual Conference of AOGD

Organised By: Department of Obstetrics and Gynaecology
Lady Hardinge Medical College & Associated Hospitals, New Delhi

Venue: India Habitat Centre, New Delhi

Theme - Tiny Heartbeats to Timeless Strength - Honouring the Journey of Women Through Birth & Beyond

Pre Conference Workshop- 11th & 12th Sep 2025
Main Conference - 13th to 14th Sep 2025

ABSTRACT IS LIVE NOW

Please visit the https://aogd2025conference.com/ website for more details.

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AOGD Bulletin

Volume 25 • Monthly Issue 3 • July 2025

Publisher/Printer/Editor
Dr. Pikee Saxena & Dr. Manisha Kumar on behalf of Association of Obstetricians & Gynaecologists of Delhi

Published from
Department of Obstetrics & Gynaecology
Lady Hardinge Medical College, New Delhi-110001

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From the President's desk

Dear AOGD Members,

Wishing you all a refreshing, breezy, lush green monsoon season !

We bid adieu to June with a series of activities amongst which the Clinical Meeting held at Apollo Hospital was one of the penultimate event. Three interesting presentations were made with valuable carry home messages. The next clinical meeting will be held in Army Hospital-Research & Referral on 25th July 2025. I invite you all to attend it.

In the forthcoming month of July I urge all the members to participate in some or other activity on 11th of July on occasion of World Population Day to symbolize our commitment towards population stabilization. We must all pledge to educate, propagate and provide contraception to the masses to enable them to build families with choices.

We are pleased to announce the that the 47TH ANNUAL CONFERENCE OF AOGD is scheduled to be held 13th & 14th September 2025 at India Habitat Centre and the Pre Conference Workshops will be held on 11 & 12th September 2025 in the respective hospitals of the subcommittee chairpersons who are organizing it. Please visit the website aogdlhmc2025conference.com to register

Preparations are underway to make the event an academic fiesta with a wide range of topics which will be deliberated by critically acclaimed speakers and chairpersons who are experienced in their field.

The abstract submission is now open , hence I request all of you to submit your abstracts and avail the opportunity to win prizes and medals. Special request to the senior faculty to please encourage the postgraduates, senior residents and junior faculty to participate.

Looking forward to welcome you all at the conference.

The theme of July Bulletin is "4th Stage of Labour" which is often neglected and may lead to serious complications. Dr Pikee and her team has highlighted the significance of this stage and it is a must read for all. I congratulate the team for their thoughtful work.

Dr Reena Yadav

President AOGD

From the Secretarial Desk

Dr Ratna Biswas
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Joint Secretary

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Joint Secretary

Dear Members,

Greetings from AOGD secretariat at Lady Hardinge Medical College!

As we complete a quarter of our tenure in June we are filled with gratitude and appreciation for all the AOGD members for their dedication and whole hearted contribution in promoting women's health initiatives through public awareness and educational activities .

The subcommittees of AOGD have been consistent in organizing educational activities for the benefit of the members . Webinars on Mission Adolescent Health, Multiple gestation , Preconception to Prenatal Genetics and CME on Endometriosis were few of the activities organized in June . I request all members to join in large numbers to benefit from these deliberations which gives useful practice points from the stalwarts in the field.

On occasion of International Yoga Day on 21st June the members showcased their commitment towards their own health through Yoga and Meditation.

We wish to remind you of the upcoming 47TH ANNUAL CONFERENCE OF AOGD scheduled for 13th & 14th September 2025 and Pre Conference Workshops on 11 & 12th September 2025.

We encourage all members to register. Please encourage the postgraduates and young members to participate in quiz, paper and poster presentation.

For details please visit website: aogdlhmc2025conference.com.

Some important announcements. FOGSI has launched the Smartcard which contains details of your FOGSI Membership. It can be scanned and downloaded . QR code has been shared in WhatsApp groups.

Another vital initiative by FOGSI is "COVER YOU", a Professional Indemnity Policy. It gives a free indemnity cover of 10 lakhs for all FOGSI members. The flyer with link has been shared in the WhatsApp groups. Please avail these facilities.

FOGSI has also launched the Social Security Scheme (SSS) .The important feature of this scheme is that each member contributes Rs.300/- for every unfortunate death of the fellow member. For details please log on to the FOGSI website.

AOGD bulletin, July issue focusses on "Fourth Trimester of Pregnancy". It will provide important insights on post delivery monitoring and management. We congratulate Dr Pikee and the editorial team for directing our attention to this important aspect in Obstetrics and we wish her and the editorial team all the success.

AOGD Secretariat

From the Editor's Desk

Dr Pikee Saxena

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Dr Divya Gaur
Co-editor

Greetings to all readers!

The fourth trimester—the critical 12-week period following childbirth—has long remained in the shadows of obstetric care. Yet, it is during this transformative phase that a woman's physical recovery, emotional well-being, and maternal identity begin to solidify. This special issue seeks to reposition the postpartum period as a vital component of routine obstetric practice, bringing into focus the evolving understanding that comprehensive maternal care must extend beyond delivery.

Our carefully curated selection of articles reflects the multidimensional needs of women in the fourth trimester and introduces forward-thinking strategies to address them.

We begin with exploration of cutting-edge technologies in **"Stopping the Bleed: The Rise of Innovative Devices for Management of PPH,"** shedding light on how innovation is saving lives in real-time delivery rooms.

We discuss the **Care Bundles as part of Enhanced Recovery After Delivery**, highlighting structured, evidence-based practices that smoothen the transition from childbirth to postpartum recovery.

Breastfeeding, though natural, is often fraught with challenges. Pragmatic guidance is provided in **"Breastfeeding Challenges in the Fourth Trimester: Solutions for a Successful Start,"** reminding us that early support lays the foundation for lifelong health.

In "**High-Risk, High Priority,"** article advocates for systemic prioritization of postpartum care in India, particularly for vulnerable populations—a timely and necessary call to action.

Article on **Postpartum Anaemia**, an often-underestimated condition with long-term consequences for fetomaternal health and functioning has been discussed in details covering all crucial areas from prevention to challenges and management.

Mental health in the fourth trimester takes center stage through an insightful contribution by an expert psychiatrist which focusses on **early detection and management of postpartum depression and anxiety**—an area that demands destigmatization and proactive screening.

An article throws spotlight on importance of pelvic health, emphasizing **Pelvic Floor Rehabilitation** and the empowerment that comes from educating women about their bodies post-birth.

In a data-driven contribution, examines **patterns of antihypertensive medication use** during the crucial postpartum years, offering fresh clinical insights and implications for long-term cardiovascular health.

To round off this issue, we have an **engaging quiz** for our readers that reinforces key learnings in an interactive, thoughtful manner.

As clinicians, educators, and policymakers, it is imperative that we champion a postpartum-centered approach—one that normalizes continuity of care, anticipates maternal needs, and ensures no woman is left navigating the fourth trimester alone.

We hope this issue inspires action, fosters dialogue, and moves us collectively toward a future where postpartum care is not an afterthought, but an integral and celebrated chapter in every woman's maternal journey.

Warm regards,
The Editorial Team

47th Annual AOGD Conference

13th & 14th September 2025

Scientific Program 13.09.2025 Day 1

Time	Hall A - Stein Auditorium	Hall B – Jacaranda	Hall C –Magnolia & Maple Room
08:00-09:00 am	**Registration**		
	Topic	**Topic**	
09:00-10:00 am	**Session 1: Controversies in Obstetrics**	**Session :1 : Controversies in Gynaecology**	
09:00-09:15am	Fetal intrapartum CTG Monitoring in Low-Risk Pregnancies – Overuse or Essential?"	Vaginal Rejuvenation and Cosmetic Gynecology – Should It Be a Priority ?	
09.15 - 09.30 am	Cesarean on Demand – A Woman's Right or Medical Malpractice?	Should women without symptoms or risk factors have regular pelvic examination ?	**Free**
09:30-09:45 am	Role of Ultrasound – Too Much Screening or Essential for Fetal Health?	Fertility Preservation – Should it be Standard Practice for Women with Cancer ?	
09.45-10.00am	Discussion	Discussion	
10:00-11:00am	**Session :II Case based Panel discussion**	**Session :II Case based Panel discussion**	
	When Infection Strikes – Obstetric Sepsis and Emerging Threats	Pelvic Masses Demystified – Malignancy or Mimic?	
11:00-12:00 noon	Session :III Key note lectures		
	Critical Crossroads in High-Risk Obstetrics – Navigating Dual Lives with Precision and Compassion	Surgical Innovation in Gynecology – Laparoscopy, Robotics and Beyond"	
11.00-11.15am	Managing Cardiac Disease in Pregnancy – Walking the Tightrope Between Physiology and Pathology	Next-Gen Laparoscopy – Smarter, Safer, Sharper	
11.15-11.30am	Severe Preeclampsia and HELLP Syndrome – Early Clues, Timely Action, Better Outcomes	Robotic Gynecology – Expanding Access, Redefining Precision	**Paper**
11.30am-11.45	Predicting and Preventing Preterm Birth – From Cervical Length to Progesterone Protocols	"Digital Surgery, AI, and the Operating Room of the Future"	
11.45-12.00 noon	Discussion	Discussion	
12.00-12.30pm	**Brigadier Khanna Oration**		
12.30-01.00pm	**FOGSI President Oration**		
01.00-01.30pm	**Inauguration**		
01.30-02.15pm	**Lunch**		
02.15-03.15pm	Session IV Panel cum Symposium :	Panel cum Symposium	
	Saving the Second Twin – Challenges in Multifetal Delivery	"Adenomyosis – The Overlooked Twin of Endometriosis"	
02.15-02.25 pm	When to Deliver Twins – Timing It Right	Emerging imaging criteria: transvaginal USG vs MRI	
02.25-02.35 pm	Second Twin in Breech or Transverse – What's the Best Route	Newer medical options and uterine-sparing interventions	
02.35-02.45 pm	Cord Prolapse and Fetal Distress – Real-time Decision Making	Managing adenomyosis in women desiring fertility	
02.45-03.25pm	Panel discussion -Case scenarios with discussion	Panel discussion -Case scenarios with discussion	
	Saving the Second Twin – Challenges in Multifetal Delivery-Case scenarios with discussion	"Adenomyosis – The Overlooked Twin of Endometriosis"	**Session**
03.25-03.30 pm	Discussion	Discussion	
03.30 - 04.00 pm	**Session V (A) : Surgical videos in Obstetrics**	**Surgical Videos in Gynaecology**	
	Topic: Difficult Cesarean Section	Topic: Precision and Progress in Gynecologic Surgery	
03.30-03.40 pm	Difficult Cesarean with Previous Scar : Techniques for Safe Delivery	Step by step staging laparotomy in ovarian malignancy	
03.40-03.50 pm	Cesarean Section in Cases of Obstructed Labor	Radical Hysterectomy with Pelvic Lymphadenectomy for Cervical Cancer"	
03.50-04.00 pm	Managing Placenta Accreta During Cesarean Section	Simple vulvectomy	
04.00-04.40 pm	**Session V (B) : Cutting-Edge Obstetric Surgery – Saving Lives, Preserving Futures**	**Laparoscopic & Hysteroscopic Video Topics in Gynecology**	
04.00-04.10 pm	Ultrasound-Guided Percutaneous Umbilical Blood Sampling (PUBS) for Fetal Diagnosis	Total Laparoscopic Hysterectomy (TLH): Step-by-Step for a Difficult Uterus	
04.10-420 pm	POCUS in Obstetric Emergency Protocols for Pulmonary Edema and Hypertensive Disorders	Laparoscopic Adenomyomectomy	
04.20-04.30 pm	Cesarean Myomectomy – New Evidence & Safer Technique	Hysteroscopic myomectomy	
04.30-04.40 pm	Laparoscopic Cervico-isthmic Cerclage in Second Trimester	Laparoscopic Sacrocolpopexy for Vault Prolapse	

47th Annual AOGD Conference

13th & 14th September 2025

Scientific Program 14.09.2025 Day 2

Time	Hall A	Hall B	Hall C – Maple Room
08:00-09:00 am	**Registration**		
	Topic	**Topic**	
09:00 -10:00 am	**Session 1: Symposium: Hormonal Harmony: Redefining Care in Reproductive Endocrinology**	**Session :1 : Simulation :The Golden Hour in Obstetrics – Rapid, Resilient, and Revolutionary Response Protocols"**	**Free**
09.00-09.15am	Modern diagnostic dilemmas – adolescent vs adult PCOS	"Postpartum Hemorrhage Protocols – From Chaos to Control"	
09.15-09.30 am	When to suspect pituitary or adrenal pathology in menstrual disorders	"Shoulder Dystocia and Cord Prolapse – Saving Seconds, Saving Lives"	
09.30-09.45 am	"Navigating Premature Ovarian Insufficiency – Restoring Hope, Not Just Hormones"	"Eclampsia and Hypertensive Crises – Stabilize Before You Deliver"	
09.45-10.00am	Discussion	Discussion	
10:00-11:00 am	**Session :II, Panel discussion**	**Session :II Panel Discussion**	
	"Obesity, Insulin Resistance, and Infertility: A Reproductive Endocrine Triangle"	"Labor That Stalls – Dystocia Dilemmas in Real Time"	
11:00-12:00 noon	**Session :III Debate**	**Session :III Debate**	
11.00-11.25am	Routine HPV Vaccination in Adults Over 26: Beneficial or Unnecessary	Non-invasive Prenatal Testing (NIPT) for All	
11.00-11.10 am	For -Beneficial	For	
11.10-11.20 am	Against -Unnecessary	Against	**Communications**
11:20-11:25 am	Discussion -5mins	Discussion	
11.25-11.50 am	Should Opportunistic Salpingectomy Be Routine for Ovarian Cancer Prevention	Universal Aspirin Use in Pregnancy: Prevention or Overprescription	
11.25-11.35 am	Yes	Prevention	
11.35-11.45 am	No	Overprescription	
11:45-12:00 noon	Discussion 5mins	Discussion 5mins	
12.00-01.00pm	**Session IV "The Vaginal Route Reimagined – From Classical Mastery to VNOTES Innovation"**	**Session IV Game changer Guidelines in Obstetrics & Gynaecology**	
12.00-12.25pm	VNOTES Hysterectomy	12:00-12:10 pm -Management of Intraamniotic Infection	
12.15-12.30pm	VNOTES Adnexal Surgeries	12:10-12:20 pm - Third Trimester Ultrasound	
12.30-12.45pm	VNOTES Adhesiolysis	12:20-12:30 pm - CIN2 Conservative management	**Session**
12.45-01.00pm	Discussion	12:30-12:40 pm - AUB Classification- FIGO 2023	
		12:40-01:00 pm - Discussion	
01.00-01.30pm	AOGD Past President Oration		
01.30-02.15pm	**Lunch**		
02.15-03.15pm	**Session V: Competition aper**	**Session V- Fertility, Contraception & Beyond – Clinical Priorities in 20s and 30s**	
		Fertility preservation for late motherhood and career planning	
		Contraceptive choices: tailoring to lifestyle and comorbidities	
		Preconception health – optimizing before the bump	
3.15-4.15 pm	**Session VI-: Quiz-Final round**	**Session VI- Unmasking the Hidden- Unusual /rare case -Invited Talks**	
4.15 pm onwards	**Valedictory & Vote of Thanks**		

Stopping the Bleed: The Rise of Innovative Devices for Management of PPH

Pikee Saxena
[1]Director Professor of Obstetrics and Gynaecology and Incharge ART Services
Lady Hardinge Medical college & Associated Hospitals, New Delhi

Introduction

Postpartum Hemorrhage (PPH) continues to be one of the most critical challenges in maternal health care, contributing significantly to maternal mortality and morbidity worldwide. In low- and middle-income countries (LMICs), PPH is particularly devastating, contributing to over 30% of maternal deaths. In India alone, PPH is responsible for approximately 47% of maternal fatalities, particularly in rural regions with inadequate health infrastructure. Uterine atony, where the uterus fails to contract effectively after childbirth, is the most common cause, accounting for about 80% of PPH cases.

Despite global efforts to address this preventable cause of death, PPH remains a leading challenge due to delayed recognition, suboptimal management, and lack of access to timely and appropriate interventions. The situation is further complicated by social and systemic barriers such as transportation difficulties, limited blood storage facilities, and disparities in rural healthcare access. Strengthening emergency obstetric care (EmOC) systems remains a vital priority.

Addressing PPH requires a multifaceted approach, including early detection, prompt management, and the availability of effective interventions. Enhancing training for healthcare providers, ensuring the availability of essential medications and devices, and strengthening healthcare infrastructure are vital steps toward reducing PPH-related maternal mortality.

Definition and Diagnosis of PPH

According to WHO guidelines, PPH is defined as blood loss exceeding 500 mL after vaginal delivery or more than 1000 mL after a cesarean section. The American College of Obstetricians and Gynaecologists (ACOG) further refines this definition to include cumulative blood loss ≥1000 mL accompanied by signs or symptoms of hypovolemia, such as hypotension, tachycardia, and pallor, occurring within 24 hours postpartum. Uterine atony is the most common cause, responsible for 70-80% of PPH cases.

First-Line Management Strategies

Active management of the third stage of labor (AMTSL) using uterotonics remains the cornerstone of prevention. Initial management of PPH involves conservative, non-invasive techniques, often applied in sequence:

1. Uterotonics: Medications like oxytocin, misoprostol, ergometrine, and carboprost are used to stimulate uterine contractions. Newer agents like carbetocin are increasingly recommended for their longer half-life and reduced need for cold-chain storage.
2. Uterine Massage: Helps in promoting uterine tone and is effective in immediate response.
3. Bimanual Compression: Mechanical pressure applied manually to reduce blood flow and encourage uterine contraction.
4. Tranexamic Acid: Antifibrinolytic agent shown to reduce death due to bleeding if administered within three hours postpartum. WHO strongly recommends its inclusion in all PPH protocols.

   These interventions are most effective when applied promptly.

Second-Line Interventions

If first-line measures fail, innovative second-line interventions before going for surgical options are discussed below.

Emerging /Innovative approaches

Oxytocin in Uniject

Uniject System: A small, plastic, single-use, auto-disable injection system that comes **prefilled with 10 IU of oxytocin** (the standard prophylactic dose). **Developed by** PATH, in collaboration with WHO and pharmaceutical partners, to address the logistical barriers of oxytocin administration.

Oxytocin in Uniject

Parameter	Value
Drug	Oxytocin (10 IU)
Delivery system	Uniject prefilled injection
Use	PPH prevention (third stage of labor)
Target settings	Home births, rural clinics, LMICs
Key benefit	Simplicity + safety + timely administration
WHO recommendation	Specially where injection-trained providers are limited

Packing devices revisited

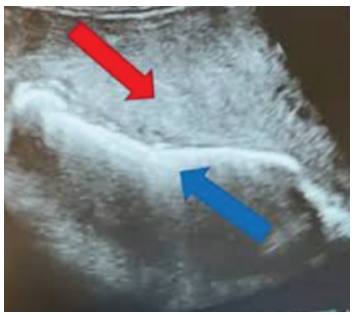
Uterine packing with plain gauze was the earliest method of tamponade for postpartum hemorrhage, first described in the 19th century. While some early reports showed up to 100% success in controlling hemorrhage, concerns about infection and insufficient tamponade effectiveness led to its decline by the 1950s. However, with advancements in materials, there has been renewed interest in uterine packing, now showing comparable outcomes and complication rates to modern balloon tamponade

- **Plain Gauze Sponges**

  Sterile cloth gauze is used for uterine packing in cases of atony and placental pathology, with a maximum use for 24 hours. It is low-cost and widely available. Limitations include risk of infection and inadequate tamponade.

- **Chitosan-Covered Gauze**

  Chitosan-coated gauze is used for atony and placental pathology. It promotes hemostasis by forming a plug, effective even in hypothermia and without depending on clotting. Maximum indwelling time described is 48 hours.

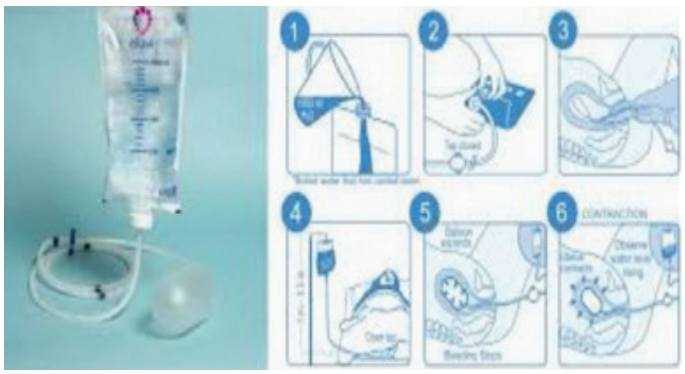



Chitosan covered gauze

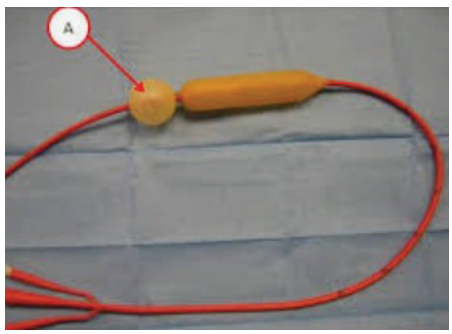
Uterine Balloon Tamponade (UBT) devices are specially designed to control postpartum hemorrhage by exerting intrauterine pressure. They are sterile, easy to use, allow quick inflation, and often include drainage ports to monitor bleeding—offering safer and more effective management than improvised methods.

Bakri Baloon

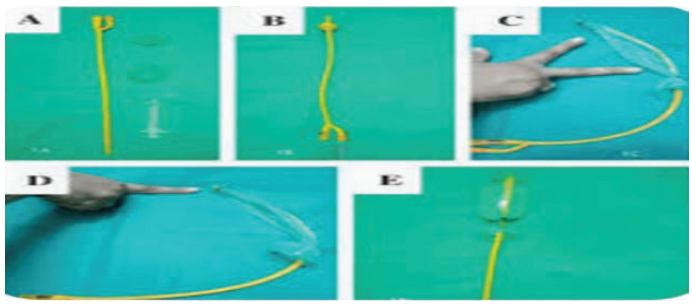
BT-Cath (Utah Medical)



Ellavi Balloon



Sengstaken–Blakemore Tube



Condom catheter

- **Bakri Balloon (Cook Medical)**

  The **Bakri Balloon** (Cook Medical) is a silicone balloon catheter with a central lumen, used for managing postpartum hemorrhage due to atony or placental issues. It holds up to 500 mL, is latex-free, has a drainage port, and allows rapid inflation. It can be used for up to 24 hours. Limitations include possible need for vaginal packing and port protrusion. Contraindications include active bleeding needing surgery, infection, uterine anomaly, DIC, and ongoing pregnancy

- **BT-Cath (Utah Medical)**

  The device features a soft silicone balloon with an intrauterine drainage lumen, used for atony and placental pathology. It holds up to 500 mL and is used for a maximum of 24 hours. Key features include a flush port, rapid inflation, and latex-free design. Limitations include possible need for vaginal packing and limited supporting data. Contraindications are similar to the Bakri balloon.

- **Ellavi Balloon** his single balloon system connects to IV tubing and is used for uterine atony. It holds up to 1000 mL and can be used for up to 24 hours. It is low-cost, preassembled, and maintains constant pressure. Limitations include limited outcome data. Contraindications are uterine tears, anomalies, rupture, and retained placenta

- **Sengstaken–Blakemore Tube**

  The Sengstaken–Blakemore Tube is a latex dual-balloon catheter used off-label for atony and placental pathology. It holds up to 250 mL and includes drainage. Dual balloons aid placement, but the tip often needs trimming for uterine use.

- **Condom Catheter**

  The condom catheter balloon, made by tying a condom to a urinary catheter, is used for atony and placental pathology. It holds up to 500 mL, is low-cost, and ideal for low-resource settings. Limitations include manual assembly and absence of a drainage lumen.

- **Chhattisgarh Condom Balloon (CG Balloon)**

  The **Chhattisgarh Condom Balloon (CG Balloon)** is a low-cost, improvised uterine tamponade device tailored for resource-limited settings. Made from a Foley catheter and condom secured with tubing rings, it features a central drainage lumen for real-time monitoring. Used as a second-line treatment for atonic PPH, it showed a 98.3% success rate in a 2014–16 study of 60 women, outperforming standard condom tamponades with lower blood loss, faster assembly (~1.2 min), and no leakage or expulsion. Its affordability, ease of use, and drainage capability make it a practical and effective option.

Table 1. Comparison of various UBT available for management of PPH

Device Name	Reusable	Volume Capacity	Resource Setting	Special Features
Bakri Balloon	No	Up to 500 mL	All	FDA-approved; drainage port; high success in hospitals
BT-Cath	No	Up to 500 mL	All	Dual lumen; commercial quality
Ellavi Balloon	No	~500 mL	Low-resource	Gravity-filled; no syringe needed
ESM-UBT	No	Variable	Low-resource	Pre-packaged condom-catheter kit
Condom Catheter	No	Variable	Low-resource	Improvised; low-cost
Sengstaken-Blakemore	Yes	Variable	Low-resource	Off-label use; multiple balloons
Chhattisgarh Balloon	No	Variable	Low-resource	Central drainage port for monitoring; quick to assemble; 98.3% success reported
BakriOne UBT	No	~500 mL	All	Pre-assembled; simplified transparent, multiport, multipurpose

Rationale for UBT in PPH

1. Mechanical Pressure → Hemostasis

- The inflated balloon applies **inward pressure on the uterine wall**, compressing **spiral arteries** and other bleeding vessels.
- This mimics the natural process of uterine contraction that stops bleeding after delivery.

2. Bridge to Definitive Care

- UBT provides **time** for:
  - Resuscitation and stabilization of the patient.
  - Preparation for transfer to higher-level care.
  - Avoiding or delaying invasive procedures like hysterectomy.

3. Simple, Rapid, and Effective

- Can be inserted in minutes by trained healthcare workers (even midwives).
- Requires minimal surgical skill and minimal equipment.

- Most studies report success rates between **75% and 95%**, especially in cases of **uterine atony**, retained placenta, or trauma-related bleeding.

4. **Fertility Preservation**

- Unlike hysterectomy, UBT **preserves the uterus**, which is critical for young women who desire future pregnancies.

5. **Evidence-Based & Guideline-Supported**

- Endorsed by WHO, FIGO, ACOG, and RCOG as a **second-line intervention** for PPH when medical management fails.
- Shown to **reduce maternal mortality** and **surgical intervention rates**, particularly in low-resource and rural settings.

Intrauterine Vacuum Systems

Vacuum-assisted intrauterine devices are a novel addition to the PPH toolkit. These work by drawing negative pressure within the uterus to contract the myometrium and control bleeding.

Rationale for uterine vacuum devices

Recently, intrauterine vacuum-induced hemorrhage control devices have been developed with the goal of rapid and effective control of PPH. The rationale for such devices is to use negative pressure within the uterine cavity to promote contraction, thus allowing coiling of the spiral arteries and reduced blood flow.

- **Panicker's device**

  This low-cost, reusable intrauterine suction cannula controls atonic PPH by creating negative pressure within the uterus, promoting contraction and rapid bleeding control—often within 4 minutes. Studies show it is faster, more effective, and less painful than balloon tamponade devices. Ideal for low-resource settings, it requires a suction source and is not recommended in cases of uterine trauma or retained tissue.

- **Jada System**

  FDA-approved in 2020, vacuum-induced uterine tamponade device made of soft silicone with an intrauterine loop featuring vacuum pores and a cervical seal balloon. It applies gentle suction (80 ±10 mm Hg) to control atonic postpartum hemorrhage and promote uterine contraction. Used for 1.5 to 24 hours and requires ≥3 cm cervical dilation. The RUBY trial (800 patients) showed success rates of 95.8% after vaginal and 88.2% after cesarean births, with bleeding controlled within 5 minutes on average. Contraindications include retained products, placenta accreta, infection, abnormal anatomy, pregnancy, inversion, and rupture

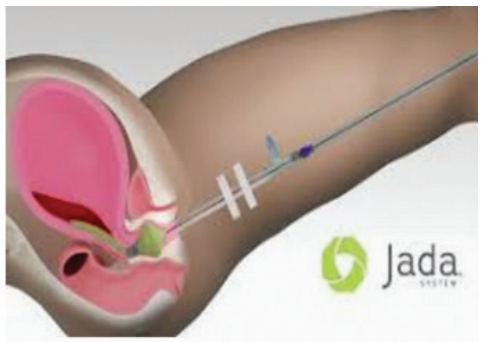
- **Suction Tube Uterine Tamponade (STUT)**

  Affordable (<$1), novel device for postpartum hemorrhage management. It uses a flexible, round-tipped wide-bore Levin tube with large pores connected to suction at 100–200 mm Hg. Suction is applied for 1 hour, followed by 20 minutes of monitoring without suction before removal. Indicated for atony, it is low-cost and readily available but requires manual stabilization due to its improvised design.

- **Modified Bakri with Suction**

  This combines a Bakri balloon (50–100 mL) with external suction at 60–70 kPa (450–525 mm Hg) for managing atony and placental pathology. Used for 1–24 hours, it offers a lower-cost alternative to the Jada system by leveraging a familiar balloon device. It is off-label with limited outcome data.

Paniker's device



Jada System

Evidence from India: Panicker vs. Chhattisgarh Balloon

A 2025 comparative study from GSVM Medical College, Kanpur, assessed 140 patients with atonic PPH and found that Panicker's device outperformed the Chhattisgarh balloon tamponade on multiple parameters like faster control of hemorrhage., rapid uterine contraction, less overall blood loss, reduced patient discomfort, shorter recovery and hospitalization times. These findings support the wider implementation of Panicker's vacuum device, particularly in settings where affordability, durability, and ease of use are crucial.

Table 2. Comparison of available suction devices for management of PPH

Device	Mechanism	Pressure	Bleeding Control Time	Evidence Base	Pros	Cons
Panicker cannula	High-pressure suction	~700 mmHg	~4 minutes (case series)	55-case series; 20-case recent cohort	Simple, reusable, low-cost, effective	Seal issues, blockage risk, limited large-scale trials
NIPSD suction cannula	High-pressure suction	~650 mmHg	2–4 minutes (small studies)	QI: n=1,324; small RCTs	Reduces PPH rate significantly in LMICs	Clogging, small study scale
Jada VHCD	Moderate vacuum + seal	~80 mmHg	~3 minutes (registry data)	Registry data, n=107	Physiologic, fast, moderate vacuum	Vacuum dependence, no RCTs

Rationale for Suction Devices in PPH

1. Negative Pressure Promotes Uterine Contraction

- Applying **intrauterine vacuum** collapses the uterine walls inward.
- This **stimulates the natural contraction reflex** of the uterus (myometrial recoil), compressing spiral arteries and reducing bleeding.
- This mimics the uterus's physiological response to delivery more effectively than passive methods.

2. Evacuates Retained Blood & Clots

- Blood or clots inside the uterus can prevent effective contraction (uterine atony).
- Suction devices remove this content rapidly, allowing better contraction and reducing the risk of ongoing hemorrhage.

3. Faster Hemostasis Compared to Tamponade

- Many suction devices (e.g. Jada, NIPSD, Panicker cannula) have shown bleeding cessation within 2–4 minutes, compared to longer times for balloon tamponade.
- This speed is critical when every minute of bleeding increases the risk of maternal morbidity and mortality.

4. Minimal Training & Equipment

- Devices like the Panicker cannula or NIPSD are simple, inexpensive, and can be used without surgical skill or high-end equipment.
- Ideal for primary care settings or resource-limited hospitals.

5. Preserves Fertility

- Like UBT, suction devices avoid hysterectomy, preserving fertility.
- Particularly beneficial in young, multiparous, or nulliparous women.

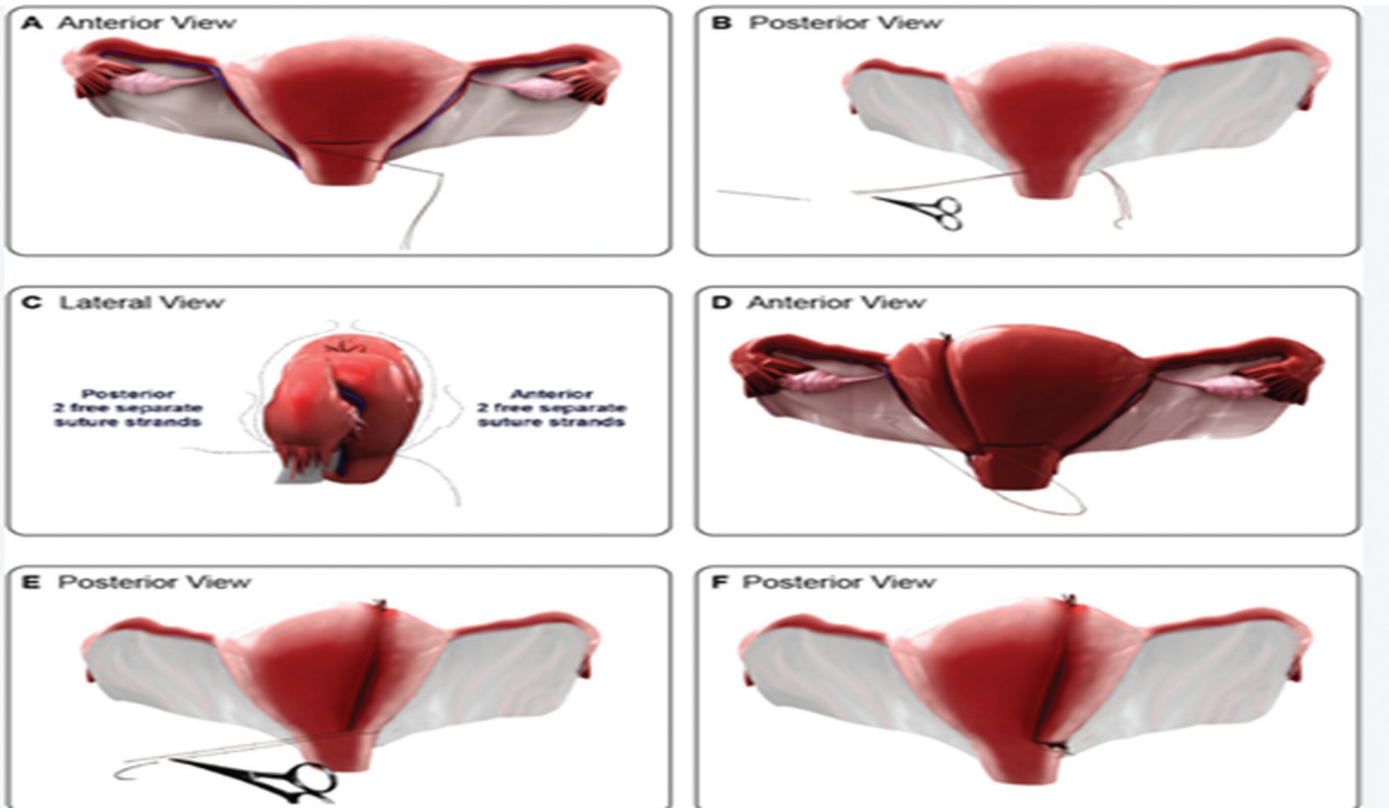
Non-Pneumatic Anti-Shock Garment (NASG)

- It is a life-saving, first-aid medical device used to stabilize women suffering from obstetric hemorrhage and shock, especially in low-resource settings. It is made of neoprene with Velcro straps and is divided into six segments that wrap tightly around the lower body (legs, pelvis, and abdomen). It applies external pressure to shunt blood from the lower extremities to vital organs (heart, lungs, brain).
- Mostly used during **transport to referral centres by reducing blood loss, improving perfusion** and buys time for definitive care. **Advantages are that it is r**eusable after cleaning, inexpensive

COMpression Of Myometrium and Occlusion of uterine artery – MG (after Mahesh Gupta)

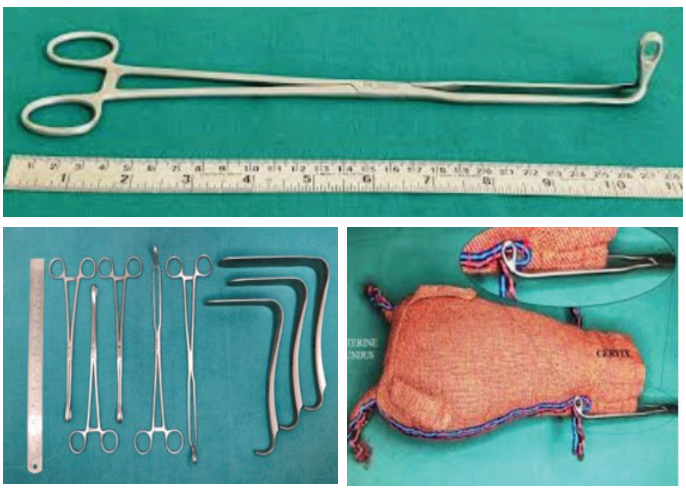
- It is a modified **B-Lynch uterine suture** that uses a specialized **double ended suture** (straight needle one end, curved needle the other) to compress the uterus and occlude uterine artery branches. It acts by combined **mechanical compression** (like B-Lynch) with **artery occlusion,** creating dual hemostatic effect.

  Can be placed in ~4–10 minutes after uterine closure. It can help to avoid hysterectomy. Requires only standard suture and minimal specialized needles.Low rates of infection or uterine damage; fewer transfusions or surgical interventions needed.



Transvaginal Uterine Artery Clamp (TVUAC)

TUVAC is applied to the uterine arteries at the cervico-isthmus via vaginal route to **directly occlude arterial blood flow** quickly without laparotomy. A recent RCT evaluated the effectiveness of three interventions - transvaginal uterine artery clamp (TVUAC), vacuum-assisted uterine contraction using a suction cannula (SC), and condom tamponade (CT) - in the management of atonic PPH. It was noted that **TVUAC and SC were more effective and faster** than condom tamponade in atonic PPH. Both present **novel, less invasive options** for bleeding control in tertiary settings. It was suggested that more research and replication studies are needed to assess long-term outcomes and scalability.



Transvaginal Uterine Artery Clamp (TVUAC)

PPH Butterfly

It is an innovative device designed to **replicate bimanual uterine compression** without needing to insert a fist, making the process **less invasive and more acceptable** during postpartum haemorrhage. It is made from a **single-piece plastic platform** with **foldable wings** and handle. It's inserted vaginally in a streamlined form, then opened to provide a **stable compression platform beneath the cervix.** Clinician applies pressure against the uterus via the abdomen; the butterfly handles can be **wedged against the bed**, allowing one-handed compression over time. It has a **perforated or mesh surface** which allows blood and clots to drain through while compression is maintained. (Figure 10)

It is clinically effective (~98% success in Phase II) UK based model. More comparative trials are required.

Systemic Challenges in Rural and Resource-Poor Areas

India's maternal care system continues to face obstacles:

- Shortage of trained personnel in rural and peripheral regions.
- Inconsistent supply chains for critical medications and blood products.
- Lack of efficient transportation and referral mechanisms.
- Socio-cultural delays in seeking care and poor birth preparedness.

Affordable and user-friendly tools like Panicker's vacuum system and condom catheter UBTs can help bridge these gaps. To ensure effectiveness, their incorporation into state and national guidelines is essential after multicentric, adequately powered clinical trials.

Conclusion

Postpartum haemorrhage remains a leading cause of preventable maternal deaths worldwide, particularly in LMICs such as India. Despite advancements in pharmacologic and mechanical interventions, significant gaps remain in equitable access, training, and emergency response. Emerging technologies like intrauterine vacuum devices offer promising solutions, especially in underserved regions. The integration of newer innovations into mainstream maternal care protocols represents a low-cost, high-impact strategy. Moving forward, a multi-pronged approach combining education, infrastructure, technology, and policy reform is essential to ensure that no woman dies from preventable bleeding after childbirth.

References

1. Tyagi, P., Anamika, Verma, P., & Anand, D. (2025). *Comparative analysis of Panicker's vacuum suction hemostatic device versus the Chhattisgarh balloon tamponade in the management of postpartum hemorrhage at a tertiary health facility in Uttar Pradesh, India*. Cureus, 17(3), e81399. https://doi.org/10.7759/cureus.81399.
2. Overton, E., D'Alton, M., & Goffman, D. (2024). Intrauterine devices in the management of postpartum hemorrhage. *American Journal of Obstetrics & Gynecology, 230*(3), S1076–S1087. https://doi.org/10.1016/j.ajog.2023.08.015
3. FOGSI. (2022, September). *PPH prevention and management: Updated PPH guidelines*. Federation of Obstetric and Gynaecological Societies of India.
4. Overton, E., D'Alton, M., & Goffman, D. (2024). Intrauterine devices in the management of postpartum hemorrhage. *American Journal of Obstetrics & Gynecology, 230*(3 Suppl), S1076–S1087. https://doi.org/10.1016/j.ajog.2023.08.015
5. Centers for Disease Control and Prevention (CDC). (2023, March 16). *Maternal mortality rates in the United States, 2021*. National Center for Health Statistics. https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.htm
6. Committee on Practice Bulletins—Obstetrics. (2017). Practice Bulletin No. 183: Postpartum hemorrhage. *Obstetrics & Gynecology, 130*(4), e168–e186. https://doi.org/10.1097/AOG.0000000000002351
7. Center for Devices and Radiological Health. (2022). *Device approvals, denials and clearances*. U.S. Food and Drug Administration. https://www.fda.gov/medical-devices/products-and-medical-procedures/device-approvals-denials-and-clearances

Bridging the Gap: ERAD (Enhanced Recovery After Delivery) as the Missing Link in Fourth Trimester Care

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Introduction

The fourth trimester—the 12 weeks following childbirth—represents a transformative yet historically underrecognized phase in the continuum of maternal and newborn care. During this period, women undergo profound physiological recovery, hormonal adjustments, emotional transitions, and the initiation of breastfeeding, all while adapting to new maternal and familial roles. Despite its critical importance, postpartum care is often fragmented and insufficient, typically limited to a single follow-up visit, failing to address the evolving needs of mothers and infants[1].

Emerging evidence highlights that comprehensive, integrated support during this time leads to:

1. Improved maternal mental health
2. Favourable breastfeeding outcomes
3. Better infant development
4. Long-term family wellbeing.

Recognizing the fourth trimester as a distinct and essential stage of care necessitates a paradigm shift—one that centres postpartum women in clinical practice and health policy, ensuring that recovery and transition are met with continuity, compassion, and clinical rigor. Enhanced Recovery After Delivery (ERAD), an adaptation of Enhanced Recovery After Surgery (ERAS), offers a structured, multidisciplinary approach to optimize postpartum outcomes.

Key ERAD principles encompass:

- **Pre-delivery counselling** and expectation setting
- **Intrapartum interventions** to reduce operative trauma
- **Postpartum strategies** for early nutrition, mobility, pain control, and discharge planning[2]
- Salient and important features encompassing all these three issues which define ERAD are discussed in the following article.

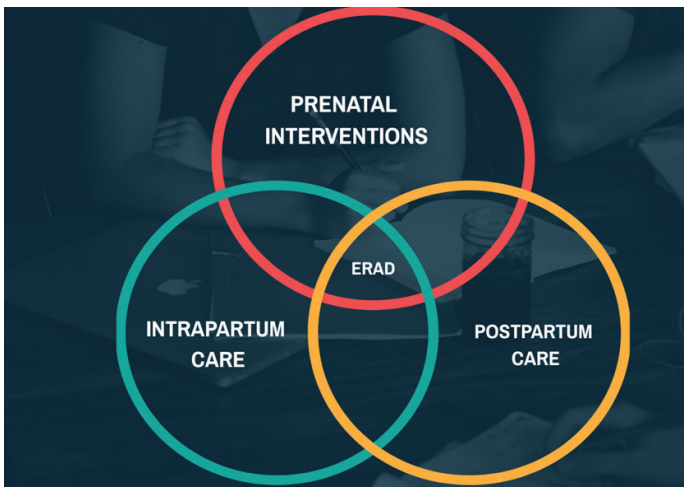

Table 1. Prenatal Interventions to Optimize Fourth Trimester Recovery[3]

Domain	Prenatal Focus	Benefit Postpartum
Dating	Early ultrasound	Accurate timing; less prematurity
Micronutrients Anaemia check	Folic acid, vitamins Hb check; iron	NTD prevention; less fatigue/anaemia/ transfusion risk
GDM	OGTT (24–28 wks.)	Early control; better outcomes
BP	Routine checks	Early pre-eclampsia detection
Mental Health	Trimester-based screening	Lower postpartum depression
Contraception	3rd trimester counselling	Planned spacing, fewer unplanned pregnancies
Breastfeeding	Education/support	Higher success; fewer infections
STIs	Risk-based screening	Timely treatment
Vaccines	As indicated (e.g., flu)	Maternal & neonatal protection

*__NTD-__ Neural Tube Defect, __GDM-__ Gestational Diabetes Mellitus

Intrapartum Care: Decision-Making, Delivery Modalities, and Enhanced Recovery[4]

- **Personalization is key**: The choice of delivery mode should be guided by maternal and foetal indications, presence of complications, and anticipated postpartum recovery.
- ERAD (Enhanced Recovery After Delivery) aims to reduce the recovery gap between caesarean and vaginal births.
- Areas of concern in the intrapartum care are discussed as under

Delivery Modality	Personalization is key:

Vaginal delivery is favored when feasible, including:

- TOLAC (Trial of Labor After Cesarean) & VBAC (vaginal birth after caesarean)
- External Cephalic Version (for breech)
- Twin delivery when the leading twin is cephalic
- Cesarean delivery is reserved for cases with clear medical indications or failed vaginal delivery attempts .
- Decision-support tools (e.g., VBAC calculator) facilitate informed counseling.
- Flexibility is essential: delivery plans must be adaptable to emergent intrapartum changes.

Risks and Trends in Cesarean Delivery	Cesarean birth, while life-saving when indicated, carries inherent risks:

- Hemorrhage, thromboembolism, infection
- Hysterectomy, anesthetic complications
- Renal and respiratory issues
- Global rise in cesarean rates, with maternal request emerging as a key contributor.
- Future pregnancy implications: counseling must cover risks such as placenta accreta spectrum and uterine rupture.

Risks and Trends in Cesarean Delivery	Enhancing Recovery: ERAD Principles

- Optimal pain management:
  - Neuraxial opioids (e.g., morphine)
  - NSAIDs
  - Multimodal analgesia (nerve blocks if needed)
- Postoperative strategies: - Minimize fasting (clear fluids preoperatively)
  - Encourage early ambulation and oral intake
  - Remove urinary catheter early
  - Prevent anemia, initiate breastfeeding, and facilitate early discharge
  - Prenatal education is foundational to patient preparedness and satisfaction.

Measuring Recovery: Scoring Systems	Quantifying recovery enhances objectivity, comparison, and shared decision-making. (quality of recovery-QoR)[10]

- QoR-40 / QoR-15
  - General postoperative recovery
- ObsQoR-10 / 11
  -Obstetric-specific functional status
- QoRaD-9
  -Includes postpartum domains
- **Tools evaluate:** Pain and physical comfort, Emotional well-being, Return to baseline function, Readiness for discharge.

Optimizing Vaginal Birth Outcomes	Strategies for Success:

Avoid non-indicated inductions

- Promote supportive, low-intervention labor environments
- Allow light oral intake during labor, if safe
- Offer early neuraxial analgesia with patient education
- Maintain effective epidural throughout labor
- Manage high-risk scenarios proactively, including:
- Glycemic control (diabetes) , Hypertension control
- Magnesium sulfate (neuroprotection)
- Antenatal steroids (lung maturity)

Recovery Outcomes: Ranked by Mode	Ranked Best to Worst

- Spontaneous vaginal / Successful TOLAC
- Operative vaginal delivery
- Elective cesarean section
- Cesarean after failed vaginal attempt
- Emergency cesarean delivery

Reducing Unnecessary Cesarean Deliveries	A combination of education, policy, and clinical pathways is essential

- Promote shared decision-making using objective, evidence-based data
- Support vaginal delivery efforts, including TOLAC and ECV(external cephalic version)
- Use clinical audits and feedback to monitor cesarean indications
- Measure success by morbidity, maternal satisfaction, and cost-effectiveness

Flexibility in Intrapartum Planning	**Certain situations necessitate a shift in delivery strategy:**
Acute fetal distress • Labor arrest, uterine rupture, or placental abruption • Failed TOLAC • Unexpected labor onset in scheduled cesarean cases • Preparedness for real-time clinical judgment is vital to maternal-fetal safety[2,5]	

ERAD in Caesarean Delivery: Protocol Snapshot[6]	
Preoperative fasting	Clear fluids up to 2 hours prior
Anaesthesia Neuraxial preferred	Use phenylephrine to prevent hypotension
Antibiotics Cefazolin	Add azithromycin if membranes ruptured
Postoperative nutrition	Early oral intake encouraged
Mobilization	Initiate within 6–12 hours
Catheter removal	Within 12–24 hours
Pain control	Neuraxial morphine + multimodal strategy
Patient Education	Provide patient-centered education starting prenatally.

Postpartum Care Essentials: ERAD-Inspired Pearls

- **Universal Recovery Goals**

  Regardless of delivery mode, recovery targets remain similar—early mobility, feeding, bonding, and safe discharge.

Important points are discussed as under:

Early Oral Intake	Begin ice/water within 1 hour postpartum. Resume full diet within 4 hours after cesarean. **Benefits:** • Faster gut recovery • Less nausea/vomiting • Shorter hospital stay • Preserves insulin sensitivity • No added complications • Reduces catabolism & stress
Pain Management	NSAIDs: Ketorolac (15–30 mg IV), Ibuprofen (600 mg/6h), Naproxen (500 mg/12h) • Paracetamol: 650–1000 mg every 6h • Gabapentin: Limited use for elective surgery
GI Recovery Aids	• Minimize opioids • Encourage chewing gum • Use stool softeners (e.g., docusate, PEG) • Remove barriers to early ambulation
Fluid Management	Hep-lock IV line after oxytocin ends to prevent fluid overload and polyuria
Glycemic Control	• Schedule cesarean early in diabetics • Target glucose: <180–200 mg/dL • Monitor hourly in mother and newborn • Promptly treat hyperglycemia to avoid poor healing
Promote Physical Recovery	• Encourage ambulation within 6–12 hours of vaginal delivery or cesarean, as tolerated • Support return to normal sleep-wake cycles to facilitate physical and psychological recovery
VTE Prophylaxis (venous thrombo embolism)	• Cesarean doubles VTE risk • Initiate pharmacologic (e.g., low molecular weight heparin) within 12–24 hours post-cesarean • Utilize sequential compression devices in patients at elevated bleeding risk or contraindicated for anticoagulation
Anemia & Medications	• Check hemoglobin on postpartum Day 1 or 2 • Resume essential pre-pregnancy medications unless contraindicated • Monitor for iron-deficiency anemia and treat accordingly
Mental Health Screening	• Screen routinely for postpartum depression using validated tools (e.g., EPDS, PHQ-9) • Provide psychological support, especially after traumatic or unplanned delivery events (e.g., failed TOLAC, inadequate analgesia)[2,7]
Early Discharge Planning	• Plan discharge preoperatively • Coordinate pediatric, breastfeeding, and contraception care • Use recovery goals & signage in rooms for communication
Breastfeeding Support (BF)	• Skin-to-skin contact immediately after birth • Support continued BF even after first feed • For formula-fed: Maintain skin contact ≥1 hour • Provide counseling & UNICEF-compliant education (10 Steps to Successful BF)8,9

With increasing evidence from recovery assessment tools like QoR-10, QoR-11, and QoRaD-9[10], identifying the most reliable measure of childbirth recovery remains a priority. Quality assessment has become critical—not only for reimbursement but also for driving continuous improvements in maternal care

Quality of recovery encompasses mental health, pain control, perioperative complications, and functional outcomes. The growing emphasis on outcome-driven care is likely to advance research into delivery-related risks and

validate comprehensive postpartum assessment tools.

While this review centres on immediate postpartum recovery, longer-term considerations—such as perineal and scar healing, pelvic floor rehabilitation, and prevention of chronic morbidity—warrant further study.

Conclusion

Pregnancy is a transformative journey, requiring thoughtful, evidence-based care. Informed decisions regarding delivery mode—supported by enhanced recovery protocols—can significantly improve maternal outcomes and elevate the childbirth experience for both patients and providers.

References

1. Choi E, Kazzi B, Varma B, Ortengren AR, Minhas AS, Vaught AJ, Bennett WL, Lewey J, Michos ED. The Fourth Trimester: a Time for Enhancing Transitions in Cardiovascular Care. Curr Cardiovasc Risk Rep. 2022;16(12):219-229.
2. 5Hu, Ling-Qun1; Lysandrou, Plato J.1; Minehart, Rebecca2; Wang, Jing-Ping3; Xia, Yun1; Hu, Yiling4; Worly, Brett5,∗. Care Bundles: Enhanced Recovery After Delivery. Maternal-Foetal Medicine 5(3): p 155-162, July 2023. | DOI: 10.1097/FM9.0000000000000178
3. Hofmeyr, G JustusAshorn, Per et al. Evidence-based antenatal interventions to reduce the incidence of small vulnerable newborns and their associated poor outcomes. The Lancet, Volume 401, Issue 10389, 1733 – 1744
4. WHO recommendations Intrapartum care for a positive childbirth experience, Geneva: World Health Organization; 2018
5. Abdolalipour S, Abbasalizadeh S, Mohammad-Alizadeh-Charandabi S, Abbasalizadeh F, Jahanfar S, Raphi F, Mirghafourvand M. Effect of implementation of the WHO intrapartum care model on maternal and neonatal outcomes: a randomized control trial. BMC Pregnancy Childbirth. 2024 Apr 17;24(1):283.
6. James O'Carroll, Brendan Carvalho, Pervez Sultan, Enhancing recovery after caesarean delivery – A narrative review, Best Practice & Research Clinical Anaesthesiology, Volume 36, Issue 1, 2022, Pages 89-105, ISSN 1521-6896
7. McCauley H, Lowe K, Furtado N, Mangiaterra V, van den Broek N. Essential components of postnatal care - a systematic literature review and development of signal functions to guide monitoring and evaluation. BMC Pregnancy Childbirth. 2022 May 28;22(1):448.
8. Evidence reviews for approaches and interventions for maintaining breastfeeding beyond 8 weeks after birth: Maternal and child nutrition: Evidence review J. London: National Institute for Health and Care Excellence (NICE); 2025 Jan. (NICE Guideline, No. 247.)
9. United Nations Children's Fund (UNICEF), 2018. BREASTFEEDING, A Mother's Gift, for Every Child
10. Ciechanowicz, Sarah & Setty, T. & Sathasivam, C. & Chazapis, Maria & Dick, John & Carvalho, Brendan & Sultan, Pervez. (2019). Development and evaluation of an obstetric quality-of-recovery score (ObsQoR-11) after elective Caesarean delivery. BJA British Journal of Anaesthesia. 122. 69-78. 10.1016/j.bja.

Breastfeeding Challenges in the Fourth Trimester: Solutions for a successful start

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Introduction

The "fourth trimester" – the first 12 weeks after birth – is a period of intense adjustment for mother and infant, influencing long-term health [1] .Obstetricians now recognize postpartum care as an ongoing process rather than a single 6-week visit[1] .This interval is crucial for establishing exclusive breastfeeding (EBF), as per WHO/ UNICEF recommendations to initiate breastfeeding within one hour of birth and continue exclusive breastfeeding for six months[2]. In India, exclusive breastfeeding rates have risen (from ~31% in 2015-16 to 43% in 2019-21).[4]

Benefits of breast feeding should be explained to the mother and other family members during antenatal visits and emphasized in the postpartum period.

For the mother

It decreases the risk of breast and ovarian cancers, diabetes and heart disease. It helps in postpartum recovery by causing uterine contraction, improves bone density and helps in weight maintenance. It also promotes mother and child bonding.

For the babies

It is a source of optimum nutrition and is tailor made for them. Colostrum is high in IGA antibodies. Breast milk has antibodies which protect the babies from infections of ear, GIT and respiratory tract and prevent Necrotising Enterocolitis (according to CDC). It reduces risk of asthma, obesity, type 1 diabetes and SIDS[Perrine2015]. Breastfed infants have a higher adult intelligence score. Breast milk is easily digestible leading to fewer digestive issues like gas, feeding problems and constipation. It is especially important for immunity in preterm infants [Lews 2017].

Breast feeding is cost effective and convenient.

Understanding and addressing fourth-trimester barriers – physical (latch, pain, supply), emotional (mood, stress), social (support, culture), and systemic (healthcare practices, policy) – is essential This review synthesizes recent guidelines (global and Indian).

Physical Challenges and Solutions

Difficulties in the early postpartum period often derail breastfeeding unless promptly addressed. A Kerala study found nipple soreness or difficulty accounted for ~21–22% of mothers' concerns[6] and ACOG notes that persistent nipple pain or trauma is a leading cause of early weaning.[1] ACOG emphasizes that persistent pain is associated with increased risk of mood disorders [1].

Women should be taught how to hold a baby. They should be taught to relax and correctly position the baby and themselves. A babies head back and neck should be supported comfortably. Ensure the baby is facing the breast, tummy to tummy. Maintain skin to skin contact. Common positions include cradle football and side lying. Importance of a through latch should be emphasized with pictorial guides. Signs of good latch are:

- Babies mouth covers a large portion of nipple and areola.
- Lips are flanged.
- Less areola visible below the lips than above.
- Chin touching the breast.
- Lower lip rolled down and nose free,
- Infants' chest rests against the mother's body.
- No pain or nipple injury to the mother.
- Audible and visible swallowing.
- Sustained rhythmic sucking.
- Improper latch leads to feeding problems and pain and early weaning.

Breast engorgement (overfull, tender breasts) is a common challenge. Engorgement can occur as colostrum transitions to mature milk around days 3–5, causing swelling and pain, which may last for up to 14 days. Mild fever and feeding difficulty may also be present. Fever seldom lasts more than 16 hours. Mastitis must be excluded. Factors associated with engorgement are primiparity, large amounts of i/v fluids during labor and a history of premenstrual breast tenderness. Early and frequent milk expression postpartum prevents this. Mild engorgement may be managed conservatively (frequent nursing with a good latch), but severe engorgement may require oral analgesia or even manual milk expression. As engorgement stretches and flattens the nipples, The Academy of Breastfeeding Medicine recommends "expressing or hand-extraction" to soften the breast before feeding, and warm compresses followed by a little milk expression to achieve a proper latch.[1]

Mastitis (fever, breast, erythema wedge shaped and pain) requires prompt treatment.[10] Onset is rapid. It is associated with oversupply of milk, nipple injury, improper latch and skipped feeds.[11] Frequent and complete milk removal is the cornerstone of management.[1] Safe antibiotics e.g., dicloxacillin or cephalexin 500mgs qid, or Clindamycin 300mgs qid, in case of penicillin allergy, for 10 to 14 days

should be used, and mothers should be encouraged to continue breastfeeding or pumping to maintain supply.[1] Complications are breast abscess, early weaning and sepsis. If an abscess forms, drainage may be required. With appropriate care, most women recover without disrupting breastfeeding.[1] Preventive measures include resolving latch issues early to avoid nipple injury and recognizing mastitis symptoms to treat before abscess develops.

Perceived low milk supply is a very common concern, though it seldom reflects true insufficiency. Mothers may misinterpret normal infant behavior (cluster feeding or fussiness) as inadequate supply. ACOG notes that 8–12 feeds per day with steady infant weight gain by day four or five, and 6 – 8 wet diapers per day usually indicates sufficient milk production.[1] Frequent breastfeeding (on demand, at least every 2–3 hours) and thorough milk removal (alternating breasts, breast compressions) stimulates supply. Women should be informed of signs of low milk supply as loss of skin turgor, depressed anterior fontanelle, insufficient wet or soiled diapers, lethargy, inconsolability, unchanged stool color, not bright yellow by day 5, a lack of steady weight gain, and jaundice. In cases of genuine hypogalactia (e.g. after severe postpartum hemorrhage or hypothyroidism), strategies include optimizing maternal health (treat anemia, thyroid), maximizing feeding frequency, and consider galactagogues if needed as all the substances have adverse effects. Evidence for herbal galactagogues (like fenugreek) is limited, metoclopramide or domperidone may be used when indicated [3].

Table1 summarizes key conditions and interventions for persistent nipple pain and breast pain [9]. A detailed history and examination is necessary to find out the cause of pain.

Conditions	Symptoms And Signs	Treatment
Infant ankyloglossia / infant factors	Ongoing nipple pain and an infant with restricted tongue movement due to tight lingual frenulum	Frenulectomy using scissors or laser Nipple care until frenulectomy is completed If baby is premature or ill extra lactation support involve neonatology team
Breast pump trauma	Nipple or soft tissue injury	Observe a pumping session. Adjust level of suction or fit of flange
Superficial bacterial infection associated with skin trauma	Persistent cracks or fissures-weeping yellow crusted lesions in conjunction with other skin conditions Cellulitis	Topical mupirocin or bacitracin ointment Oral antibiotics such as cephalosporin or penicillinase resistant penicillin
Candida infection	Pink nipple or areola Shiny flaky appearance Nipple pain out of proportion to clinical findings, radiating to breast	Topical azole and antifungal ointment Oral fluconazole 200mg once then 100mg daily for 7 -10 days may be used for resistant cases. Fluconazole with domperidone and erythromycin is to be avoided as it can prolong QT interval. Nystatin for infant mouth.
HSV	Small tender vesicles with erythematous base Axillary lymphadenopathy	Oral acyclovir or valacylovir Temporarily stop breastfeeding or giving expressed breast milk from the affected breast. Milk from unaffected breast can be given/breastfeed from unaffected breast if affected breast is covered. Resume feeding once lesion has resolved. Lactation support
Herpes Zoster	Painful vesicular rash following a dermatome	Same as above
Eczema	Erythematous skin with blisters	Apply emollient, steroid ointment twice daily for 2 weeks immediately after breast feeding to maximize contact time. Use second generation antihistamines for pruritis. May require oral steroids short course for three weeks.
Allodynia or functional pain	Pain to light touch as brushing of clothes against nipple causes excruciating pain	Round the clock NSAIDS Propranolol 10 mg TDS increase it to 80mg. if does not respond. Antidepressants and massage therapy.
Over supply	Breast fulness, milk leakage	Stop pumping or hand expressing in between feeds Do it only before bedtime in lieu of feeding if breasts are overfull Block feeding from each breast for three hours.so fullness provides feedback to breast to reduce milk supply, though controversial. Medication such as sage extract and estrogen containing contraceptives can also be used.

Other Challenges

- **Post Cesarean -** Use breastfeeding positions compatible with post-C/S (e.g. football hold or side-lying).[3] Adequate analgesia and early ambulation help mothers initiate feeds comfortably.[3]
- **Inverted nipples** may cause feeding difficulty. In the last few months of ANC manual eversion should be done with fingers.[12]
- **Hepatitis B** positive mothers can breast feed safely if hepatitis B immunoglobulins have been given to the newborn.[12]
- In mothers with **CMV** infection breastfeeding is not contraindicated.[12]
- **Hepatitis C** has not been seen to be transmitted by breast feeding. [12]
- **NACO** recommends breastfeeding in HIV positive mothers on ART.
- **Contraindications:** in those women who take street drugs or do no control their alcohol intake, in cases of active tuberculosis and in infants of galactosemia. Breast feeding should be encouraged in women who are stable on medication assisted treatment for opioid use disorders.
- **Alcohol** intake should be occasional, no more than.5 gms per kg body weight during breastfeeding. Breast feeding should be avoided for a minimum of 2 hours after alcohol intake. Alcohol intake impedes milk production and ejection and can impair infant's motor development.
- **Tobacco and marijuana** smoking is not an absolute contraindication to breastfeeding. Both should be discouraged. Exposure to tobacco smoke may cause infant allergies and SIDS.
- **Persistent breast** mass should be evaluated to avoid any delay in diagnoses of pregnancy associated breast cancer meanwhile lactation support should be provided.
- **Cytotoxic drugs** may cause potential immunosuppression or neutropenia, affect growth, and may increase risk of childhood cancers. So, seek safer alternatives. Neonatal exposure can be minimized if dose is taken immediately after a breastfeeding session. For radionucleotide drugs select one with shortest excretion time in milk. Pump and store milk in deep freezer before study. After study maintain lactation but discard all milk till radioactivity is present.
- **In case of preterm infants** give specific instructions on hand expression and mechanical expression techniques and storage of breast milk in anticipation of difficulties in breast feeding. Help her initiate colostrum expression within 1 hour of birth. Provide lactational support.
- **Medication used during lactation.** Women should be counseled regarding medication use; antibiotics can be administered as indicated. NSAIDS and opioids such as morphine can be administered. For opioids give shortest course and monitor infants for excessive sedation.

Emotional and Psychological Challenges

The fourth trimester brings emotional stress that can impede breastfeeding. Up to 1 in 7 mothers develop clinical postpartum depression (PPD)[1]. Maternal depression and anxiety can disrupt milk production and feeding interactions, creating a vicious cycle. The ACOG recommends routine screening for PPD and anxiety with validated tools (e.g. Edinburgh Postnatal Depression Scale) during postpartum visits.[1]

Fatigue and sleep deprivation are ubiquitous in the fourth trimester and can undermine breastfeeding. Counsel on sleep strategies (daytime naps when baby sleeps, sharing night feeds) and realistic feeding expectations. One trial showed that even 15 minutes of counseling before discharge helped mothers feel less overwhelmed [1]. Referral to social support (family counseling, mother support groups, online forums) provides community and practical tips. In cases of PPD or severe anxiety, treatment (therapy, antidepressants safe in lactation such as sertraline, or hormonal therapy if indicated) should be arranged [1].

A mother with postpartum depression may benefit from home visits or support groups. Integrating perinatal mental health care into Obstetric or pediatric visits can catch issues early.[1]

Social and Cultural Factors

In India and elsewhere, extended family often play a key role in postpartum care. Kerala research found that family pressure from elders was a major reason mothers stopped exclusive breastfeeding.6 Traditional practices, as giving prelacteal feeds (honey, water, ghutti) are discouraged by WHO, [3] but persist. Clinicians should explain that colostrum is protective, and that the newborn's tiny stomach requires only breastmilk initially. A family "breastfeeding coach" at home (who helps with chores so the mother can rest and feed) can mitigate cultural barriers.

Economic considerations: returning to work is a frequent driver of early weaning. A Kerala study found that 23% of mothers cited return to work as a reason for feeding problems [6]. In India, the Maternity Benefit (Amendment) Act 2017 extended paid leave to 26 weeks, but short-term contract workers and small employers may still default. ACOG specifically notes that "limited access to paid maternity leave and barriers to breastfeeding in the workplace" contribute to early weaning.[1] Practical measures by employers include providing a private lactation room,

allowing on-site daycare, or scheduling breaks for milk expression. In the community, linking mothers to peer counselors or local support networks (such as La Leche League India or government health workers).

Formula marketing: The breastfeeding literature warns that formula ads often target anxious mothers, suggesting formulas solve "insufficient milk" or infant fussiness [4]. Indian data note that working urban mothers with limited leaves are especially vulnerable to formula use [4]. Sharing educational materials (booklets, videos) in the mother's language can empower her to resist social pressure and marketing.

Systemic and Healthcare Factors

Healthcare systems themselves must be oriented to facilitate breastfeeding. The revised Baby-Friendly Hospital Initiative (BFHI) "Ten Steps" are explicitly endorsed by WHO/UNICEF and supported by Indian guidelines.[3] They are:

- Have a written policy that is regularly communicated to all the staff involved and parents.
- Staff involved in feeding services and support services should have sufficient knowledge to support breast feeding.
- Early and uninterrupted skin to skin contact between infants and mothers should be promoted.
- All mothers should be supported to initiate breast feeding as soon as possible, within first hour of birth.
- Mothers should receive practical support to initiate, establish, and manage common breast-feeding difficulties.
- Feed newborns nothing but breast milk, unless medically indicated and prioritize donor breast milk when supplementation is required.
- Show mothers how to breast feed and how to maintain lactation even when separated from the infants.
- Rooming-in, which allows frequent feeding and learning baby cues.
- Give no pacifiers to breastfeeding newborns.
- Help start breastfeeding support groups and refer mothers to them.[2]
- These practices not only improve milk supply and bonding, but also let clinicians detect problems early.

Provider training: Physicians and nurses must be equipped to address lactation issues. WHO recommends a 20-hour course on breastfeeding for maternity staff[3], and FOGSI endorses a similar 20-hour course. Breastfeeding counseling during ANC visits should ensure every pregnant woman and her family receive at least an hour of information on breastfeeding benefits and techniques and management of associated problems.[3]

Postpartum support and follow-up: After discharge, follow-up is vital. ACOG now recommends that all women have a postpartum visit within 3 weeks of birth, then a comprehensive visit by 12 weeks.[1] Home visits by community health workers, like ASHA workers in our country can reinforce feeding support. Early phone calls like the KILKARI program or telehealth check-ins within the first week postpartum are also beneficial. India's National Health Mission and MAA program have advocated for at least 5 postnatal contacts (including by day 6 and week 6) for counseling on infant feeding. Clinicians should coordinate care with pediatricians and nurses to ensure breastfeeding progress is tracked at immunization visits and well-child checks.

Policies and programs: India's IYCF Guidelines (2019-20) and MAA campaign emphasize breastfeeding counseling, restrict infant formula promotion, and set targets for exclusive breastfeeding [5][8]. The Infant Milk Substitutes (IMS) Act 1992 (amended 2003) legally prohibits free samples and direct promotion of formula in healthcare settings. Hospitals can achieve BFHI certification.

References

1. McKinney J, Keyser L, Clinton S, Pagliano C. ACOG Committee Opinion No. 736: Optimizing Postpartum Care. Obstet Gynecol. 2018 Sep;132(3):784-785. doi: 10.1097/AOG.0000000000002849. PMID: 30134408.
2. World Health Organization. Infant and young child feeding. Newsletter; 20 December 2023.
3. Bapaye C, Bhuyar S,Wani M, Kshirsagar S, Singhal D, Wankhede U, et al. Good Clinical practice Recommendations on Breastfeeding. Mumbai Federation of Obstetric and Gynaecological Societies of India.(FOGSI);2024.
4. Reddy N, S., Dharmaraj, A., Jacob, J. et al. Exclusive breastfeeding practices and its determinants in Indian infants: findings from the National Family Health Surveys-4 and 5. Int Breastfeed J 18, 69 (2023). https://doi.org/10.1186/s13006-023-00602-z
5. Ministry of Health and Family Welfare. Implementation guidance of Maa programme. BFHI India. 2023.accessed at https://www.bfhi-india.in/implementation-guidance-of-maa-programme
6. Suresh, A., K., J. J., & Simethy, M. A. (2024). Exploring breastfeeding patterns and barriers in a Kerala tertiary care hospital: a cross-sectional study. International Journal of Contemporary Pediatrics, 11(4), 429–434.
7. Centers for Disease Control and Prevention (CDC). Percentage of any and exclusive breastfeeding by month since birth among U.S. infants born in 2008 [figure]. National Immunization Survey; 2008
8. Ministry of Health and Family Welfare, Government of India. Enhancing optimal infant and young child feeding practices: guidelines for enhancing IYCF practices. National Health Mission; 2013. Accessed at https://nhm.gov.in/images/pdf/

programmes/child-health/guidelines/Enhancing-optimal-IYCF-practices.pdf

9. Modified from Berens P, EglasA, Molloy M,Steube AM.Academy Of Breastfeeding Medicine.Breast FeedMed 2016;11:46-53
10. Berens PD. Breast Pain: Engorgement, Nipple Pain, and Mastitis. Clin Obstet Gynecol. 2015 Dec;58(4):902-14. doi: 10.1097/GRF.0000000000000153. PMID: 26512442.
11. Fernández L, Mediano P, García R, Rodríguez JM, Marín M. Risk Factors Predicting Infectious Lactational Mastitis: Decision Tree Approach versus Logistic Regression Analysis. Matern Child Health J. 2016 Sep;20(9):1895-903. doi: 10.1007/s10995-016-2000-6. PMID: 27067707.
12. Cunningham, F.G., Leveno, K.J., Dashe, J.S., et al. (2022). Williams Obstetrics, 26e. Pg 640-2; McGraw-Hill Education, New York.
13. Breastfeeding Challenges: ACOG Committee Opinion, Number 820. Obstet Gynecol. 2021 Feb 1;137(2):e42-e53. doi: 10.1097/AOG.0000000000004253. PMID: 33481531.

Calendar for AOGD Monthly Clinical Meeting 2025-2026

25th July 2025	Army Hospital- Research & Referral
29th August 2025	AIIMS
26th September 2025	VMMC &Safdarjung Hospital
31st October 2025	DDU Hospital
28th November 2025	MAMC & LNJP Hospital
26th December 2025	Sir Ganga Ram Hospital
30th January 2026	Dr RML Hospital
27th February 2026	UCMS & GTB Hospital
27th March 2026	LHMC & SSK Hospital
24th April 2026	To be decided

High-Risk, High Priority: Advancing Fourth Trimester Care in India

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Introduction

According to the Sample Registration System (SRS) 2022, India's maternal mortality ratio (MMR) stands at 97 per 100,000 live births[1], with a considerable proportion of deaths occurring in the postpartum period, especially among high-risk women.

The postpartum period, often termed the "fourth trimester," encompasses the first 12 weeks after childbirth. This period is critical for maternal recovery, newborn adaptation, establishment of breastfeeding, contraception advice and initiation and advice about future pregnancy. While global and national health policies focus on safe delivery, the care provided to women post-delivery, particularly those who experienced high-risk pregnancies, is often inadequate or fragmented. According to Indian Council of Medical Research (ICMR), over 60% of maternal complications occur postpartum, most within the first 2 weeks.[2] NFHS-5 data (2019–21) reveals that only 62% of Indian women receive a postnatal checkup within two days of delivery.[3] In rural areas, postnatal care is further compromised due to limited health infrastructure and poor awareness. For women with high-risk conditions, this translates to missed opportunities for early diagnosis of complications, leading to preventable morbidity and mortality.

Care in Fourth trimester of Pregnancy

Effective postnatal care can significantly reduce maternal and neonatal morbidity and mortality.

1. Timing and Structure of Postnatal Visits

The World Health Organization (WHO) recommends a minimum of four postnatal contacts: within 24 hours, on day 3, between days 7–14, and at 6 weeks after birth.[4] The American College of Obstetricians and Gynecologists (ACOG) also emphasizes the need for a comprehensive assessment within 6 weeks, ideally starting within 3 weeks postpartum.[5]

2. Physical Assessment and Recovery

Key physical checks include:

- Vital signs, uterine involution, and bleeding patterns
- Perineal or cesarean wound healing
- Breast health, including assessment for engorgement or mastitis
- Bladder and bowel function

Anemia, especially after blood loss during delivery, should be assessed and treated with iron supplementation and dietary counseling.

3. Emotional and Mental Health

Up to 20% of women experience postpartum depression or anxiety.[6] Health professionals should assess mood changes, fatigue, sleep disturbances, and thoughts of self-harm.

4. Infant Feeding and Lactation Support

Exclusive breastfeeding should be encouraged for the first 6 months.

- Assessing latch, positioning, and infant weight gain
- Managing common breastfeeding problems (e.g., nipple pain, low supply)
- Referring to lactation consultants when needed

5. Nutrition and Lifestyle

A well-balanced diet rich in iron, calcium, protein, and hydration is essential for recovery and lactation. Physical activity can be resumed gradually with pelvic floor exercises and light walking.

6. Family Planning and Sexual Health

Contraception options should be discussed before discharge or at the first postnatal visit.

- Lactational Amenorrhea Method (LAM)
- Barrier methods
- Oral contraceptives or injectables
- Long-acting reversible contraception (LARC) or sterilization, if chosen

Contraception advice should be based on minimal eligibility criteria and appropriate for specific condition.

Condition		CHC	POP	Cu-IUD	LNG -IUD	In-ject-able	Im-plant
Breast-feeding	<6 weeks	4	2	1	2	3	2
	6 weeks- 6 months	3	1	1	1	1	1
	>6 months	2	1	1	1	1	1
Hypertension		3	1	1	1	1	1
Diabetes		2	2	1	2	2	2
Cardiovascular disease		3	2	1	2	3	2
VTE		4	2	1	2	2	2
Thyroid disorder		1	1	1	1	1	1
Psychiatric disorder		2	1	1	1	1	1

CHC- combined hormonal contraceptive, POP- progesterone only pill, Cu- copper, IUD- intrauterine device, LNG- levonorgestrel, 1- used in any circumstance, 2- generally used method, 3- not recommended unless other more appropriate methods are not available or not acceptable, 4- not to be used.

Sexual activity can resume after 4–6 weeks, once the mother feels physically and emotionally ready.

7. Education and Warning Signs

Health workers should educate mothers on danger signs such as:

- Heavy bleeding
- Fever or foul-smelling discharge
- Severe headache or blurred vision
- Breast redness or pain
- Signs of depression

8. Continuity of Care

Linkage to primary care, specialists (if needed), and community support groups ensures continuity of care and long-term maternal well-being. Telehealth or home visits may help overcome access barriers.

Understanding High-Risk Pregnancy in the Postpartum Context

A high-risk pregnancy involves any condition that threatens the health of the mother or fetus such as:

- Hypertensive disorders (preeclampsia/eclampsia)
- Gestational diabetes mellitus (GDM)
- Surgical recovery after cesarean section
- Preexisting or acquired heart disease
- Risk of venous thromboembolism (VTE)
- Thyroid dysfunctions
- Mental health disorders such as postpartum depression
- Severe anemia or postpartum hemorrhage
- Obesity
- Early onset Fetal Growth Restriction (FGR)
- Preterm prelabour rupture of membranes (PPROM) and spontaneous preterm delivery

Effective fourth trimester care for these women involves comprehensive follow-up, screening, counseling, with prompt intervention involving multidisciplinary approach.

Hypertensive Disorders in the Fourth Trimester

Preeclampsia and eclampsia are responsible for 5–10% of maternal deaths in India.[7] Though symptoms may improve after delivery, hypertension may persist or worsen postpartum. 25% of eclampsia and 30% of the HELLP can develop in the postpartum period.

Management:

- Monitor blood pressure every 4–6 hours for the first 48 hours, then daily for the first week.
- Continue antihypertensive therapy (e.g., labetalol, nifedipine) with target BP of 150/100mmHg and withhold if BP<140/90mmHg.
- Lab parameters will resolve by 48hours of delivery.
- Screen for complications like renal dysfunction, seizures, or stroke, pulmonary oedema.
- Educate about warning signs: headache, blurred vision, epigastric pain.
- Consider magnesium sulfate if needed for severe or impending features of pre-eclampsia.
- Antiphospholipid antibody screening in case of early onset pre-eclampsia.
- Recurrence in subsequent pregnancy is 50% and 30% for early and late onset preeclampsia, respectively.
- Aspirin 75-150mg is recommended in subsequent pregnancy from 12 to 36 weeks.

Table 1: Postpartum Hypertension Management Timeline

Time Postpartum	Action
Day 0–2	BP check every 4–6 hours
Day 3–7	Daily BP check
Week 2–6	Weekly BP check
After 6 weeks	Specialist referral if needed

Persistent hypertension after 12 weeks indicates chronic hypertension and necessitates further investigation.

Gestational Diabetes Mellitus (GDM)/ pregestational Diabetes Mellitus

GDM affects 3–5 million pregnancies annually in India. Women with GDM are at increased risk for type 2 diabetes mellitus (T2DM), with up to 35% developing T2DM within five years postpartum.[8]

Postpartum Screening

- Dose adjustment of hypoglycemic agents for pregestational diabetes mellitus. The basal and bolus insulin doses needed after delivery are typically 30% to 50% of the doses required during pregnancy just before delivery.
- Conduct a 75g oral glucose tolerance test (OGTT) at 6–12 weeks. Advise annual blood glucose screening.
- Women complicated by GDM have a 10-fold higher risk of developing diabetes during their lifetime and the risk is approximately 20% at 10 years. Promote lifestyle changes (diet, physical activity).
- Encourage exclusive breastfeeding, which reduces maternal insulin resistance.

Recovery After Cesarean Section

Cesarean section rates in India stand at 21.5% nationally and are even higher in private hospitals.[6] Post-CS mothers are at elevated risk for wound infections, delayed mobility, thromboembolism, and breastfeeding challenges.

Key Components of Care

- Wound care and monitoring for infection (fever, redness, discharge).
- Adequate pain control with paracetamol or non-NSAID analgesics.
- Women undergoing cesarean section with one or more risk factors should receive low molecular weight heparin starting 6–12 hours after surgery for at least 10 days, along with early mobilization, hydration, and compression stockings as appropriate.[9]
- Iron, calcium and vitamin D supplementation.
- Breastfeeding support and psychological counseling.
- If family is not complete patients should be counselled for use of effective contraception and maintaining delivery to delivery interval of 18-24 months (or inter-conception period of at least 6 months)

Red flags: severe pain, wound separation, foul-smelling lochia, or signs of endometritis should prompt urgent evaluation.

Cardiac Conditions in the Postpartum Period

Heart disease remains the leading indirect cause of maternal mortality in India[10] complicating 4% of all pregnancies. Common conditions include rheumatic heart disease (40-60%), congenital heart defects (25-30%), peripartum cardiomyopathy (10-15%) and arrythmias.[11]

Table 2: Modified WHO classification of maternal cardiovascular risk

WHO Class	Risk Level	Management Plan
I	No increased risk	Routine postpartum care
II	Mild risk	Cardiology follow-up within 2 weeks
III	Significant risk	Joint care (cardiology + obstetrics)
IV	Extreme risk	Avoid pregnancy; requires intensive care

Postpartum Considerations:

- Medical care for pregnant women with heart disease is best provided through a multidisciplinary team including cardiologists, maternal fetal medicine specialists, obstetrics anaesthesiologists, and clinical/ social coordinators.
- Immediately after delivery, blood from the uterus is returned to the central circulation to protects against the hemodynamic effects that may accompany postpartum haemorrhage. In the context of cardiac disease, this acute centralization of blood may increase pulmonary pressures and pulmonary congestion worsening cardiac function.
- Avoid fluid overload (restrict IV fluids if needed) and promote diuresis.
- Continue cardiac medications (e.g., beta-blockers, diuretics).
- Schedule a 6-week postpartum visit with the cardio-obstetrics team to evaluate cardiovascular disease risk, contraception advice and future pregnancy risk.

Venous Thromboembolism (VTE)

VTE is a leading cause of postpartum maternal death, especially in women with additional risk factors like CS, obesity, prolonged bed rest, thrombophilia, or a previous VTE history.[12]

Postpartum anticoagulation

- Unfractionated heparin or LMWH can be restarted 4–6 hours after vaginal delivery or 6–12 hours after cesarean delivery.
- Heparin is restarted 1 hour after neuraxial blockade and catheter removal.
- LMWH is restarted 24 hours after neuraxial blockade and at least 4 hours after catheter removal.
- Warfarin can be started on the first postdelivery day. The initial dosages of warfarin should be 5 mg for 2 days. Subsequent dosages are determined by monitoring the international normalized ratio (INR). To avoid paradoxical thrombosis and skin necrosis from warfarin's initial anti–protein C effect, therapeutic dosages of UFH or LMWH are administered for a minimum of 5 days and until the INR has been at therapeutic levels (between 2.0 and 3.0) for 2 successive days.

Prevention Strategies: [9]

- Early mobilization post-delivery.
- Adequate hydration
- Use of compression stockings.
- Low Molecular Weight Heparin (LMWH) for 10 days to 6 weeks in high-risk patients.
- Education on signs of pulmonary embolism (e.g., chest pain, shortness of breath).

Thyroid Dysfunction in the Fourth Trimester

Thyroid disorders are often overlooked postpartum.

Hypothyroidism affects up to 11% of pregnant women in India.[13]

Key Points:

- Screen TSH at 6–12 weeks postpartum in known hypothyroid women.
- Follow up visit with a medical endocrinologist at 6 weeks postpartum.
- Adjust levothyroxine dose based on clinical symptoms and TSH levels.
- Monitor for postpartum thyroiditis (hyperthyroid phase followed by hypothyroid phase).
- Thyroid dysfunction can adversely affect breastfeeding and mood.

Postpartum Mental Health

Postpartum depression (PPD) affects 15–22% of Indian women.[14] Yet, stigma and lack of mental health resources result in underdiagnosis.

Risk Factors:

- Poor social or family support
- Domestic violence
- Pre-existing mental illness
- High-risk pregnancy or neonatal complications

Screening Tool: Edinburgh Postnatal Depression Scale (EPDS)

Score	Interpretation	Action
<10	Normal	Routine reassurance
10–12	Possible depression	Follow-up and counseling
≥13	Likely depression	Psychiatric referral

Management includes: counseling, support groups, SSRIs (safe in breastfeeding), and family education and cognitive behavior therapy.

Rupture of Membranes

Rupture of membranes (ROM) before or during labor can be either term or preterm and may be spontaneous or iatrogenic. Postnatal care for mothers with a history of ROM, especially prolonged or preterm rupture, is aimed at monitoring for infection, promoting healing, and supporting neonatal care.

- Prolonged rupture of membranes (>18 hours) or preterm premature rupture of membranes (PPROM) are at increased risk of maternal infections such as chorioamnionitis or endometritis upto 30% and neonatal sepsis in 2-4%. These women require close monitoring of temperature, uterine tenderness, and lochia. If infection was suspected or diagnosed, postpartum antibiotics may need to be continued.
- Avoidance of intrauterine contraceptive devices in prolonged ROM.
- All infants born after ROM should be thoroughly screened for sepsis by complete blood count, blood culture, CSF examination and considering intravenous penicillin and gentamycin if sepsis.
- Risk of neonatal respiratory distress due to oligohydramnios and pulmonary hypoplasia and associations of prematurity with intracranial haemorrhage, jaundice and feeding difficulties require long term paediatric follow-up.

Miscellaneous High-Risk Conditions in 4th trimester

Condition	Risks	Postnatal care
Fetal Growth Restriction	• Complications of prematurity • Neonatal Cerebral palsy • Neonatal metabolic syndrome • Maternal hypertension • Depression	• NICU care and ventilatory support • Pediatric follow up • Treatment of maternal hypertension • Psychological support
Postpartum Hemorrhage	• Hypovolemic shock • DIC • Thromboembolism • Renal Failure • MODS • Maternal mortality	• Vital monitoring • Early detection and referral • MDT • Blood transfusion • Thromboprophylaxis • Early medical and surgical intervention
Obesity	• Cardiovascular complications • Lactation failure • Thromboembolism • Depression • Neonatal obesity and metabolic syndrome	• Diet, exercise and lifestyle modification • Cardiovascular risk assessment • Lactation specialist Thromboprophylaxis • Psychological support • Effective contraception and avoidance of estrogen containing contraceptives • Pediatric follow up

Health System Challenges in India and Strategies for Improvement

Despite rising institutional deliveries, postpartum care remains a neglected area.

Systemic Barriers in optimal management of Fourth stage of pregnancy

- Lack of trained staff for postpartum monitoring
- Poor integration between facility and community-level care
- No standardized discharge checklists including extended post partum care
- Stigma around mental and sexual health
- Limited male partner and family involvement in extended care.

ICMR field studies reveal that only 43% of high-risk mothers received BP monitoring within 2 weeks postpartum.[4]

Strategies for improving care in fourth trimester of pregnancy:

1. Fourth Trimester Clinics: Set up dedicated postpartum care units within PHCs and CHCs to monitor high-risk women.
2. Digital Tracking: Use digital health tools for postpartum reminders and symptom checklists (e.g., WhatsApp-based follow-ups).
3. Home Visits: Empower ASHAs and ANMs to conduct structured home visits focusing on high-risk indicators.
4. Discharge Planning: Mandate risk-based discharge planning including:
    - Next follow-up date
    - Medication summary
    - Effective Contraception
    - Counseling on red flags
5. Ensure linkages to specialty clinics

Conclusion

In India maternal mortality is still a public health problem and attention to the fourth trimester can help prevent a substantial proportion of maternal deaths and morbidities. The fourth trimester, encompassing the first 12 weeks postpartum, is a critical yet often under-recognized phase in maternal healthcare, especially for women with high-risk pregnancies.

High-risk pregnancies often involve complex medical conditions such as hypertensive disorders, gestational diabetes, cardiac diseases, venous thromboembolism, and mental health challenges. Many of these conditions are not resolved immediately after delivery and may even worsen in the postpartum period.

Comprehensive postpartum care tailored to high-risk mothers should include frequent clinical assessments, laboratory monitoring, and individualized management plans. Patient education plays a vital role in encouraging adherence to treatment, promoting healthy lifestyle changes, and ensuring early recognition of warning signs. Breastfeeding support, family planning counseling, and nutritional guidance are also important components of care.

A multidisciplinary approach involving maternal and fetal medicine specialists, cardiologists, endocrinologists, mental health professionals, and primary care providers improves coordination and continuity of care. Early postpartum visits, within the first one to two weeks after discharge—help identify and address complications promptly. Telemedicine and community health worker involvement can further enhance access and support for vulnerable populations.

Moreover, addressing social determinants of health such as access to healthcare, socioeconomic factors, and cultural barriers is necessary to reduce disparities in postpartum outcomes. Strengthening healthcare infrastructure and policies that emphasize postpartum care integration will benefit high-risk women significantly.

In summary, the fourth trimester is a vulnerable but pivotal period in the continuum of maternity care. Enhanced awareness among healthcare providers, combined with patient-centered care models and system-level support, is essential to meet the complex needs of high-risk mothers in the postpartum phase and to reduce preventable complications.

References

1. Sample Registration System (SRS) Statistical Report 2022. Registrar General of India.
2. ICMR Bulletin 2021: Maternal Health Complications in India.
3. National Family Health Survey (NFHS-5), 2019-21. Ministry of Health and Family Welfare.
4. World Health Organization. WHO Recommendations on Postnatal Care of the Mother and Newborn. Geneva: World Health Organization; 2013.
5. American College of Obstetricians and Gynecologists. Optimizing Postpartum Care. ACOG Committee Opinion No. 736, 2018. https://www.acog.org
6. Centers for Disease Control and Prevention. Depression Among Women. https://www.cdc.gov/reproductivehealth/depression/index.htm
7. Magee LA, et al. The hypertensive disorders of pregnancy. Pregnancy Hypertension. 2022;27:148–169.
8. Seshiah V, et al. Gestational diabetes mellitus in India. J Assoc Physicians India. 2018;66(9):11–14.

9. Royal College of Obstetricians and Gynaecologists. Reducing the risk of venous thromboembolism during pregnancy and the puerperium (Green-top Guideline No. 37a), 2015 (updated 2019).
10. Chopra S, et al. Cardiac disease in pregnancy: A tertiary care experience. Indian Heart J. 2020;72(2):111–115.
11. Regitz-Zagrosek V, et al. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy. Eur Heart J. 2018;39(34):3165-3241.
12. James AH. Venous thromboembolism in pregnancy. Arterioscler Thromb Vasc Biol. 2009;29(3):326–331.
13. Dhanwal DK, et al. High prevalence of subclinical hypothyroidism during pregnancy in North India. Indian J Endocrinol Metab. 2013;17(2):281–284.
14. Upadhyay RP, et al. Postpartum depression in India: A systematic review and meta-analysis. Bull WHO. 2017;95(10):706–717.

Postpartum Anaemia: The Overlooked Fourth Trimester Challenge with lasting effects

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Introduction

Postpartum anaemia (PPA) is a common and critical public health concern, often affecting women in the period following childbirth especially in low and middle-income countries like India. Postpartum anaemia is defined as haemoglobin level of less than 11 g/dL during the postnatal period (typically up to 6 weeks after childbirth).

Postpartum anaemia can significantly affect a woman's quality of life, caregiving ability, mental health, and long-term physical well-being. It also impacts neonatal outcomes such as breastfeeding success, growth, and development. Therefore, understanding the etiology, risk factors, impact and management of PPA is crucial for improving maternal health outcomes globally.

Pregnancy is a period of remarkable physiological adaptation, including, including significant changes in haematopoiesis. Maternal blood volume increases by 40-50% to meet the demands of the growing foetus and placenta, leading to a state of "physiological anaemia" where plasma volume increases disproportionately to red blood cell mass. Childbirth itself, whether vaginal or Caesarean section, inevitably involves blood loss. The average blood loss for a vaginal delivery is approximately 500 mL, while for a Caesarean section, it can range from 800-1000 mL or more. This acute blood loss, superimposed on the pre-existing physiological changes, makes the postpartum period a critical window for the development of anaemia.

But there comes a question "Why does anemia matters?"

Maternal anemia impacts a woman's health, energy, and productivity—reducing work capacity by up to 50% even in mild cases. Other than physical symptoms, anemia undermines a woman's well-being, aspirations, and dignity.

Optimal maternal health is essential not only for the mother's own well-being but also for her ability to care and breastfeed her child, for at least the first six months. Evidence shows that anemia during pregnancy is associated with low IQ levels in children.

Anemia contributes to 20–40% of maternal mortality.[5] Also, anemic mothers are more likely to give birth to anemic babies, creating a cycle of intergenerational anemia. Breaking this cycle is critical to improving long-term health outcomes for future generations.

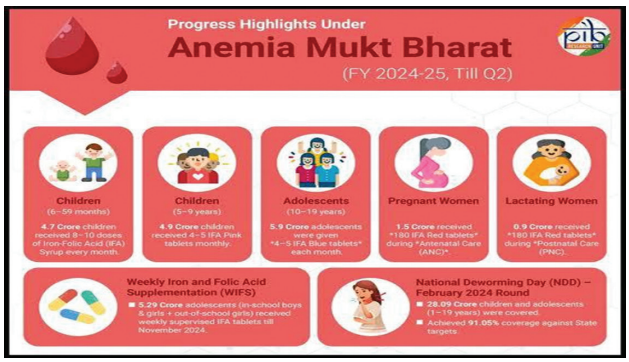
In response to the high burden of anaemia, the Government of India launched the Anaemia Mukt Bharat (AMB)[1] strategy under the Poshan Abhiyaan in 2018. This initiative adopts a life-cycle approach to reduce anaemia prevalence by 3% per year among vulnerable populations, including postpartum women.

Epidemiology of Postpartum Anaemia

Postpartum anaemia is a problem affecting a significant proportion of women globally. Its prevalence varies considerably across geographical regions, largely influenced by socioeconomic factors, nutritional status, and access to antenatal care and iron supplementation programs. In many low-income countries, the prevalence of PPA can be as high as 50-70%[5], reflecting high rates of pre-existing anaemia, inadequate iron intake, and limited access to healthcare. Even in high-income countries PPA remains a matter of concern with prevalence amongst lactating mothers (typically 10-20%) and is often linked to severe blood loss during delivery, pre-existing iron deficiency, or specific medical conditions. The global burden of PPA highlights the need for effective prevention and management strategies.

Status of Anemia in India as per the **National Health Survey – 5 (2019-2021)**

Groups	Anaemia Rate (%)
Men (15–49 years)	25%
Women (15–49 years)	57%
Adolescent boys (15–19 years)	31.1%
Adolescent girls (15–19 years)	59.1%
Pregnant women (15–49 years)	52.2%
Children (6–59 months)	67.1%



Risk factors include:

- Antenatal Anaemia: Women who are anaemic during pregnancy are at a significantly higher risk of developing PPA as their iron stores are already depleted, and they have less physiological reserve to cope with blood loss.
- Excessive Intrapartum Blood Loss: The most important and direct cause of PPA. Factors contributing to excessive bleeding include prolonged labour, uterine atony, placenta previa, placental abruption, and operative deliveries (Caesarean section, vacuum extraction, forceps delivery). Multiparity: Women with multiple previous pregnancies usually have chronically depleted iron stores.
- Short Inter-Pregnancy Interval: Insufficient time between pregnancies for iron repletion.
- Poor Nutritional Status: Inadequate dietary intake of iron, folate, and vitamin B12, protein deficiencies.
- Multiple Gestation: Pregnancies with twins or more foetuses place a greater demand on maternal iron stores.
- Chronic Diseases: Conditions like inflammatory bowel disease, renal disease, and malabsorption syndromes can impair iron absorption or lead to chronic blood loss.
- Infections: Chronic infections can contribute to anaemia of chronic disease, hookworm, malaria, poor sanitation can also contribute to development of anaemia.
- Vegetarian/Vegan Diet: These diets may lack sufficient bioavailable iron and can also be deficit in Vitamin B12 as well.
- Lack of Antenatal Iron Supplementation: Inadequate adherence to or access to iron supplementation during pregnancy.
- Public Health Program Limitations: Challenges in program implementation, monitoring, and community engagement hinder the effectiveness of existing anemia control initiatives.

Consequences and Impact of Postpartum Anaemia

- The consequences of postpartum anaemia extend beyond simple fatigue and can have lasting negative impacts on the mother, newborn, and family.

Maternal Physical Health:

- Fatigue and Weakness: The most common symptom, severely impacting a mother's energy levels and ability to perform daily tasks.
- Reduced Physical Activity and Endurance: Impairs ambulation, self-care, and ability to engage in activities.
- Compromised Immune Function: Increased susceptibility to infections.
- Cardiovascular Strain: In severe cases, can lead to cardiac complications like tachycardia, dyspnoea, and even heart failure. Impaired Lactation: May reduce milk supply or quality, affecting breastfeeding success. Hair Loss and Brittle Nails: Common dermatological manifestations.

Maternal Mental Health:

- Increased Risk of Postpartum Depression (PPD): Anaemia -related fatigue and poor physical health are significant contributors to the development of PPD.
- Anxiety and Irritability: Emotional instability and difficulty coping with stress. Cognitive Impairment: Difficulty concentrating, memory problems, and reduced cognitive function.

Newborn and Infant Health:

- Impaired Mother-Infant Bonding: Maternal fatigue and depression can hinder the establishment of a strong bond.
- Suboptimal Breastfeeding: Reduced milk supply or maternal exhaustion can lead to early cessation of breastfeeding, impacting infant nutrition and immunity.
- Increased Risk of Infant Iron Deficiency: Infants born to anaemic mothers may have lower iron stores, increasing their risk of iron deficiency anaemia in infancy.
- Developmental Delays: Indirectly through impaired maternal care and reduced cognitive stimulation.
- IQ of the baby depends on mother's hemoglobin.

Family and Societal Impact:

- Economic Burden: Loss of productivity, healthcare costs, and potential need for additional family support.
- Strain on Family Relationships: Maternal illness can create stress and burden on partners and other family members.
- Cycle of Poverty and Poor Health: Anaemia can initiate a cycle of poor health and reduced economic opportunity.

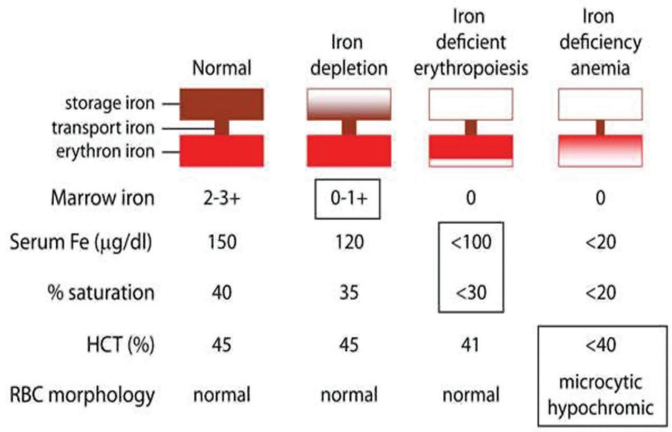
Diagnosis

Definition (FOGSI & WHO Standards)[2, 3]

- Mild anaemia: Haemoglobin 10–10.9 g/dL
- Moderate anaemia: Haemoglobin 7–9.9 g/dL
- Severe anaemia: Haemoglobin <7 g/dL

Timing of Screening

- Ideally within 48 hours post-delivery, and again at 6 weeks postpartum. Screening should include:
  - Complete Blood Count (CBC)
  - Serum ferritin and Iron studies (to assess iron stores)
  - Peripheral smear (for morphological evaluation)
  - Stool examination (for helminthic infestation in endemic areas)



Methods of Hb Estimation

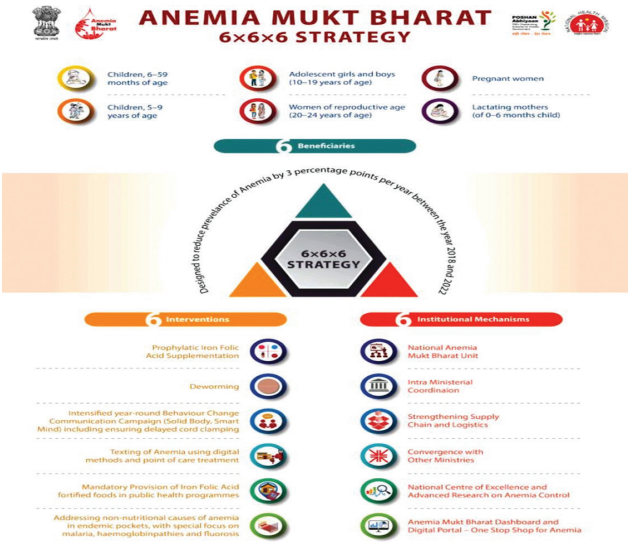
1. Automated Hematology Analyzers
   - Highly accurate hemoglobin levels along with complete blood counts (CBCs).
2. HemoCue® System
   - A point-of-care device used globally in primary healthcare and outreach settings.
   - rapid and accurate hemoglobin readings from a small capillary or venous blood sample.
3. Non-Invasive Hemoglobin Monitoring
   - Uses optical technologies for measurement of Hb
   - Useful for continuous monitoring in surgical, critical care, and pediatric settings.
   - It might have limitations in accuracy compared to invasive methods.

Management

GOI Guidelines under Anaemia Mukt Bharat (AMB)[4]

The AMB strategy includes six key interventions, referred to as the 6x6x6 strategy:

- 6 target beneficiaries, including lactating mothers
- 6 interventions
- 6 institutional mechanisms



Interventions for Postpartum Anaemia

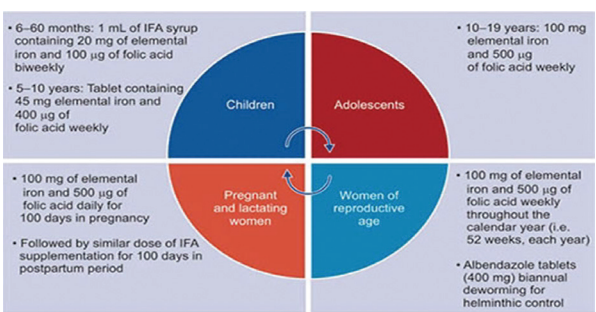
Iron and Folic Acid (IFA) Supplementation

- 100 mg elemental iron + 500 mcg folic acid tablets daily for 180 days antepartum and 180 days postpartum (mandatory as per AMB).
- Oral IFA is preferred in mild cases.
- For moderate anaemia, intravenous iron is used:
  - Ferric Carboxymaltose (FCM) is the preferred IV formulation as per FOGSI and AMB.
  - Dosage: Single 1000 mg dose administered under supervision.
  - Ferrous isomaltoside is a third-generation intravenous (IV) iron preparation, used to rapidly replenish iron stores. Dose Up to 20 mg/kg body weight in one sitting and is associated with negligible hypersensitivity risk.

Total iron dose (mg) = [Body weight (kg) × (Target Hb – Actual Hb in g/dL) × 2.4] + Iron stores (~500 mg)

- In severe anemia, patient require immediate blood transfusion followed by oral/ parenteral iron supplementation

Calcium Supplementation: Provide 1g of calcium daily to pregnant and lactating women to prevent anemia and support fetal development.



Deworming

- Albendazole 400 mg given as a single dose postpartum for deworming especially in high-burden regions.

Dietary Counselling

- Promote consumption of iron-rich foods: green leafy vegetables, jaggery, millets, legumes, fortified cereals.
- Promote enhancers of iron absorption (vitamin C-rich foods) and limit inhibitors (tea, coffee).
- Implement Food Fortification
- Staple Food Fortification: Fortify commonly consumed foods like wheat flour, rice, and salt with iron, folic acid, and vitamin B12.
- Biofortified Crops: Promote the cultivation and consumption of iron rich crops such as millets and pulses.

Management of Blood Loss

- Ensure active management of third stage of labour (AMTSL)
- Identify and treat postpartum haemorrhage early
- Screening and Referral
- For severe anaemia (Hb < 7 g/dL), refer to higher centres for:
  - Parenteral iron therapy
  - Blood transfusion if symptomatic or hemodynamically unstable

National Programs and AMB Monitoring Framework

Monitoring and Evaluation under AMB

- Use of ANMOL App and Mother-Child Protection Card to track Hb status and IFA compliance
- Monthly reporting from health workers via HMIS (Health Management Information System)
- Training ASHAs, ANMs, and Anganwadi workers in counselling and supplementation

Role of Frontline Workers

- ASHA workers should distribute IFA and counsel on adherence
- ANMs can conduct screening and manage referrals
- Anganwadi workers can provide nutrition education and track compliance

Strengthen Public Health Infrastructure

- Regular Screening: Conduct routine hemoglobin testing at primary health centers, schools, and community centers.
- Deworming Programs: Implement biannual deworming for children and adolescents to reduce parasitic infections contributing to anemia.

Recommendations and Best Practices

Facility-Level Interventions

- Implement routine Hb testing before discharge
- Administer IV iron in-hospital where appropriate
- Educate mothers before discharge on diet and supplementation

Community-Level Interventions

- Integrate postpartum anaemia management with immunization visits
- Use community-based events (Village Health Nutrition Days) to track and treat anaemia
- Strengthen convergence between health and ICDS departments
- Awareness Campaigns: Launch targeted campaigns to educate communities about anemia prevention, dietary practices, and the importance of supplementation.
- Behavior Change Communication: Utilize local media, community leaders, and health workers to promote behavior change regarding nutrition and health-seeking practices.

Programmatic reforms

- **Data-Driven Decision Making**

  Using data from national surveys such as the National Family Health Survey (NFHS)[5] to identify high-burden regions. Also, evidence-based interventions should be made to address the specific needs of vulnerable populations.

- **Inter-sectoral Collaboration**

  While two-thirds of the world has adopted integrated,

multi-sectoral approaches to address anemia, there is an urgent need for us to utilise all the sectors—health, education, agriculture.

Conclusion

Postpartum anaemia remains a pervasive but preventable health issue. Addressing it through structured strategies like the Government of India's Anaemia Mukt Bharat[4] program can significantly improve maternal health, reduce maternal mortality, and enhance child development outcomes. Ensuring compliance with postpartum iron supplementation, nutritional counselling, and timely diagnosis and treatment should be made an integral part of postnatal care services.

India's commitment through the AMB initiative is a model approach that combines prevention, treatment, education, and accountability. However, success requires not just policy but effective implementation at all levels — from tertiary hospitals to village health workers.

References

1. Government of India. Anaemia Mukt Bharat Guidelines. Ministry of Health & Family Welfare. https://anemiamuktbharat.info
2. Federation of Obstetric and Gynaecological Societies of India (FOGSI). Guidelines for the Management of Postpartum Anaemia.
3. WHO. Iron Deficiency Anaemia: Assessment, Prevention and Control – A Guide for Programme Managers. 2001.
4. National Health Mission – Anaemia Mukt Bharat Strategy Document. https://nhm.gov.in
5. Nationl Family Health Survey (NFHS-5). Fact Sheets: Key indicators 2019-21. Ministry of health and family welfare, government of india. https://dhsprogram.com/pubs/pdf/fr363/fr363.pdf assessed on 05 july 2025

Beyond the Baby Blues: Early Identification and Management of Postpartum Depression and Anxiety

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Abstract

Postpartum depression (PPD) and postpartum anxiety (PPA) are underdiagnosed yet highly prevalent mental health conditions affecting new mothers worldwide. Despite increasing awareness, the stigma surrounding maternal mental illness, limited resources, and lack of routine screening contribute to under-recognition, especially in low- and middle-income countries like India. This article aims to equip obstetricians and gynecologists with evidence-based tools, screening methods, and referral guidelines for the early identification and management of PPD and PPA. Incorporating national and international guidelines, validated tools available in Indian languages, and flowcharts for clinical decision-making, this review provides a practical roadmap for integrating maternal mental health care into obstetric practice.

Keywords

Postpartum depression, postpartum anxiety, maternal mental health, obstetric screening, India, EPDS, PHQ-9, GAD-7, obstetric referral, breastfeeding and SSRIs

Introduction

Motherhood is often idealized as a period of joy and fulfillment, yet for many women, it is accompanied by emotional turmoil. Postpartum depression affects approximately 10–15% of women globally, with higher prevalence rates documented in developing countries.[1] In India, studies have reported prevalence rates as high as 22%.[2] Postpartum anxiety disorders, which may coexist with depression or occur independently, are observed in up to 20% of new mothers.[3] These disorders, if left untreated, can adversely impact maternal health, hinder infant bonding, and negatively affect child development and family dynamics. Obstetricians, being at the forefront of perinatal care, are well-positioned to detect these conditions early, but the absence of structured screening processes and limited training often hinders timely recognition and management. This article presents a detailed guide for obstetricians to aid in the identification, screening, and referral of women suffering from postpartum depression and anxiety.

Epidemiology and Risk Factors

The global burden of postpartum depression is significant,with estimates from the World Health Organization suggesting that approximately 13% of women are affected worldwide.[4] In low- and middle-income countries (LMICs), this prevalence may rise to as much as 20–25%, reflecting socioeconomic stressors and disparities in access to healthcare. Indian studies, including meta-analyses, have reported a prevalence rangeof 11% to 22%, underscoring the need for region-specific attention.[2,5] Numerous risk factors have been identified that predispose women to postpartum mood and anxiety disorders. These include a prior history of depression or anxiety, socio-economic disadvantage, lack of social and familial support, exposure to intimate partner violence, complications during pregnancy or delivery, and unplanned or unwanted pregnancies. Understanding these risk factors (Table 1) can help obstetricians in early risk stratification and tailored support.

Table1: Risk Factors for Development of Postpartum Depression and Anxiety[6,7]

Category	Risk Factors
Psychiatric History	Previous depression or anxiety, postpartum depression in prior pregnancy
SocialFactors	Lack of emotional/family support, single motherhood, marital conflict
Socioeconomic Factors	Low income, unemployment, poor housing, low educational status
ObstetricFactors	Unplanned/unwanted pregnancy, complications during pregnancy or delivery
Infant- Related	Preterm birth, infant health problems, breastfeeding difficulties
Personality Factors	Low self-esteem, high neuroticism, perfectionism
Cultural/ Environmental	Gender-based preference (pressure to deliver a male child), stigma, family stress
Exposureto Violence	Intimate partner violence, (physical/ sexual/emotional)
SubstanceUse	Maternal substance use, partner alcohol dependence

Clinical Presentation

The onset of postpartum depression and anxiety typically occurs within the first few weeks to months following childbirth, although delayed presentations are not uncommon. The clinical symptomatology of these conditions often overlaps but can also be distinct (Table 2). Women with postpartum depression predominantly present with persistent sadness, irritability,

fatigue, disturbances in sleep and appetite, feelings of worthlessness orguilt, and diminished interest in bonding with the baby. In contrast, postpartum anxiety may manifest as excessive worry, hypervigilance, somatic complaints such as palpitations or gastrointestinal disturbances, and obsessive fears regarding the infant's safety or the mother's competence. In severe cases, suicidal ideation or thoughts of infanticide may occur, necessitating urgent psychiatric intervention. Given the diversityand subtletyof symptoms, a high index of suspicion is essential during routine postnatal evaluations.

Table 2: Common Clinical Features of Postpartum Depression and Postpartum Anxiety[8]

Symptom Category	Postpartum Depression	Postpartum Anxiety
Mood	Sadness, hopelessness	Excessive worry, fear
Sleep	Insomnia or hypersomnia	Sleep disturbance due to rumination
Appetite	Poor appetite or overeating	Nausea, gastrointestinal discomfort
Cognition	Poor concentration, indecisiveness	Racing thoughts, concentrating
Bonding with Infant	Detachment or guilt	Obsessive concern safety
Physical Symptoms	Aches, lethargy	Palpitations, dizziness, breathlessness
Severe Signs	Suicidal ideation, infanticidal thoughts	Panic attacks, compulsive rituals

Screening Tools for Obstetricians

Systematic screening is a cornerstone of early identification and can be feasibly implemented within obstetric settings using brief and validated tools. The Edinburgh Postnatal Depression Scale (EPDS), a widely used 10-item questionnaire, has been validated in multiple Indian languages including Hindi, Tamil, Bengali, Kannada, and Marathi (2). A score greater than 10 suggests mild symptoms, while scores above 13 are indicative of clinically significant depression. The Patient Health Questionnaire-9 (PHQ-9), available in Hindi, Assamese, and Malayalam, and the Generalized Anxiety Disorder-7 (GAD-7) scale, available in Hindi, Urdu, and Marathi, are also useful for screening depressive and anxiety symptoms, respectively. These tools are self-administered, easily interpretable, and can be integrated into postnatal visits with minimal disruption. Many of these instruments (Table 3) are freely accessible online and translated into regional languages, increasing their utility in diverse clinical settings.

Table 3: Commonly Used Screening Tools for Postpartum Mental Health[2,5]

Tool Name	Target Condition	Number of Items	Language Availability (India)	Cut-off Score	Remarks
EPDS	Depression	10	Hindi, Tamil, Bengali, Kannada, Marathi	≥13 (moderate)	Most widely used in postnatal clinics
PHQ-9	Depression	9	Hindi, Assamese, Malayalam	≥10 (moderate)	Useful for both prenatal and postnataluse
GAD-7	Anxiety	7	Hindi, Urdu, Marathi	≥10 (moderate)	Effective for screening generalized anxiety

Guidelines for Screening and Management: International and National Recommendations

Various professional bodies across the world recommend routine screening and management of postpartum depression and anxiety, emphasizing the need for early detection, culturally appropriate tools, and integration with obstetric care. Table 4 below summarizes key recommendations from leading psychiatric and obstetric-gynecological societies.

Table 4: Recommendations by Major Professional Bodies for Screening and Management of Postpartum Depression and Anxiety[9–15]

Organization	Country / Region	Screening Recommendati on	Tool Recommended	Timingof Screening	Management Guidance
American College of Obstetricians and Gynecologists (ACOG)	USA	Universal screening recommended	EPDS,PHQ-9	Once during pregnancy and postpartu m (preferably at 6 weeks)	Stepped care model;referral tomentalhealth professionalsif positive; supportive counseling by OB
UnitedStates Preventive Services Task Force (USPSTF)	USA	Screening in perinatalwomen withsystemsfor diagnosis, treatment, and follow-up	EPDS,PHQ-9	During pregnancy and postpartu m	Evidence-based psychotherapy and pharmacologic treatment; priority on early intervention

National Institute for Health and Care Excellence (NICE)	UK	Enquire about mental health in all postnatal women; formal screening in high-risk	EPDS,GAD-7, Whooley questions	Initial postnatal visitsand 6–8weeks postpartu m	CBT or IPT for mild to moderate; SSRIs (sertraline preferred) for moderate to severe cases
Royal Australian and New Zealand College of Obstetricians and Gynaecologist s (RANZCOG)	Australia/ N Z	Routine screening recommended	EPDS	At least once during pregnancy and postpartu m	Multidisciplinar y team involvement; includespartner and family support
Federationof Obstetricand Gynaecologic al Societies of India (FOGSI)	India	Advocates screening and early identificationas standard care	EPDS,PHQ-9 (Indian language versions)	Antenatal and 6-week postpartu m visit	Counseling, referral to psychiatry, lactation-compatible pharmacotherapy
Indian Psychiatric Society(IPS)	India	Emphasizesneed forintegrationof mental health in obstetric care	EPDS,PHQ- 9, clinical interview	Antenatal and postnatal period	Encourages liaison psychiatry, family psychoeducatio n,safeuseof SSRIs during breastfeeding
WorldHealth Organization (WHO)	Global	Strongly recommends assessment for maternalmental health in perinatalperiod	Not tool- specific; recommends validated instruments	Througho ut pregnancy and postpartu m period	Psychoeducatio n,community-based interventions, and task- sharing with primary care for mild cases

Management Approaches

Managementofpostpartumdepressionandanxietyrequires a multi- pronged strategy. Psychoeducation is fundamental and involves normalizing the emotional challenges of early motherhood, addressing stigma, and engaging family support. Psychotherapeutic modalities such as Cognitive Behavioral Therapy (CBT), Interpersonal Therapy (IPT), and interventions to enhance mother-infant bonding have shown considerable efficacy.[8] Pharmacological treatments, particularly selective serotonin reuptake inhibitors (SSRIs) like sertraline and fluoxetine, are effective first-line options. These medications are generally considered safe during breastfeeding, with minimal transfer to the infant.

Breastfeeding, Psychotropics, and Maternal Counseling[8]

Many mothers express concern about taking psychiatric medications while breastfeeding, fearing harm to their infant or societal judgment. It is essential to provide evidence-based reassurance (Box 2). Most first-line antidepressants, particularly sertraline and paroxetine, are compatible with breastfeeding due to minimal drug transfer into breast milk and low infant serum levels. The concept of Relative Infant Dose (RID)—the percentage of the maternal dose received by the infant through breast milk—is useful in guiding decisions; an RID of less than 10% is generally considered acceptable.

Box 2 : Key Counseling Points for Obstetricians for lactation and psychotropics

- **Normalize treatment:** Emphasize that postpartum depression and anxiety are common and treatable conditions, and untreated illness poses greater risk to mother-infant bonding and child development than medication exposure.
- **Discuss benefits vs risks:** Frame medication use as a means to improve maternal functioning, thereby supporting effective breastfeeding and caregiving.
- **Share data:** Reassure that SSRIs such as sertraline are well-studied in lactating mothers and considered safe. Provide printed or digital resources from LactMed or WHO for credibility.
- **Encourage monitoring:** Suggest routine pediatric follow-up to monitor infant weight, feeding, and sleep, especially during initiation or dose changes.
- **Involve family:** Address myths or resistance from family members and highlight the importance of maternal recovery for infant well-being.
- **Collaborate with psychiatry:** For complex cases, shared decision-making with a psychiatrist and pediatrician improves confidence in management.

Clinical Identification and Referral Algorithm

An organized, stepwise approach enhances the detection and management of postpartum mental health issues. During routine postnatal visits— ideally at 6 weeks and

3 months postpartum—obstetricians should initiate a non-judgmental enquiry into emotional well-being. Following this, administration of screening tools such as the EPDS, PHQ-9, or GAD-7 can be performed. If scores fall below clinical thresholds, patients should receive education and routine support. In cases where mild to moderate symptoms are evident, obstetricians may offer preliminary counseling and schedule close follow-up within two weeks. Women exhibiting severe symptoms or expressing suicidal ideation require immediate referral to a mental health professional (Box1) . Documentation of findings, involvement of supportive family members, and coordination with psychiatric services are integral to comprehensive care.[2,4]

Flowchart: Stepwise Identification and Referral by Obstetrician (2,4)

1. Postnatal Visit (6 weeks / 3 months)
   → Emotional well-being enquiry
2. Administer EPDS / PHQ-9 / GAD-7
3. Interpret Scores:
   - Normal: Provide reassurance and routine care
   - Mild-Moderate: Offer counseling, schedule follow-up in 2 weeks
   - Severe (EPDS > 20, suicidal thoughts): Immediate psychiatric referral
4. Document findings and involve family
5. Coordinate care with psychiatrist / DMHP

Box 1: Red-Flag Signs Requiring Immediate Psychiatric Referral [1,9]

- Active suicidal ideation or expression of intent to self-harm
- Thoughts of harming the infant (infanticidal ideas or intrusive violent imagery)
- Psychotic symptoms (e.g., hallucinations, delusions, marked disorganization)
- Severe functional impairment: inability to perform basic self-care or infant care
- Rapidly worsening mood or anxiety despite initial supportive measures
- Extreme agitation, panic, or catatonia
- History of bipolar disorder with emerging manic or mixed features post-delivery
- Refusal to feed or interact with the baby accompanied by intense guilt or detachment
- Substance-use relapse in the postpartum period
- Any episode of loss of consciousness, seizures, or severe confusion with mood symptoms

Action for Obstetrician:

- Ensure patient is never left alone with infant until assessment is complete.
- Arrange same-day evaluation by psychiatry (in person or telepsychiatry).
- Document findings, inform partner/family, and coordinate safe transport if required.

With appropriate guidance, most women can safely continue breastfeeding while receiving necessary psychiatric treatment (Table 5), thereby protecting both maternal and infant health.

Table 5: Common Classes of Antidepressants and Their Safety in Lactation[16]

Drug Class	Common Drugs	RelativeInfant Dose (RID%)	Safety in Lactation	Comments
SSRIs	Sertraline, Fluoxetine	<2% (Sertraline), ~7% (Fluoxetine)	Safe	Sertraline preferred; monitor infant for irritability
SNRIs	Venlafaxine	~6–9%	Probably safe	Use with caution; infant sedationpossible
TCAs	Amitriptyline	<1%	Safe	Sedationininfantrare
Atypicals	Mirtazapine	<1%	Limiteddata	Useonlyifnoalternatives

Cultural Considerations and Challenges in India

In the Indian context, cultural factors significantly influence the recognition and management of postpartum mental illness. Societal stigma remains a major barrier to disclosure and treatment-seeking. The structure of joint families can be a double-edged sword, offering both support and additional stress due to traditional expectations. Indian women often somatize emotional distress, presenting with nonspecific complaints such as fatigue or bodily pain, which may obscure the underlying psychological etiology. Furthermore, the scarcity of trained mental health professionals, especially in rural and semi-urban areas, complicates timely access to care. These factors necessitate culturally sensitive screening practices and strong referral networks.

Recommendations for Obstetricians

Obstetricians may incorporate routine mental health screening into standard postnatal care protocols, preferably during follow-up visits at 6 weeks and 3 months postpartum. Utilization of validated tools in regional languages enhances accessibility and acceptability. Creating an empathetic, non-stigmatizing clinical environment encourages disclosure. The active involvement of partners and family members can reinforce support systems and improve adherence to care. Additionally, training nursing and auxiliary staff in basic mental health screening can help extend the reach of these services within busy clinical settings. Establishing formal referral pathways with mental health professionals further ensures continuity of care.

Conclusion

Postpartum depression and anxiety represent significant

yet treatable challenges within maternal health. Obstetricians and gynecologists have a pivotal role in early detection, patient education, and appropriate referral. With the incorporation of evidence-based screening tools, structured clinical pathways, and collaborative care models, maternal mental health can be effectively addressed within the scope of routine obstetric practice. Proactive engagement by obstetricians will not only improve maternal outcomes but also foster healthier developmental environments for infants and families.

References

1. O'Hara MW, McCabe JE. Postpartum depression: current status and future directions. Annu Rev Clin Psychol. 2013;9:379-407.
2. Upadhyay RP, Chowdhury R, Salehi A, Sarkar K, Singh SK, Sinha B, Pawar A, Rajalakshmi AK. Postpartum depression in India: a systematic review and meta-analysis. Bull World Health Organ. 2017;95(10):706-717C.
3. Field T. Postpartum anxiety prevalence, predictors and effects on development: a meta- analysis. Infant Behav Dev. 2018;51:24-32.
4. WHO. Maternal mental health. World Health Organization; 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-health-of-women-during- pregnancy-and-after-childbirth
5. Dubey C, Gupta N, Bhasin S, Sharma N, Javed A. Prevalence and risk factors for postpartum depression in women attending a tertiary hospital in Delhi, India. Int J Soc Psychiatry. 2015;61(4):333–336.
6. Stewart DE, Vigod SN. Postpartum Depression: Pathophysiology, Treatment, and Emerging Therapeutics. Annu Rev Med. 2016;67:231–245.
7. Shorey S, Chee CYI, Ng ED, Chan YH, Tam WWS, Chong YS. Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. J Psychiatr Res. 2018;104:235–248.
8. Kendall-Tackett K, Hale TW. The use of antidepressants in breastfeeding women: a review of recent literature. J Hum Lact. 2010;26(2):187-194.
9. American College of Obstetricians and Gynecologists. Screening for perinatal depression. Committee Opinion No. 757. Obstet Gynecol. 2018;132(5):e208–12.
10. Siu AL, et al. Screening for Depression in Adults: US Preventive Services Task Force Recommendation Statement. JAMA. 2016;315(4):380–387.
11. NICE. Antenatal and postnatal mental health: clinical management and service guidance. NICE guideline [CG192]; 2014.
12. RANZCOG. Mental health care in the perinatal period. College Statement C-Obs 48. 2018.
13. Federation of Obstetric and Gynaecological Societies of India. Good Clinical Practice Recommendations on Maternal Mental Health. FOGSI Focus. 2021.
14. Grover S, Avasthi A, Sahoo S, et al. IPS Guidelines on Perinatal Mental Health. Indian J Psychiatry. 2022;64(Suppl 2):S283–S302.
15. World Health Organization. Mental health of women during pregnancy and after childbirth. Geneva: WHO; 2022.
16. Sachs HC; Committee on Drugs. The transfer of drugs and therapeutics into human breast milk: an update on selected topics. Pediatrics. 2013;132(3):e796–e809. doi:10.1542/peds.2013-1985.

Pelvic Floor Rehabilitation in 4th Trimester :New Advances and Patient Education

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Introduction

The postpartum period, known as the "fourth trimester," is a critical phase in a woman's recovery after childbirth, typically spanning the first 12 weeks. Despite its importance, postpartum care is often fragmented, leaving many women vulnerable to unaddressed health concerns. The important Postpartum challenges include pelvic pain, pelvic floor dysfunction, diastasis rectus abdominis, difficulty returning to physical activity, and emotional struggles like postpartum depression. Given the multidimensional nature of recovery, a comprehensive biopsychosocial approach—including physical therapy is essential. Physical therapists specializing in perinatal care help manage postpartum conditions, improving physical, emotional, and social well-being

Effective postpartum recovery with postpartum rehabilitation, enhances musculoskeletal health, emotional well-being, cardiovascular health, weight management, and sleep quality, and prevents long-term complications, emphasizing the need for structured maternal rehabilitation programs.[1] Common rehabilitation techniques include pelvic floor therapy, diastasis recti exercises, postural restoration, high-intensity training, and nutritional counseling

The Rehabilitation techniques may vary depending on delivery type; vaginal birth recovery often focuses on pelvic floor exercises, while Caesarean recovery emphasizes gentle abdominal exercises and scar tissue management. Medical conditions, lifestyle, nutritional status, and social support influence rehabilitation choices.

This topic elaborates the essential elements of postpartum care, emphasizing the critical role of physical therapy in addressing common postpartum conditions, and implementing evidence-based interventions, to optimize health outcomes.

Anatomy and Function of the Pelvic Floor

The pelvic floor is a complex structure composed of muscles, ligaments, and connective tissues that support the bladder, uterus, and rectum. It plays a crucial role in maintaining continence, supporting pelvic organs, and facilitating childbirth. The primary muscles involved include the levator ani (puborectalis, pubococcygeus, and iliococcygeus) and coccygeus, which form a supportive sling across the pelvic outlet.

Changes During Pregnancy and Childbirth

During pregnancy, hormonal shifts and mechanical stress lead to significant alterations in pelvic floor anatomy. The hiatal area and bladder neck mobility increase as pregnancy progresses, contributing to a higher risk of stress urinary incontinence (SUI). Vaginal delivery, particularly with forceps-assisted births, can cause levator ani avulsion, pudendal nerve damage, and perineal tears, leading to pelvic organ prolapse and incontinence.

Impact of Delivery Methods on Pelvic Floor Health

Studies indicate that vaginal delivery poses a higher risk for pelvic floor dysfunction (PFD) compared to cesarean sections, though pregnancy itself predisposes women to pelvic floor changes. High fetal weight and connective tissue weakness are significant risk factors for postpartum pelvic floor disorders.[2,3]

Common Pelvic Floor Issues in the 4th Trimester

The first three months after childbirth are a window for healing and recovery, Physiologically, the body works to reverse many pregnancy adaptations—reducing blood volume, restoring hormonal balance, and healing tissues such as the perineum and uterus. Musculoskeletal changes, including joint laxity and muscular weakness, particularly of the pelvic and core muscles, often persist during this period. Common Pelvic Floor issues are described in Table 1

Condition	Prevalence & Impact	Management
Diastasis Rectus Abdominis (DRA)	• Separation of rectus abdominis muscles along the linea alba, with a widening of more than 2 cm • Affecting 70% of women in late pregnancy, 60% at six weeks postpartum, and 30% at one year • Weakens core stability, postural issues, breathing difficulties, pelvic instability, and pote • ntial lumbar/pelvic injuries.	Conservative interventions Abdominal and deep system motor control exercises, diaphragmatic breathing, and transversus abdominis activation. Electrical muscle stimulation enhance muscle engagement and support recovery.

Condition	Prevalence & Impact	Management
Pelvic Pain and Pelvic Girdle Dysfunction (PGP)	• Affects up to 45% of postpartum women, causes mobility impairment and decreased quality of life. • Results from joint laxity, muscular weakness, or previous obstetric injury.	Targeted exercises for pelvic stabilizers, Manual therapy for joint mobility improvement, Patient education on activity modification.
Pelvic Floor Dysfunction (PFD)	• Affects 50% of post-partum women[4] • Include pelvic pain, pressure, dyspareu-nia,, urinary inconti-nence (UI), overactive bladder, bowel incontinence, incom-plete emptying of feces, constipation, myofascial pelvic pain and pelvic organ prolapse. • Caused by pelvic floor muscle weak-ness or hypertonicity.	Pelvic floor physical therapy aimed at strengthening or relaxing muscles as needed, demonstrating high efficacy in restoring function.

The Significance of Physical Activity During Pregnancy and postpartum

The Physical activity during pregnancy is essential for maternal and fetal health, helping the body adapt to weight gain, posture shifts, and joint stress. It reduces musculoskeletal discomforts like back pain, which affects over 60% of pregnant women. Health guidelines recommend 150 minutes of moderate exercise weekly, including safe activities like walking and swimming, while avoiding high-risk exercises.[4-6]

The Physical therapy in postpartum recovery plays a crucial role by offering tailored exercises, manual therapy, and education to manage postpartum conditions. A personalized approach improves well-being, prevents complications, and supports long-term health for new mothers.[7]

Categories of Postpartum Rehabilitation Interventions

Postpartum rehabilitation can be broadly categorized into four categories(Table 2). Each category encompasses a scale of interventions, from traditional exercises to innovative technological applications, often combined to achieve synergistic effects

S.No	Approach	Techniques/Instruments
1)	Exercise-Based Techniques	PFMT (Pelvic Floor Muscle Training), Biofeedback, Trunk Stabilization and Core Muscle Programs, Postural Restoration, Musculoskeletal Rehabilitation
2)	Technology Integration	Electrical Stimulation, Biofeedback Devices, Acupuncture, Ultrasound and Image Processing, Vibrating Vaginal Balls, Taping
3)	Medical Interventions	Pharmacological Approaches, Surgical Procedures
4)	Multimodal Approaches	Integration of Exercise and Technology, Psychological and Nutritional Support, Multidisciplinary Teams Management

1) Exercise-Based Techniques

A. Pelvic Floor Muscle Training (PFMT)-It is commonly known as Kegel exercises.It is an essential component of postpartum rehabilitation, aimed at strengthening pelvic floor muscles weakened during childbirth. These muscles support pelvic organs and contribute to continence and sexual function. PFMT serves as the first-line conservative treatment for stress urinary incontinence and other pelvic floor dysfunctions. Recent studies underscore the efficacy of PFMT, especially when initiated early postpartum.

Typically, a PFMT program consists of repeated voluntary contractions of pelvic floor muscles, performed multiple times a week for at least eight weeks, with recommendations for continued maintenance exercises to sustain long-term benefits.[8]

The supervised pelvic floor exercises have demonstrated significant improvements in muscle strength, reduction in incontinence symptoms, and enhancement of quality of life. While PFMT has proven effective in preventing and treating urinary incontinence and improving pelvic muscle function, its impact on sexual dysfunction remains uncertain..

B. Biofeedback techniques-

It is an instrument-assisted intervention that allows patients to observe real-time pelvic floor muscle activity. Biofeedback can be used to strengthen weak pelvic floor muscles and to relax hypertonic pelvic floor muscles.

Although beneficial, studies present conflicting results regarding their additional benefits of biofeedback device

Research has explored the effects of PFMT during

pregnancy and postpartum periods, particularly concerning lower urinary tract symptoms and voiding function. Some studies have also examined its influence on postpartum sexual function at various recovery stages. However, the effectiveness of supervised PFMT in early postpartum for preventing or treating sexual dysfunction and lower urinary tract symptoms remains unclear. Further studies are needed to better establish the role of early postpartum PFMT in comprehensive postpartum care.[9]

C. Trunk Stabilization and Core Muscle Programs

Postpartum women often develop core muscular weakness resulting in abdominal separation (diastasis recti), lumbar pain, and poor posture. These women often experience lower back pain, pelvic floor dysfunction, and incontinence, significantly affecting their quality of life. Although DRA is recognized as a clinical issue, its management remains limited.

Trunk stabilization exercises aim to restore core integrity, improve posture, and alleviate musculoskeletal discomfort.[10]

Although Physiotherapeutic exercise training is recommended as a noninvasive first-line treatment, research yields mixed results regarding its effectiveness. While some studies suggest abdominal exercises during pregnancy and postpartum can prevent DRA, others question their impact. Despite ongoing controversy, rehabilitation training has shown promise in improving inter-rectus distance and restoring linea alba tension. Further high-quality randomized controlled trials are needed to validate optimal non-surgical treatment approaches for both functional recovery and cosmetic concerns.

D. Postural Restoration and Musculoskeletal Rehabilitation

Postural corrections, yoga, and physiotherapy modalities are employed to address back pain, pelvic girdle dysfunction, and general musculoskeletal health. Physiotherapists tailor programs to individual needs, incorporating strengthening, stretching, and proprioceptive exercises.

2. Technology Integration

The integration of advanced technologies into postpartum rehabilitation has revolutionized care delivery, enabling remote, precise, and engaging interventions.[7]

A. Electrical Stimulation

Electrical stimulation (ES) techniques, such as transvaginal electrical stimulation (TVES), have shown promise in enhancing pelvic floor muscle contractility.

B. Biofeedback devices

It facilitates real-time monitoring of muscle activity, enabling women to learn correct activation patterns and improve technique(4)

C. Acupuncture and Related Techniques

Auricular acupuncture has been explored as a modality to reduce postpartum pain, promote bowel function, and facilitate recovery.

D. Ultrasound and Image Processing

Ultrasound-based assessments, enhanced with artificial intelligence and image processing algorithms, assist in diagnosing pelvic floor dysfunction, measuring muscle thickness, and providing biofeedback during exercises.

E. Vibrating Vaginal Balls and Taping

Innovative devices such as vibrating vaginal balls and Kinesio taping offer additional modalities for pelvic floor activation and pain management, respectively.

3. Medical Interventions

While less prevalent, medical interventions complement conservative therapies, especially in cases of severe dysfunction or pain.

A. Pharmacological Approaches

Intrathecal analgesia and continuous wound infiltration with local anesthetics such as ropivacaine post-C-section have been shown to prolong analgesia duration, reduce opioid consumption, and facilitate early mobilization.

B. Surgical and Other Medical Procedures

For women with significant pelvic organ prolapse or persistent diastasis recti unresponsive to conservative management, surgical repair may be necessary. Emerging minimally invasive techniques and regenerative therapies are under investigation.

4. Multimodal Approaches

Combining interventions from various domains offers a comprehensive method for postpartum recovery.

A. Integration of Exercise and Technology

Multimodal programs incorporating pelvic floor exercises, electrical stimulation, and biofeedback achieve superior outcomes compared to single-modality interventions.

B. Incorporating Psychological and Nutritional Support

Addressing emotional well-being and nutritional health alongside physical rehabilitation enhances overall outcomes. Psychological support relieves

postpartum depression

C. Multidisciplinary Teams

Effective multimodal care involves collaboration among obstetricians, physiotherapists, nurses, psychologists, and nutritionists.

New Advances in Pelvic Floor Rehabilitation

I. Emerging Techniques in Physical Therapy: Traditional postpartum pelvic floor rehabilitation has evolved beyond Kegel exercises to include progressive overload training, manual therapy, and functional movement integration. A recent study highlights the effectiveness of telerehabilitation, allowing postpartum women to access therapy remotely, improving adherence and outcomes.

II. Biofeedback and Neuromuscular Training: Biofeedback devices provide real-time feedback on muscle engagement, helping women regain control over weakened pelvic muscles. Research suggests that combining electromyography biofeedback with neuromuscular electrical stimulation significantly improves pelvic organ prolapse symptoms and muscle strength.[11]

III. Laser Therapy and Radiofrequency Treatments: Non-invasive laser and radiofrequency therapies stimulate collagen production, enhancing tissue elasticity and function. Studies show that temperature-controlled radiofrequency improves vaginal laxity, sexual function, and pelvic muscle tone, making it a promising option for postpartum recovery.[12]

IV. Use of Electrical Stimulation: Electrical stimulation aids in activating weakened pelvic floor muscles, reducing symptoms of urinary incontinence and pelvic organ prolapse. Research indicates that higher-intensity electrical stimulation, combined with pelvic floor muscle training, enhances muscle strength and reduces postpartum dysfunction.[13]

V. Role of Nutrition and Supplements: A balanced diet rich in collagen-supporting nutrients like vitamin C, magnesium, and omega-3 fatty acids plays a crucial role in postpartum recovery. Postnatal vitamins, including iron and vitamin D, help replenish depleted nutrient stores, supporting tissue repair and overall pelvic health.

Postpartum Rehabilitation: Patient Education and Awareness

Timely intervention during early postpartum period , including physical therapy and psychological support, mitigates long-term health risks. Educating new mothers about self-assessment techniques helps them identify symptoms like pelvic pain, urinary incontinence, and postpartum depression, fostering proactive healthcare-seeking behavior. Lifestyle changes, such as pelvic floor exercises, proper nutrition, and hydration, enhance recovery. Addressing the postpartum mental health through counselling and peer support reduces anxiety and depression risks. Thus a holistic approach integrating these elements into rehabilitation programs, ensures both physical and emotional well-being. The healthcare providers should prioritize education and support to empower new mothers.[14-16]

Conclusion

The fourth trimester represents a critical window for establishing optimal health for women after childbirth. By advocating for expanded postpartum assessment pelvic rehabilitation techniques,implementing evidence-based interventions, and emphasizing patient-centered care in association with active role of physical therapists can significantly enhance recovery

It also helps to improve the quality of life for new mothers.

Engaging in regular, moderate physical activity during pregnancy and postpartum is safe and beneficial, provided contraindications are respected.The Healthcare systems, professional organizations, and practitioners must recognize and embrace this opportunity to transform postpartum care. Bridging the gap between guidelines and practice requires combined efforts in healthcare provider education, patient awareness, and accessible exercise programs.

Future research should focus on large-scale, high-quality trials, long-term follow-up, and the integration of emerging digital health tools.

Key Points:

1. Physical activity during pregnancy is safe and beneficial when tailored to individual risk profiles.
2. The postpartum period, or "fourth trimester," is a critical phase for recovery, focusing on addressing common conditions such as pelvic pain, pelvic floor dysfunction, diastasis rectus abdominis, and emotional challenges, with an emphasis on structured, multidisciplinary care.
3. Pelvic floor muscle training (PFMT) and targeted exercises are cornerstone interventions for restoring pelvic health, urinary continence, and sexual function postpartum.
4. Innovative modalities, including electrical stimulation, biofeedback devices, acupuncture, ultrasound imaging, and vibrating devices, are integrated into multimodal postpartum rehsabilitation to improve outcomes.
5. Expanding postpartum assessment and care beyond the traditional six-week check-up, embracing multidisciplinary, patient-centered strategies, can

significantly enhance long-term health, function, and quality of life for new mothers.

References

1. Shaik A, Khan S, Shaik A, et al. (August 05, 2024) Advancements in Postpartum Rehabilitation: A Systematic Review. Cureus 16(8): e66165. DOI10.7759/cureus.66165
2. Sun, C., Yang, H., Li, K. et al. Pelvic floor structural changes during the first singleton pregnancy and the risk factors of stress urinary incontinence. BMC Pregnancy Childbirth 25, 552 (2025).
3. Stroeder, R., Radosa, J., Clemens, L. et al. Urogynecology in obstetrics: impact of pregnancy and delivery on pelvic floor disorders, a prospective longitudinal observational pilot study. Arch Gynecol Obstet 304, 401–408 (2021).
4. Shaw E, Levitt C, Wong S, Kaczorowski J: Systematic review of the literature on ponstpartum care: effectiveness of postpartum support to improve maternal parenting, mental health, quality of life, and physical health. Birth. 2006, 33:210-20.

4a. Innovative modalities, including electrical stimulation, biofeedback devices, acupuncture, ultrasound imaging, and vibrating devices, are integrated into multimodal postpartum rehabilitation to improve outcomes

5. Okeahialam NA, Dworzynski K, Jacklin P, et al. Guideline Committee. Prevention and non-surgical management of pelvic floor dysfunction: summary of NICE guidance. BMJ. 2022; 376: n3049.
6. Evenson KR, Barakat R, Brown WJ, et al. Guidelines for Physical Activity During Pregnancy: Comparisons From Around the World. Am J Lifestyle Med. 2014; 8(2): "121.
7. ACOG Committee Opinion No. 650: Physical Activity and Exercise during Pregnancy and the Postpartum Period. Obstet Gynecol. 2015; 126(6): e13e142.
8. Woodley SJ, Lawrenson P, Boyle R, Cody JD, Mørkved S, Kernohan A, Hay-Smith EJC. Pelvic floor muscle training for preventing and treating urinary and faecal incontinence in antenatal and postnatal women. Cochrane Database Syst Rev. 2020 May 6;5(5)
9. Ting-Feng Wu, Li-Hua Huang, Yu-Fen Lai, Gin-Den Chen, Soo-Cheen Ng,Early postpartum biofeedback assisted pelvic floor muscle training in primiparous women with second degree perineal laceration: Effect on sexual function and lower urinary tract symptoms,Taiwanese Journal of Obstetrics and Gynecology,Volume 60, Issue 1,2021
10. Beibei Chen, Xiumin Zhao, Yan Hu, Rehabilitations for maternal diastasis recti abdominis: An update on therapeutic directions,Heliyon,Volume 9, Issue 10,2023, e20956,)
11. Wang X, Qiu J, Li D, et al. Pressure-Mediated Biofeedback With Pelvic Floor Muscle Training for Urinary Incontinence: A Randomized Clinical Trial. JAMA Netw Open. 2024;7(11):e2442925. doi:10.1001/jamanetworkopen.2024.42925
12. Berman, E. Dayan, S. Theodorou, L. Westfall, H. Ramirez, 090 Effects of Bipolar Radiofrequency Treatment on Subjective and Objective Endpoints in Post-Partum Pelvic Floor Disorders, The Journal of Sexual Medicine, Volume 16, Issue Supplement_3, June 2019,
13. Y.N. Zhou, Y.C. Teng, G.P. Gan. Study on the effect of electric current intensity stimulation combined with biofeedback pelvic floor muscle training on postpartum pelvic floor dysfunction. Clin. Exp. Obstet. Gynecol. 2020, 47(6), 932–939.
14. Lim, S.; Lang, S.; Savaglio, M.; Skouteris, H.; Moran, L.J. Intervention Strategies to Address Barriers and Facilitators to a Healthy Lifestyle Using the Behaviour Change Wheel: A Qualitative Analysis of the Perspectives of Postpartum Women. Nutrients 2024, 16, 1046.
15. Peralta, L.R., Cotton, W.G., Dudley, D.A. et al. Group-based physical activity interventions for postpartum women with children aged 0–5 years old: a systematic review of randomized controlled trials. BMC Women's Health 21, 435 (2021).
16. Shang, J., Dolikun, N., Tao, X. et al. The effectiveness of postpartum interventions aimed at improving women's mental health after medical complications of pregnancy: a systematic review and meta-analysis. BMC Pregnancy Childbirth 22, 809 (2022).

Transforming OB-GYN Care: Key Insights from the Latest Clinical Trials

Patterns of Antihypertensive Medication Use in the First 2 Years Post-Partum

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Lihme F, Basit S, Thilaganathan B, Boyd HA. Patterns of Antihypertensive Medication Use in the First 2 Years Post Partum. JAMA Netw Open. 2024 Aug 1;7(8):e2426394. doi: 10.1001/jamanetworkopen.2024.26394. PMID: 39110457; PMCID: PMC11307130.

Introduction

Hypertension can persist from pregnancy or present de novo in the postpartum period and continue to pose a risk to maternal well-being. These risks are magnified as many patients present after hospital discharge and go unrecognized because of decreased medical surveillance after delivery.

In Denmark, hypertensive disorders of pregnancy (HDPs) affect approximately 2% to 5% of pregnancies1. Although women who had HDPs have postpartum risks of chronic hypertension that are up to 10 times those observed among women with no history of HDPs and substantially increased long-term risks of cardiovascular disease and renal dysfunction, postpartum management of women who had HDPs is inconsistent and fragmented.

Persistent high blood pressure 6 weeks after a pregnancy complicated by an HDP is associated with later chronic hypertension, which increases the risk of cardiovascular disease[2]. However, randomized clinical trials have shown that strict blood pressure control in the immediate postpartum period produces reductions in diastolic blood pressure that persist 3 to 4 years post partum[3,4], suggesting that, to mitigate cardiovascular disease risk and improve long-term outcomes among women who had HDPs, women who continue to have hypertension after delivery should immediately initiate treatment with antihypertensive medication and be strictly managed until they no longer have hypertension.

In this cohort of more than 780 000 women with pregnancies in Denmark from 1995 to 2018, timing, cumulative incidence, and relative risk of initiating antihypertensive medication use within 2 years of delivery among women with or without an HDP was investigated in this study.

Objective

To assess the incidence of initiation of antihypertensive medication use in the first 2 years after delivery by hypertensive disorder of pregnancy (HDP) status and antenatal antihypertensive medication use.

Design, setting and participants

This Danish register-based cohort study used data from women with at least 1 pregnancy lasting 20 or more gestational weeks (only the first pregnancy in the period was considered) who delivered from January 1, 1995, to December 31, 2018. Statistical analysis was conducted from October 2022 to September 2023

Main outcomes and measures

Cumulative incidences and hazard ratios (HR) of initiating antihypertensive medication use within 2 years post-partum by HDP status and antenatal medication use.

Results

The cohort included 784782 women, of whom 36900 (4.7%[95%CI,4.7%-4.8%]) had an HDP (HDP: median age at delivery, 29.1 years [IQR, 26.1-32.7 years]; no HDP: median age at delivery, 29.0 years [IQR, 25.9-32.3 years]). The 2-year cumulative incidence of initiating postpartum antihypertensive treatment ranged from 1.8% (95% CI, 1.8%-1.8%) among women who had not had HDPs to 44.1% (95% CI, 40.0%-48.2%) among women with severe preeclampsia who required antihypertensive medication during pregnancy. Most women who required postpartum antihypertensive medication after an HDP initiated use within 3 months of delivery (severe preeclampsia, 86.6% [95% CI, 84.6%-89.4%]; preeclampsia, 75.3% [95% CI, 73.8%-76.2%]; and gestational hypertension, 75.1% [95% CI, 72.9%-77.1%]). However, 13.4% (95% CI, 11.9%-14.1%) of women with severe preeclampsia, 24.7.% (95% CI, 24.0%-26.0%) of women with preeclampsia, 24.9% (95% CI, 22.5%-27.5%) of women with gestational hypertension, and 76.7% (95% CI, 76.3%- 77.1%) of those without an HDP first filled a prescription for antihypertensive medication more than 3 months after delivery. Women with gestational hypertension had the highest rate of initiating medication after more than 1 year post partum, with 11.6% (95% CI, 10.0%-13.2%) starting treatment after this period. Among women who filled a prescription in the first 3 months post partum, up to 55.9% (95% CI, 46.2%-66.1%) required further prescriptions more than 3 months post partum, depending on HDP status and antenatal medication use.

Choice of Postpartum Antihypertensive Medication

In this study the maximum number of medications used in a 30-day period, overall, most (92.5% [95% CI, 92.2%-92.9%]) women filling postpartum prescriptions for antihypertensive medication used a single medication; 6.5% (95% CI, 6.1%-6.9%) used 2 medications, 0.8% (95% CI, 0.7%-0.9%) used 3 medications, and 0.1% (95% CI, 0.5%-0.15%) used 4 or more medications. However, more women with HDPs (up to 20.2% [95% CI, 19.1%-21.3%]) filled prescriptions for more than 1 medication in a 30-day period. The type of medication prescribed depended on HDP status and timing of postpartum initiation of use. Generally, β-blocking agents and diuretics were the first-line medications during the study period, followed by renin- angiotensin system blockers, mostly for women with HDPs. Calcium channel blockers and other antihypertensive medications were rarely used as first-line therapies. Over the 23-year study period, use of diuretics gradually decreased, while use of calcium channel blockers and renin-angiotensin system blockers increased, particularly after 2010

Discussion

In a large population-based cohort of women with pregnancies between 1995 and 2018, up to 44.1% of women who had HDPs initiated antihypertensive medication use within 2 years of delivery, with most doing so within 3 months of delivery. Women with HDPs were up to 57 times more likely than women without registered HDPs to fill a first prescription for antihypertensive medication in the first 3 months post partum, with the highest medication initiation rates observed among women who had had severe preeclampsia. Among women who initiated use of antihypertensive medication within 3 months of delivery, up to 55.9% filled additional prescriptions thereafter. Although β-blocking agents and diuretics were the most widely used antihypertensive agents, choice of medication varied by year of prescription, HDP diagnosis, and timing of initiation of use.

Implications of Study Findings for Postpartum Blood Pressure Control Policy

Approximately 40% of women with HDPs may require antihypertensive therapy within 6 weeks of delivery, emphasizing the need for postpartum follow-up in this group of women[5]. The American College of Obstetricians and Gynecologists recently recommended that after an HDP, women should have their blood pressure evaluated no later than 7 to 10 days post partum, with additional monitoring tailored to each woman's individual needs. They also highlighted the "fourth- trimester" care gap that exists because it is unclear which specialty (obstetrics, family practice, cardiology) should be responsible for postpartum follow-up for these women. The United Kingdom's National Institute for Health and Care Excellence also recommends blood pressure monitoring for at least 14 days post partum for women with preeclampsia, without specifying whether further monitoring is warranted or who bears the responsibility for such monitoring.

Tight blood pressure control in the immediate postpartum period produces lasting reductions in blood pressure, potentially reducing the risk of long-term cardiovascular disease among women who had HDPs by more than 30%.[6,7]However, among women with HDPs in our cohort who initiated use of antihypertensive medication post partum, up to one-fourth did so more than 3 months after delivery, suggesting that a considerable proportion of these women may have unrecognized or untreated hypertension in the immediate postpartum period. A delay in recognition and effective management might explain why women who had HDPs exhibited marked increases in initiation of antihypertensive therapies more than 18 months post partum, compared with women without HDPs.

The problem of unrecognized and undertreated hypertension among postpartum women is unlikely to be specific to Denmark and may be even more pronounced in settings without free universal health care. Moreover, women with GH typically receive less postpartum attention than women with preeclampsia, although our results suggest that the former were more likely to require additional antihypertensive medication after an initial postpartum prescription. The natural history of postpartum blood pressure after HDPs is poorly studied, but 1 small study showed that 50% of women who had preeclampsia still had hypertension 6 to 12 weeks post partum, both overall and among women still receiving treatment. The lack of robust data does not detract from the importance of early diagnosis and effective management of persistent postpartum hypertension as a strategy to reduce long-term cardiovascular disease among these women. In fact, the benefits of postpartum clinics offering standardized care to women at greatest risk of long-term adverse outcomes after pregnancies complicated by HDPs are currently being evaluated. Future research should evaluate the clinical efficacy of systematic postpartum blood pressure monitoring and early management of postpartum hypertension in preventing diagnostic delays, decreasing the burden of chronic hypertension, and improving cardiovascular disease prevention among women after HDPs.

Choice of Antihypertensive Medication

Overall, women who had HDPs were most frequently first prescribed β-blocking agents post partum, possibly because they simply continued with the medication they used antenatally, when β-blockers are often used. However,

consistent with recent recommendations that renin-angiotensin system blockers be the first-line postpartum antihypertensive treatment in women who had HDPs (except in women of African or Caribbean origin, among whom calcium channel blockers are the preferred first-line agents), study observed a shift toward renin-angiotensin system blocker use later in the study period among these women. In contrast, women with neither an HDP diagnosis nor antenatal antihypertensive medication use were primarily prescribed diuretics post partum.

Strengths and Limitations

This study has some strengths. The cohort's size allowed to produce a detailed description of the initiation of antihypertensive medication use in the immediate postpartum period by HDP diagnosis and time since delivery. The use of prospectively collected registry data from the entire Danish population minimized the risk of selection bias and eliminated the possibility of recall bias. Hypertensive disorders of pregnancy diagnoses in the National Patient Register have been shown to have a specificity greater than 99%, indicating that most registered diagnoses are correct. However, the register's sensitivity for HDPs was only 69% for preeclampsia and 10% for GH, indicating that many women, particularly those with GH, may not be registered as having had an HDP, and women with the most severe cases of hypertension in pregnancy may be overrepresented in our HDP groups, making it difficult to generalize our results to women with milder disease. On the other hand, women with milder disease (GH in particular) who were managed on an outpatient basis may have comprised most of the women with no HDP diagnosis who filled prescriptions for antihypertensive medication during pregnancy. This group likely also included some women with either undiagnosed or unregistered preexisting chronic hypertension. However, because the prevalence of chronic hypertension among women of childbearing age in the general population is low, because the cohort included all Danish residents with pregnancies in the study period, and because study excluded all women who filled prescriptions for antihypertensive medication before pregnancy, women with unregistered chronic hypertension were likely only a minority of the group of women without a registered HDP diagnosis who filled prescriptions for antenatal antihypertensive medication.

This study also has some limitations. The National Prescription Registry contains information only on prescriptions filled at community pharmacies. Medications administered in the hospital or provided by hospital-based outpatient clinics are not registered, which explains the low proportion of women with HDPs who received antenatal medication (10.5%).[8] Some women receiving postpartum medication before discharge might therefore also have been misclassified as not using postpartum antihypertensive medication, but most would have been discharged with an additional prescription for antihypertensive medication, making their identification inevitable, if potentially delayed.

The Danish registries do not include information on postpartum blood pressure measurements. Consequently, the study population included women for whom antihypertensive medication was not indicated; study report the incidence of postpartum initiation of medication use among all women who delivered in the study period rather than only among women who continued to have hypertension post partum. Therefore, the results potentially underestimate the proportion of women receiving correct post-HDP follow-up with respect to postpartum blood pressure. Information on factors associated with physician prescribing practices (eg, specialty, experience, academic affiliation, health care sector, regional socioeconomic factors) and patient care-seeking behavior (eg, income and educational level) would have provided further nuance to our findings but was unavailable to us. Despite these limitations, the observed patterns of initiation of medication use indicate that for a significant fraction of women, identification and treatment of persistent postpartum hypertension may not occur promptly enough to reduce the risk of later cardiovascular disease, even in a country where all women have good access to care in the postpartum period.

Conclusions and relevance

In this cohort study of postpartum women, the incidence of initiation of postnatal antihypertensive medication use varied by HDP status, HDP severity, and antenatal antihypertensive medication use. Up to 24.9% of women initiated antihypertensive medication use more than 3 months after an HDP, with up to 11.6% initiating treatment after 1 year. Routine postpartum blood pressure monitoring might prevent diagnostic delays in initiation of antihypertensive medication use and improve cardiovascular disease prevention among women.

References

1. Abalos E, Cuesta C, Grosso AL, Chou D, Say L. Global and regional estimates of preeclampsia and eclampsia: a systematic review. Eur J Obstet Gynecol Reprod Biol.2013;170(1):1-7.
2. Visser VS, Hermes W, Franx A, et al. High blood pressure six weeks postpartum after hypertensive pregnancy disorders at term is associated with chronic hypertension. Pregnancy Hypertens. 2013;3(4):242-247.
3. Kitt JA, Fox RL, Cairns AE, et al. Short-term postpartum blood pressure self-management and long-term blood pressure control: a randomized controlled trial.Hypertension.2021;78(2):469479.
4. Kitt J, Fox R, Frost A, et al. Long-term blood pressure control after hypertensive pregnancy following physician- optimized

self-management: the POP-HT randomized clinical trial. JAMA.2023;330(20):1991-1999.

5. Cairns AE, TuckerKL, Leeson P, et al; SNAP-HT Investigators. Self-management of post natal hypertension: theSNAP- HT-trial. Hypertension.2018;72(2):425-432.
6. Stuart JJ, Tanz LJ, Rimm EB, et al. Cardiovascular risk factors mediate the long-term maternal risk associated with hypertensive disorders of pregnancy. J Am Coll Cardiol.2022;79(19):1901-1913.
7. VisserW, Wallenburg HC. Central hemodynamic observations in untreated preeclamptic patients. Hypertension.1991;17(6,pt2):1072-1077.
8. Kildemoes HW, Sørensen HT, Hallas J. The Danish National Prescription Registry. Scand J Public Health.2011;39(7)(suppl):38-41.

Forthcoming Events

- **05/07/2025** - From Suspicion to Survival: Red flags and real-world management, will be conducted by Max Saket, New Delhi in collaboration with AOGD Oncology committee at Lalit hotel.
- **08/07/2025** - Webinar on "Silent Threat: Unmasking Rh Isoimmunisation in Antenatal Care" will be conducted by Fetal Medicine & Genetics Subcommittee, AOGD
- **11.07.2025** – Public Forum on "Family Planning" will be conducted by Dept. of Obst & Gynae, LHMC & SSK Hospital in association with AOGD on the occasion of World Population Day
- **11.07.2025** - Public Awareness Session on Contraception On occasion of World Population day will be conducted by Community Health and public awareness Sub Committee AOGD
- **13/07/2025** - Skill Enhancing Workshop in Colposcopy and Treatment of Preinvasive lesion of Cervix will be conducted by Oncology Committee, AOGD in collaboration with ISCCP, DGF& Oncology Committee, FOGSI at Sant Parmanand Hospital, Civil Lines Delhi.
- **15.07.2025** – Webinar on "Scar ectopic and cesarean complications" will be conducted by Fetal Medicine & Genetics Subcommittee AOGD
- **18.07.2025**- FOGSI Presidential Initiative -Aparajita Sampoorna Physical CME conducted by Infertility and Reproductive Endocrinology Subcommittee of AOGD in Central Delhi
- **19.07.2025** - CME on Contraception – "Empower Women, Empower Future: Build Families with Choices " will be conducted by Dept. of Obst & Gynae, LHMC & SSK Hospital in association with AOGD on occasion of World Population Day.
- **31.07.2025**- Webinar on "Polycystic Ovary Syndrome: A 360° Clinical Update" by SIG Early Pregnancy, Indian Fertility Society with Infertility and Reproductive endocrinology Subcommittee of AOGD
- **2.08.2025**- Physical CME on "ART Regulations"at Sitaram Bharatia Institute of Science and Research conducted by Infertility and Reproductive endocrinology Subcommittee of AOGD and SIG Early Pregnancy, Indian Fertility Society
- **4/08/2025** -Webinar on "TORCH Infections & Genetic disorders in Pregnancy" will be conducted by Fetal Medicine & Genetics Subcommittee.

FIRST VERSION

Fourth Trimester: A Blueprint for Postnatal Health

Shivangni Sinha[1], Sara[2]
[1]Assistant Professor, [2]SR, Obs & Gyn, LHMC, New Delhi

Evidence-Based Recommendations for Maternal and Neonatal Wellbeing

The fourth trimester, defined as the first 12 weeks following childbirth, represents a critical period for mothers, newborns, partners, and caregivers. Despite its significance, it continues to carry an unacceptably high burden of maternal and neonatal morbidity and mortality. These recommendations aim to strengthen the quality of routine postnatal care to enhance health outcomes and long-term well-being.

A. Maternal Care: What to Do and What to Avoid

Know the Timing:

- 18% of maternal deaths occur within the first 1–6 days, 21% between 7–41 days, and 13% after 42 days postpartum.
- The risk of thromboembolism is 5 times or 10 times higher in postpartum than during pregnancy.

Key Recommendations (Quiz Style):

1. Postpartum follow-up should include an initial contact within:

   o 3 days or 3 weeks postpartum?
2. A complete biopsychosocial evaluation should be completed within:

   o 3 weeks or 3 months?
3. For normotensive women, if the first blood pressure reading is normal, repeat BP within:

   o 6 hours or 12 hours?
4. Women with hypertensive disorders of pregnancy should have their BP rechecked within:

   o 7 days or 15 days?
5. Gestational diabetes follow-up: a 75g 2-hour OGTT should be done between:

   o 4–12 weeks or 6–12 weeks postpartum?

B. Postpartum Care Bundle

High HIV Burden Settings:

- Postpartum HIV testing is essential for women with HIV-negative or unknown status who missed earlier screening.

Best Practice Statements (True/False Style):

1. Oral paracetamol is the first-line analgesic for postpartum perineal pain.
2. The PPH care bundle includes oxytocic agents, tranexamic acid, IV fluids, and genital tract exam within 15 minutes of detection. Uterine massage is not part of the treatment bundle, but is recommended as a preventive measure after prophylactic oxytocin.
3. Tranexamic acid (TXA) 1g IV (1 ml/min over 10 min) should be administered within 3 hours of birth once PPH is diagnosed. A second 1g dose is given if bleeding persists after 30 minutes or 2 hours?
4. The refractory PPH bundle includes compressive measures and balloon tamponade. The third component is:

   o B-Lynch suture or non-pneumatic antishock garment?
5. Pelvic floor muscle training (PFMT) is not routinely recommended after childbirth to prevent urinary and fecal incontinence.
6. Routine use of laxatives is advised to prevent postpartum constipation.
7. Routine antibiotics are not recommended for uncomplicated vaginal deliveries.
8. Vitamin A supplementation is advised to reduce maternal and infant morbidity and mortality.
9. A minimum of four postnatal care visits is recommended at:

   o within 24 hours,

   o 8–72 hours,

   o 7–14 days,

   o and during the sixth week.

C. Mind and Body: Mental Health & Natural Recovery

Emotional Well-being:

- 3–16% of women may develop postpartum PTSD (post-traumatic stress disorder).
- Screening for depression and anxiety using validated tools (e.g., EPDS, PHQ-9) should be conducted at each postnatal contact, with access

to appropriate care pathways.

Fertility and Contraception (Quiz Style):

1. While breastfeeding, pregnancy is unlikely if menses have not resumed, the infant is <6 months old, and feeds occur with no gaps >2–3 hours or 4–6 hours?
2. Use of proteolytic enzymes for breast engorgement is recommended.
3. Breastfeeding women can use combined oral contraceptives or levonorgestrel emergency contraceptive pills (ECPs) without restriction (MEC Category 1).
4. WHO supports the use of digital birth notifications in health and civil registration systems. True/ False?

D. Newborn Care: Early Learning and Transition

Best Practices:

- Supine sleeping during the first year reduces the risk of SIDS (Sudden Infant Death Syndrome and SUDI (Sudden Unexpected Death in Infancy).
- Healthy newborns should receive immediate skin-to-skin contact (SSC) for at least the first hour or quadruple hour after birth ?
- Delay the first bath of a term newborn for a minimum of:

  o 24 hours or 48 hours?
- At discharge, which route of bilirubinometry is recommended for screening neonatal jaundice? Transcutaneous or Intravenous?
- Daily application of 4% chlorhexidine to the umbilical cord stump is advised only in settings where harmful traditional substances are used. (True/ False) ?

Answer Key:

A.

1. Initial evaluation: 3 weeks
2. Full evaluation: 3 months
3. BP recheck (normotensive): 6 hours
4. BP recheck (hypertensive): 7 days
5. OGTT for GDM: 4–12 weeks

B.

1. Paracetamol: True
2. Uterine massage exclusion in PPH bundle: False
3. Tranexamic acid (TXA) window: 3 hours

   a. Second Tranexamic acid (TXA) dose timing: 30 minutes
4. Refractory PPH third component: Non-pneumatic antishock garment
5. PFMT recommendation: True
6. Laxatives: False
7. Antibiotics: True
8. Vitamin A: False
9. Four postnatal visits: True

C.

1. Breastfeeding spacing for LAM: 4–6 hours
2. Proteolytic enzymes for engorgement: False
3. ECPs in breastfeeding: True
4. Digital birth notifications: True

D.

- Skin-skin contact (SSC) duration: First hour
- Bath delay: 24 hours
- Bilirubinometry: Transcutaneous
- Chlorhexidine in traditional-use settings: True

AOGD Clinical Meet from Indraprastha Apollo Hospital Sarita Vihar held on 27th June 2025

ATYPICAL PRESENTATION OF OVARIAN DERMOID CYST

Neelam Suri[1], Vinit Suri[2], Kareena Rai[3]
[1]Senior Consultant Obstetrician and Gynecologist, Laparoscopic and Robotic surgeon, Academic Advisor, Deptt of Obstetrics and Gynaecology, Indraprastha Apollo Hospital, New Delhi
[2]Senior Consultant Neurologist, Academic Advisor, Deptt of Neurosciences, Indraprastha Apollo Hospital, New Delhi[2]
[3]DNB Resident

Case report

A 36 yr, doctor P1 L1, previous LSCS presented with acute onset psychosis of 2 weeks duration and started talking in a male voice as if possessed .She was treated with antipsychotics with poor response and developed apid decline in sensorium.She was admitted to another hospital following 3 seizures .MRI Brain and CSF study were normal. She was managed as viral Encephalitis with Acyclovir but had rapid decline in neurological status , was intubated ,ventilated and ,tracheotomized and then was transferred to IAH Delhi. On arrival she was comatose with poor motor responses .In view of presentation with constitutional symptoms followed by behavioural abnormality followed by decline in sensorium and seizures and normal CSF infection panel the presentation was suggestive of autoimmune encephalitis – NMDAR type and patient was managed empirically with immunoglobulin and IV Methylprednisolone for 5 days. CSF autoimmune encephalitis panel was positive for NMDAR. USG abdomen and pelvis and TVS revealed no ovarian mass . Whole Body PET CT revealed normal appearing brain parenchyma with no differential increased FDG uptake with no demonstrable metabolically active abnormality in the remaining whole body. Patient had rapid improvement in neurological condition and was weaned off ventilator in 2 weeks and tracheostomy was closed .However since the source of NMDA antibodies could not be localized patient was evaluated further with high resolution MRI pelvis which revealed a thin walled fluid intensity cyst measuring 3.6x3 cm in right ovary and a left ovarian cyst of 1.7 x 1.4 cm suggestive of teratoma. Laparoscopic ovarian cystectomy was performed and the left ovary revealed a teratoma ~ 3 cm size with fat and hair contents and histopathology was consistent with a teratoma.

Discussion

Autoimmune encephalitis (AE) comprises a group of non-infectious immune-mediated inflammatory disorders presenting as diverse, subacute onset neurologic presentation (rapid onset - progression to significant clinical impairment within < 12wks) accompanied by disease-specific antibodies.

NMDAR Encephalitis is common in young females and has a strong association with ovarian teratomas which may be difficult to diagnose initially because of their small size .Anti N-methyl D aspartate Receptor (NMDAR) Encephalitis is an autoimmune or paraneoplastic condition in which IgG antibodies are produced to this receptor .Typically they target the NR1 sub unit of this receptor . CSF and serum analysis can identify these neuronal antibodies which aid in the diagnosis in patients presenting with the characteristic clinical picture .

Ovarian teratomas are by far the most common ovarian germ cell tumor. Most teratomas are benign unless a somatic transformation occurs. Mature Teratoma (MT) account for more than 95% of all ovarian teratomas and are the most common ovarian germ cell tumors in females in second and third decade of life..The clinical presentation of MTs ranges from asymptomatic to chronic or acute pelvic pain, and rare complications such as cyst rupture and malignant transformation denoting a degeneration of a somatic teratomatous element to a non-GCT malignant histologic type, equivalent to a somatic malignancy.

Although rare, it is important to search for an occult ovarian teratoma in a patient who presents with anti-NMDAR encephalitis and early detection and prompt treatment can lead to a favorable prognosis .

Genetic Evaluation for Common Obstetric Conditions

Ambika Gupta
MBBS, MD, DM (Medical Genetics, AIIMS, New Delhi), Consultant, Medical Genetics, Apollo Genomics Institutes, Apollo Hospitals Delhi

Some of the common conditions that mandate a genetic evaluation include a couple with a positive family history of a genetic disorder. These primarily include **neurological disorders,** especially early neurodegenerative disorders with dementia, movement disorders, including ataxia and myopathy. **A positive family history of a member having an early onset chronic disease like early renal failure (as in Alport's syndrome), cardiomyopathy, or sudden cardiac/unexplained death (as in Long QT syndrome) also warrants an evaluation**. Either member of the couple or their first-degree relatives with significant intellectual impairment, vision, or hearing impairment need a preconception genetic evaluation. **Likewise, a couple with a previously affected child with unexplained multisystemic, especially neuromuscular, neurodevelopmental problems, chronic lung disease,**

immunodeficiency, or syndromic features should preferably have the affected child evaluated for an underlying genetic defect. The risk of recurrence can then be evaluated, and management options made available to the couple. For cases with unexplained IUD or stillbirth, DNA storage from the umbilical cord/skin specimen should be done, and genetic evaluation should be sought. The couple may also opt for fetal autopsy.

For a fetus with malformation, especially in the case of a couple who have already undergone genetic testing with the fetal medicine team, all reports, **whether positive or negative, pathogenic or uncertain, need a detailed evaluation by the clinical geneticist.** Every case that shows pathogenic on test, may not be equally pathogenic in the baby and hence, informed continuation of pregnancy may also be undertaken by many couples (as all cases of familial OI may not be severe and pregnancy may be continued based on the geneticist's opinion on genotype-phenotype, available management options and effect of a previously less affected family member).

Another area in which a lot of uncertainty remains is recurrent pregnancy loss. Essentially, only **around 3-5% of RPL cases are due to an underlying balanced chromosomal rearrangement** in one of the partners. Otherwise, no specific single gene etiology has been identified in RPL. There is currently no indication for sequencing-based tests in such cases. The last guidelines by the ESHRE, 2017, do not recommend couples' karyotypes as a routine in RPL couples, while RCOG states that if in POC, chromosomal analysis, any abnormality is identified, parents' karyotypes should be done. **All couples with RPL where POC chromosomal microarray (CMA) has not been done should be evaluated with a couple's karyotype**. Karyotype of the POC results in failure more than 50% time, so ideally, CMA should be offered. On identification of chromosomal abnormality in POC, parental karyotype and not CMA should be carried out.

Apart from this, some lesser-known but much-needed information on Non-Invasive Prenatal Testing (NIPT) is mandated due to increasing IVF, **where NIPT should be offered to all patients regardless of previous preimplantation genetic testing.** In multifetal gestations with fetal demise, vanishing twin, or anomaly in one fetus, there is a significant risk of an inaccurate test result. **If an enlarged nuchal translucency or an anomaly is identified on ultrasound examination, the patient should be offered genetic counseling and diagnostic testing.** A **no call /failed NIPT increases risk of aneuploidy. Currently, NIPT for rare autosomal trisomies is not recommended.**

Perimortem Caesarean Section – An Ethical Dilemma

S. B. Khanna, Kiranabala Dash, Yash Bahuguna

Case Summary and Presentation Overview

A 32-year-old woman, gravida 3 para 2, at 38 weeks of gestation, attempted a home birth under the supervision of an untrained midwife. During labor, she developed complications and suddenly collapsed at home. No cardiopulmonary resuscitation (CPR) was initiated at the scene. She was transported to the emergency department, arriving approximately 15 minutes later in a state of cardiac arrest. On arrival, advanced life support measures were promptly initiated. A handheld Doppler was used to check for fetal heart tones, but none were detected—likely due to the ongoing CPR and possible fetal compromise. Although neighbours cum attendant's were present, they declined to make any decisions, citing the absence of the husband who was out of station. Given the advanced gestational age and the urgency of the situation, the medical team proceeded with an emergency PMCS to attempt to salvage the fetus and possibly to improve maternal resuscitation outcomes. Intraoperatively, obstructed labor was identified, and the fetus was found to have congenital anomalies, including macrocephaly and limb shortening, suggestive of a skeletal dysplasia. Despite prompt delivery and aggressive neonatal and maternal resuscitation efforts, both the mother and neonate could not be revived.

Ethical Considerations :

- Consent Dilemma: The unconscious status of the patient and the family's refusal to authorize intervention left the medical team to act under emergency doctrine.
- Uncertainty of Fetal Viability: No fetal heart tones were confirmed, raising concerns about the utility and consequences of surgical intervention.
- Maternal vs. Fetal Priority: With maternal prognosis deemed extremely poor, the focus shifted to fetal salvage.
- Congenital Anomalies and Outcome: The post-delivery discovery of fetal anomalies raised ethical questions about futility and anticipated quality of life.
- Legal Protection and Institutional Protocols: The case underscored the importance of clearly defined hospital policies to support clinician decision-making in such high-stakes situations.

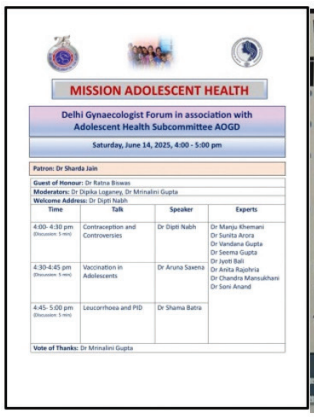
Guidelines Covered:

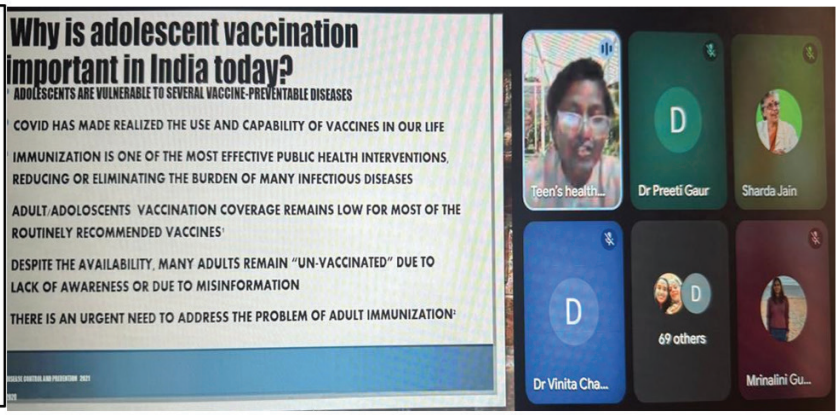
The presentation outlined current recommendations from the American Heart Association (AHA), American College of Obstetricians and Gynecologists (ACOG), and Royal College of Obstetricians and Gynaecologists (RCOG). These guidelines emphasize initiating PMCS within 4 minutes of maternal arrest and completing delivery by 5 minutes for the best chance of fetal survival and maternal resuscitation.

Events Held 2025

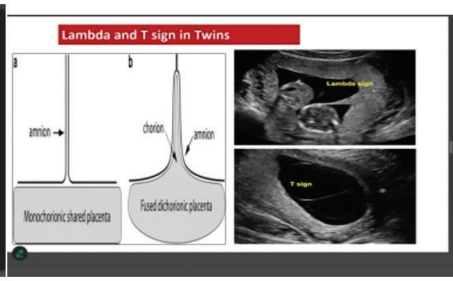
CME on Cholestasis of Pregnancy & Unseen situations in Pregnancy conducted by FOGsd in association with AOGD & NARCHI on 6th June 2025 at India Habitat Centre

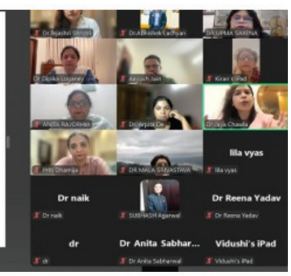
Webinar on "Mission Adolescent Health" conducted by Adolescent health committee AOGD in association with Delhi Gynae Forum on 14th June 2025





Webinar on 'Twins :The double Trouble'conducted by Fetal medicine & Genetics Subcommittee AOGD on 16th June, 2025





On the occasion of Yoga Day, yoga session conducted by LHMC& SSK Hospital on 21.06.2025

Yoga session for Doctors & Patients conducted by Community Health and public awareness Sub Committee AOGD in association with IMA East Delhi & WDWA on 21.06.2025

Webinar on “Start Right : Preconception to Prenatal Genetics Unplugged: Mix Bag " conducted by Fetal Medicine & Genetics Subcommittee AOGD on 24.06.25

CME on Endometriosis and its management in Infertility conducted by Endometriosis committee AOGD at Eros , Nehru Place on 26.06.25

The AOGD Monthly Clinical Meeting (virtual) conducted by the Department of Obst & Gynae, Apollo Hospital, New Delhi on 27.06.2025

CME on "Basics of Fetal Medicine and Genetics for Obstetrics" conducted by Fetal medicine & Genetics Subcommittee AOGD at Eros Hotel, Nehru Place, New Delhi on 28.06.2025

Congratulations to Dr. Jyotsna Suri on being awarded the Honorary FRCOG (Fellowship of the Royal College of Obstetricians and Gynaecologists) for her outstanding contributions to academia and pioneering work in critical care Obstetrics in India!

Guidelines for submission of Competition Papers

1. Last Date for Competition Paper (Abstract & full text) Submission is 15/07/2025
2. Candidates should be less than 30 years of age.
3. Only registered delegates are entitled to submit competition paper.
4. One must be a life / annual member to submit the paper in the conference.
5. All papers should be original manuscripts and not already published and presented anywhere else.
6. Place of study and names of supervisor/ principal investigator should not be mentioned anywhere in the full text of the manuscript.
7. Students should submit a certificate forwarded by their Head of the Department.
8. Competition papers may be submitted online through the AOGD conference website www.aogd2025conference.com as two word files separately – one abstract and one full text.
9. Presenting author details – phone no. and email Id should be entered into the submission system. All further correspondence will be sent only to the contact email entered.
10. Please follow the Submission guidelines given on online registration portal.
11. Submit your manuscript in word format.
12. Text should be in lower case, black only, Font: Times New Roman, Font size: 12.

Abstract

1. Title should be concise and short.

2. Authors and Disclosures

- The names of authors should follow immediately under the title (Maximum 6 authors). Underline the presenter's name. Do not include degrees or professional designations
- Affiliation of the authors should follow in the next line.

a) Body of abstract should be upto 250 words

b) Please use the headings listed below to construct your abstract:

- Introduction: Describe the background supporting the relevance of the research question
- Objective: State the purpose of the study or investigation.
- Methods: State details on study subjects, techniques, and/or observational/analytical methods.
- Results: Include your main findings, noting statistical data.
- Conclusions: Summarize principal conclusions, emphasizing new and important aspects.

c) Do not include graphs ,tables and references in the abstract.

Full Text

1. Full text should be upto 2500 words and includes Introduction, Material and Method (includes Sample size, Study design, Methodology), Results, Discussion & Conclusion. (mention word count below title).
2. Full text should have title and only name of presenter
3. Place of study and names of supervisor/ principal investigator should not be mentioned anywhere in the full text of the manuscript, if found paper will be disqualified
4. All tables and graphs in the full text should be appropriately labeled, numbered and have a brief title.
5. References: As per the Vancouver style.
6. Use of standard abbreviations is desirable. Write uncommon abbreviations in bracket after the full word when it appears for the first time in the text.
7. Use numerals to indicate numbers, except in the beginning of sentences.
8. Use single-line vertical spacing and leave one line between paragraphs.

Please Note

- The paper will be reviewed and rated by scientific committee/ judges prior to final decision on acceptance. Their decision will be final.
- Please use the online abstract submission portal to upload this word document www.aogd2025conference.com only. Hard copies will not be accepted.
- All the information required on the online abstract/ paper submission form must be entered in various fields before uploading your word document.
- Best 7 papers will be considered for paper presentation during conference
- The remaining papers will be considered for free paper presentations
- Competition papers submitted after last date will be considered for free paper presentation (not competition)
- The decision of organizing committee will be final
- The date and time of presentation will be informed latest by 5/9/2025. Those who do not receive any information by email may write a mail to aogdlhmc2025@gmail.com

Guidelines for submission of Free Communication (Oral & E- Poster)

1. Last date for abstract submission is 31st July, 2025.
2. Only registered delegates are entitled to submit posters/papers.
3. One must be a life / annual member to submit oral/ poster in the conference.
4. Presenting author details – phone no. & email Id should be entered into the submission system. All further correspondence will be sent only to the contact email entered.
5. Students should submit a certificate forwarded by their Head of the Department.
6. Abstracts are to be submitted on the following themes:
   - High Risk Obstetrics
   - Gynaecological Oncology
   - Endoscopy
   - Reproductive Endocrinology
   - Miscellaneous
7. Theme to be selected at the time of submission.
8. All Case reports will be admitted as Poster Presentation.

Instruction for the abstract

a) Title should be concise and short.

b) The names of authors should follow immediately under the title (Maximum 6 authors). Underline the presenter's name. Do not include degrees or professional designations.

c) The names of institution, city and country should follow after the authors names, on a different line.

9. Abstract should be upto 250 words.

a) Text should be in lower case, black only, Font: Times New Roman, Font size: 11

b) Headings listed below are to be used to construct the abstract:
   - Introduction: Describe the background supporting the relevance of the research question
   - Objective: State the purpose of the study or investigation.
   - Methods: State details on study subjects, techniques, and/or observational/analytical methods.
   - Results: Include the main findings, and statistical data.
   - Conclusions: Summarize principal conclusions, emphasizing new and important aspects.

   Poster should be divided into 3 sections

   Background, Case Report , Discussion.

c) Use of standard abbreviations is desirable. The first time it appears, the abbreviations are to be written in brackets after the full word.

d) Use numerals to indicate numbers, except in the beginning of sentences.

e) Do not include graphs and references in the abstract.

f) Use single-line vertical spacing and leave one line between paragraphs.

11. Decision of scientific committee / judges will be final.

AOGD 2025

47th Annual Conference of AOGD

Organized By:
Department of Obstetrics and Gynaecology
Lady Hardinge Medical College
New Delhi

13th & 14th September 2025 | Venue: Indian Habitat Centre, New Delhi

Tiny heartbeats to timeless strength - Honouring the journey of women through birth & beyond

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CONFERENCE REGISTRATION FEES

CATEGORY	Early Bird (Till 30th June 2025)			Regular (1st July to 15th Aug 2025)			From 16th August 2025 Onwards/On-spot		
	Amount	GST 18%	Total	Amount	GST 18%	Total	Amount	GST 18%	Total
☐ AOGD Member	6000	1080	7080	6500	1170	7670	7000	1260	8260
☐ Non-Member	7000	1260	8260	7500	1350	8850	8000	1440	9440
☐ PG Students	5000	900	5900	5500	990	6490	6000	1080	7080
☐ AOGD Member (above 75yrs)	Complimentary (Kindly email duly filled Registration Form along with age proof on our offcial email id mentioned below)								

Pre-Conference Workshop - 11th - 12th September 2025

Early Bird (Till 30th June 2025)			Regular (1st July to 15th Aug 2025)			FROM 16TH AUGUST 2025 ONWARDS/ON-SPOT		
Amount	GST 18%	Total	Amount	GST 18%	Total	Amount	GST 18%	Total
1500	270	1770	1800	324	2124	2000	360	2360

Opting For: 11th ☐ 12th ☐ Both Days ☐

Pre-Conference - 11th September 2025 (Tick your choice of workshop)

Name of Workshop	Time	Venue
☐ Mastering POP Surgery: Techniques, Complications, and Comprehensive Management	9:00 Am - 2:00 PM	Auditorium, Sant Parmanand Hospital, Civil lines, Delhi
☐ Laparoscopy and beyond: A hands on workshop	Laparoscopy and be	Skill centre, Sir Gangaram Hospital
☐ From Imaging to Incision: Advancing Precision in Gynae-Oncologic Surgery	9:00 AM - 2:00 PM	AIIMS, New Delhi
☐ Preventive Oncology	10:00 AM - 4:00 PM	Library Hall UCMS & GTB Hospital Delhi
☐ From Prescription to Prosecution: How Doctors Can Prepare for Legal Complaints in Clinical Practice	1:00 PM - 5:00 PM	Cloudnine Hospital, Vikas Puri
☐ Maternal Hope: Ending Preventable Losses, Saving Lives	10:00 AM - 4:00 PM	Northern Railway hospital auditorium, Connaught Place.
☐ Menopause prescription: Hormones and more, Master the art	9:00 AM - 2:00 PM	Mini Auditorium, LHMC

Pre-Conference - 12th September 2025 (Tick your choice of workshop)

Name of Workshop	Time	Venue
☐ Teens Timelines &Trust : Demystifying Amenorrhea and Contraception	9:30 AM - 1:00 PM	Kailash Deepak Hospital , Vikas Marg Delhi -110091
☐ ENDOMETRIOSIS DECODED What the text books don't tell.	1:00 PM- 5:00 PM	AIIMS, New Delhi
☐ VAX TALK .... Adults Too Need Vaccines	1:00 PM – 5:00 PM	Sir Gangaram Hospital Auditorium
☐ Bump to Birth: Foundations of Fetal Health &Genetics	10:00 AM - 5:00PM	Old LT, Behind OPD Block, VMMC & Safdarjung Hospital, New Delhi – 110029
☐ Bringing quality control into managing PCOS	1:00 PM - 5:00 PM	Max hospital, Saket
☐ Controversies in Reproductive Medicine: Case-Based Challenges in Infertility and IVF	9:00 AM - 4:00 PM	Mini Auditorium,LHMC
☐ Postpartum Haemorrhage: Prevention & Cure- Learn The Art	2:00PM - 5:00PM	Auditorium, ABVIMS and Dr RML hospital

Note:

- The above-mentioned fees are applicable per workshop. If a participant wishes to attend 2 workshops, the fee will be charged separately for each.
- Post graduates to attach a certificate from HOD and also should be a member of the AOGD in order to attend and present a paper.
- Membership number is mandatory for registration in membership category. For any queries related to membership, you may contact Ms. Sarita (+91 92116 56757).
- For spot registration: payment will be accepted only by mode of Cash/Card/UPI.
- The disbursal of Delegate kit for the same will be subject to availability Delegate kit would be handed over only to registered delegate.
- Registration is non transferable. Post conference, no kit or any workshop material will be disbursed to the Delegate/associate Delegate/PG student.

FOR OFFLINE PAYMENT

For Cheque/DD Payment: Please issue the cheque in favor of "ASSOCIATION OF OBSTETRICIANS AND GYNAECOLOGISTS OF DELHI"
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Dept. of OBGYN
Lady Hardinge Medical College & Hospitals
New Delhi – 110001

Online Payment Details

Account Name: SEM Account **Account No:** 143611010000011 **Bank:** Union Bank

Branch: Indirapuram, Ghaziabad **IFSC Code:** UBIN0814369 **MICR Code:** UBININBBGHZ

Mode of Payment: Cash ☐ Card (Credit/Debit) ☐ Demand Draft ☐ Cheque ☐ NEFT ☐ Online ☐

TR/Reference Number/Transaction Id : _____

For online payment
Scan this QR

Offline Payment Details

DD/Cheque No: _____ **Dated:** _____

Drawn on (Name of the Bank): _____ **Branch:** _____ **Amount:** _____

Cancellation & Refund Policy

1. All cancellation should be made in writing and sent to AOGD secretariat.
2. All cancellation received on or before 15th July 2025 will be entitled for 75% refund of the amount paid.
3. All cancellation received between 16th July 2025 to 14th August 2025 will be entitled for only 25% of the amount paid.
4. No refund for cancellation made on or after 15th August 2025.
5. The refund process will begin only 30 days after the completion of the conference

NOTE: The organizing committee shall not be held liable for any delay or cancellation of the AOGD 2025 conference due to events beyond its control, including natural disasters, terrorism, war, or labor disputes.

AOGD Office

Secretariat Address
AOGD, Department of Obstetric and Gynaecology, Lady Hardinge Medical College & Associated Hospitals, NEW DELHI- 110001
Email: aogdlhmc2025@gmail.com
Telephone: 011-23404419
Mobile: 9717392924

Conference Manager

Sem Events & Meetings OPC Pvt. Ltd.
59-60, A2, Shiv Arcade, Acharya Niketan, Mayur Vihar Phase 1 New Delhi, India
M: +91 81714 92255 | 93544 81701
Email: info@aogd2025conference.com

Association of Obstetricians & Gynaecologists of Delhi

MEMBERSHIP FORM

Name:.....

Surname: .....

Qualification (year): .....

Postal Address: .....

City:..... **State:** ..... **Pin code:** .....

PHOTO

Place of Working: .....

Residence Ph. No. ..... **Clinical / Hospital Ph. No.** .....

Mobile No:..... **Email:** .....

Gender: Male:..... **Female:**.....

Date of Birth: Date.....**Month** ..... **Year**.....

Member of Any Society:.....

Proposed by .....

Cheque/DD / No: .....

Cheque/Demand Draft should be drawn in favour of**: Association of Obstetricians and Gynaecologists of Delhi**

FOR ONLINE TRANSFER THROUGH NEFT/RTGS

Name of Account: Association of Obstetricians and Gynaecologists of Delhi
Account no: 5786412323
Name of Bank: Central Bank of India
Branch: LHMC & SSK Hospital
IFSC code: CBIN0283462
MICR code: 110016067

ASSOCIATION OF OBSTETR

12418708@cbin

BHIM UPI

For Life Membership	: Rs. 11,000 + Rs. 1,980 (18% GST applicable) = Rs. 12,980
For New Annual Membership*	: Rs. 2,000 + Rs. 360 (18% GST applicable) = Rs. 2,360
For Old Renewal Membership+	: Rs. 1,200 + Rs. 216 (18% GST applicable) = Rs. 1,416

Encl.: Attach Two Photocopies of All Degrees, DMC Certificate and Two Photographs (Self attested)

*** Annual Membership is for the calendar year January to December.**

*** In case of renewal, mention old membership number.**

Note: 18% GST will be applicable as FOGSI requires it.

Send Complete Membership Form Along With Cheque / DD and Photocopy of required documents to the secretariat.
For online transaction send scan copy of all documents with payment slip on given mail id

Secretariat
Department of Obstetrics and Gynaecology
Lady Hardinge Medical College & SSK Hospital, New Delhi-110001
Tel.: 011-23408297, (M): 9717392924 | Email Id: aogdlhmc2025@gmail.com

68th All India Congress of Obstetrics & Gynaecology

aicog Delhi 2026

Advocate Innovate Challenge Optimise Globalise

Ek Rashtra - Ek Mission
Swastha Naari - Samruddha Vatan
Har Ghar FOGSIAN

Conference Theme

68th AICOG 2026 DELHI
All India Congress of Obstetrics & Gynaecology

Inspire, Include, Invent: Improving Women's Health in India

All India Congress of Obstetrics & Gynaecology

14-18 January, 2026
Yashobhoomi, Dwarka | New Delhi
(India International Convention & Expo Centre)

Abstract Submission is Now Open

Abstract Themes

1. Maternal & Child Health
2. Minimal Invasive Gynaecological Surgery
3. Population Stabilization
4. Sexual & Reproductive Health
5. Gynaecologic Oncology
6. Midlife & Geriatric Gynaecology
7. Innovation in OBGYN
8. Miscellaneous

Last Date of Submission
15th October

Scan QR Code For More Information

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LEGENDS GO LIVE

30th & 31st August 2025

30-31, AUG,2025 | 8:00 AM TO 8:00 PM | HYATT REGENCY, NEW DELHI

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DR. NIKITA TREHAN

CHIEF ORGANISER - LEGENDS GO LIVE
INTERNATIONALLY ACCLAIMED GYNAE LAPAROSCOPIC SURGEON

- RECORD FOR THE LARGEST FIBROID REMOVE LAPAROSCOPICALLY OF 6.5 KG
- RECORD FOR THE OLDEST PATIENT OPERATED IN THE WORLD OF 107 YEAR OLD
- RECORD FOR THE LARGEST UTERUS REMOVED LAPAROSCOPICALLY OF 9.5 KG

OPERATING FACULTY


Dr. Mario Maizoni


Dr. Nikita Trehan


Dr. Jay Mehta


Dr. Sandesh Kade


Dr. Shailesh Puntambekar


Dr. Dipak Limbachiya


Dr. Rajesh Modi


Dr. Sanjay Patel


Dr. Osama Shwaki

OT Co-ordinator


Dr. Pooja Garg

PROGRAM DETAILS

DAY 1 - Saturday, Aug. 30, 2025

We have planned a "Surgical Bonanza" where more than 25 surgeries will be relayed LIVE from Sunrise Hospital to Hotel Hyatt Regency Bhikaji Cama Place New Delhi from 08:00 AM to 08:00 PM.

DAY 2 - Sunday, Aug. 31, 2025

8:30 AM to 4:30 PM - "Conference CME and Socratic Seminar" at Hotel Hyatt Regency New Delhi (Oval Banquet)

4:30 PM to 5:00 PM - VALIDECTORY

PLANNED SURGERIES

ENDOMETRIOSIS OT

- Demonstration of CO2 Laser (Boston Scientific) for Endometrioma Ablation
- Laparoscopic Shaving / Discoid Resection of Rectovaginal (RV) Endometriosis
- Laparoscopic Excision of Bladder Nodule
- Laparoscopic Excision of Diaphragmatic Nodule
- Laparoscopic Excision of Sciatic Nerve Endometriosis

BENIGN SURGERY & HYSTEROSCOPY OT

- Laparoscopic Myomectomy
- Laparoscopic Hysterectomy"Sunrise Method"
- Laparoscopic Recanalization
- Hysteroscopic Septal Resection
- Hysteroscopic Subendometrial Stem Cell Injection
- Hysteroscopic Myomectomy

ONCO & ADVANCED OT

- Laparoscopic Extra-Fascial Hysterectomy & Pelvic + Para-Aortic Lymphadenectomy
- Laparoscopic VVF Repair
- Laparoscopic Pregnant Cerclage
- Laparoscopic Ureteric Reimplantation
- Laparoscopic Ileal Vaginoplasty
- Laparoscopic Adenomyomectomy "Sunrise Method"

REGISTRATION FEES DETAILS

REGISTRATION FEES :- Rs 9,500/-
SPOT REGISTRATION :- Rs 11,000/-
ACCOMPANYING PERSON :- SAME AS ABOVE
FOR PG STUDENTS :- Rs 6,000/-
(LETTER FROM HOD IS COMPULSORY)

SPECIAL DISCOUNT (FOR PG STUDENTS)

FOR REGISTRATION DETAILS PLEASE CONTACT ON:

MR. SANJEEV KHURANA: +91-9213179913
MR. RAVI PRAKASH: +91-9711437535

AOGD SECRETARIAT
Department of Obstetrics and Gynaecology
Lady Hardinge Medical College & Associated Hospitals, New Delhi-110001
Tel.: 011-23408297, (M) : 9717392924 | Email Id: aogdlhmc2025@gmail.com