

ICOG CERTIFICATE COURSE IN OBSTETRIC CRITICAL CARE (Hybrid Mode)

Centre- VMMC and Safdarjung Hospital, New Delhi

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Duration:

6 months

- **5 months online (theory + case-based + problem-based learning)**
- **1 month residential hands-on training** at Safdarjung Hospital, New Delhi

Eligibility:

MD / DNB Obstetrics & Gynaecology

Rationale & Need for the Course

India continues to face a significant burden of maternal morbidity and mortality due to **critical illness during pregnancy and the puerperium**. Many obstetricians lack structured training in:

- Recognition of early deterioration
- ICU-level monitoring
- Multisystem involvement in obstetric disease
- Coordination with intensivists and other specialists

This course aims to **bridge the gap between obstetrics and critical care**, empowering obstetricians to function confidently in high-dependency units and obstetric ICUs, particularly in **resource-variable Indian settings**.

Course Highlights

- Competency-based
 - Case-driven
 - Organ-system-oriented
 - Obstetric-specific (not general ICU medicine)
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Course Objectives

At the end of the course, the participant should be able to:

1. Understand **physiological adaptations of pregnancy** and their relevance to critical care
2. Identify early warning signs of deterioration in obstetric patients
3. Manage **life-threatening obstetric emergencies** using evidence-based protocols

4. Apply a **system-wise approach** to critically ill pregnant and postpartum women
 5. Interpret essential investigations (ABG, ECG, basic echocardiography)
 6. Perform **core procedural and resuscitative skills**
 7. Lead and coordinate multidisciplinary care during obstetric emergencies
 8. Practice ethical decision-making and effective communication in critical care settings
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Course Structure (Hybrid Model)

ONLINE COMPONENT – 5 MONTHS

(Approximately 4 hours/week)

Each month includes:

- Live interactive sessions
 - Case-based learning (CBL)
 - Problem-based learning (PBL)
 - MCQs and assignments
 - Faculty-moderated discussions
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Detailed Month-Wise Curriculum

MONTH 1: FOUNDATIONS OF OBSTETRIC CRITICAL CARE

A. Physiological Changes in Pregnancy

- Cardiovascular changes and implications in shock
- Respiratory physiology and oxygenation
- Hematological changes & hypercoagulability
- Renal adaptations & fluid balance
- Hepatic physiology
- Acid–base balance in pregnancy
- Placental physiology and maternal–fetal interface

B. Principles of Obstetric ICU Care

- Definition and scope of obstetric critical care
- HDU vs ICU in obstetrics
- Monitoring: invasive and non-invasive
- Early warning systems (MEOWS – obstetric adaptations)
- ICU scoring systems (SOFA, qSOFA – limitations in pregnancy)
- Ethical issues, consent, end-of-life care

Teaching Methods:

Lectures, short videos, physiology-based case vignettes

MONTH 2: HYPERTENSIVE DISORDERS & CARDIOVASCULAR SYSTEM

A. Hypertensive Disorders

- Preeclampsia and severe preeclampsia
- Eclampsia
- HELLP syndrome
- Pulmonary edema in pregnancy
- Fluid management and antihypertensive therapy
- Magnesium sulfate: pharmacology & toxicity

B. Cardiovascular System

- Heart disease in pregnancy
- Peripartum cardiomyopathy
- Arrhythmias in pregnancy
- Shock in pregnancy (hypovolemic, cardiogenic, septic)
- Inotropes and vasopressors (obstetric considerations)

Teaching Methods:

CBL (eclampsia, pulmonary edema), ECG interpretation sessions, virtual echo clips

MONTH 3: HEMATOLOGY, COAGULATION & OBSTETRIC HEMORRHAGE

A. Hematological Disorders

- Coagulation changes in pregnancy
- DIC in obstetrics
- Thromboembolism (DVT, PE)
- Anticoagulation in pregnancy
- Thrombophilias

B. Massive Obstetric Hemorrhage

- Causes and classification
- Massive transfusion protocols
- Blood component therapy
- Tranexamic acid
- Point-of-care coagulation testing
- Obstetric hemorrhage bundles

Teaching Methods:

Algorithms, flowcharts, PBL, MCQs with lab data interpretation

MONTH 4: SEPSIS, LIVER FAILURE & RENAL FAILURE

A. Sepsis in Obstetrics

- Sepsis and septic shock
- Source identification
- Antibiotic stewardship
- Early goal-directed therapy
- Obstetric sepsis bundles

B. Liver Disorders

- HELLP vs AFLP
- Viral hepatitis in pregnancy
- Acute liver failure
- Indications for referral and transplant (overview)

C. Renal Failure

- AKI in pregnancy
- Fluid management
- Electrolyte disturbances
- Indications for dialysis
- Drug dosing in renal failure

Teaching Methods:

PBL, ABG interpretation workshops, real case discussions

MONTH 5: NEUROLOGY, RESPIRATORY FAILURE & MATERNAL COLLAPSE

A. Neurological Emergencies

- Altered sensorium
- Status epilepticus
- Stroke in pregnancy
- Cerebral venous thrombosis

B. Respiratory Failure

- ARDS in pregnancy
- Oxygen therapy
- Non-invasive ventilation
- Mechanical ventilation principles (basic)

C. Maternal Collapse

- Causes
- Amniotic fluid embolism
- Anaphylaxis
- Cardiac arrest in pregnancy
- Perimortem cesarean section (theory & protocols)

Teaching Methods:

Scenario-based learning, video demonstrations, mock drills (virtual)

MONTH 6 : RESIDENTIAL HANDS-ON TRAINING (1 MONTH) at Safdarjung Hospital**A. Skill-Based Training**

- POCUS in obstetric ICU
- RUSH protocol
- Basic echocardiography (focused views)
- ECG recording & interpretation
- ABG sampling & interpretation
- Infusion pump & syringe driver use
- CPR in pregnancy
- Airway management
- Endotracheal intubation (mannequin-based)
- Use of vasopressors

B. Observational & Assisted Learning

- ICU rounds
 - Echocardiography
 - Ventilator basics
 - Blood bank & transfusion services
 - Central line
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TEACHING–LEARNING METHODS

- Didactic lectures
 - Case-based learning
 - Problem-based learning
 - Simulation & skills lab
 - Video-based learning
 - Reflective learning logs
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