

*Life Saving Anaesthetic Skills
for
Emergency Obstetric Care*

Guidelines for Trainers



*Maternal Health Division
Department of Family Welfare
Ministry of Health & Family Welfare
Government of India
New Delhi*



*Jai Prakash Narayan Apex Trauma Centre
(Emergency Response Centre-Aprelude)
Casualty & Emergency Services
Department of Anaesthesia & Intensive Care
All India Institute of Medical Sciences
New Delhi*

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LIFE SAVING ANAESTHETIC SKILLS FOR EMERGENCY OBSTETRIC CARE

Guidelines for Trainers

I. Introduction and Genesis of Course

All pregnant women are at risk of obstetric complication and life-threatening complications occur during labour and delivery. Every year more than 1,00,000 women die in India due to causes related to pregnancy. The main causes of maternal mortality are the complications resulting from hemorrhage, unsafe abortions, eclampsia, sepsis and obstructed labour. Death from most of these causes is preventable with provision of good quality antenatal, natal and post-natal care, safe institutional delivery services, timely referral and provision of emergency obstetric care.

Under the RCH Programme, a number of initiatives have been taken to strengthen Emergency obstetric care services at the First Referral Units. Emergency Obstetric Care Drug Kits are being provided. Each drug kit contains 69 essential drugs including antibiotics, I/V infusions and anesthetic agents. Equipment for operative procedures have already been provided. Equipment for blood storage facilities have been provided by NACO in a number of CHCs and will be provided to remaining units as part of RCH-II. Funding for provision of transport for referral for such cases is also being provided through Panchayats in remote sub-centre areas.

Despite this, the actual operationalisation of First Referral Units (FRUs) is suffering due to lack of specialist/trained manpower, particularly in the field of anesthesia. A scheme for hiring of anesthetists at FRU/CHC level at a payment of Rs 1000 per case has been operational for the last 4 years. However, due to acute lack of anesthetists, particularly in sub-district areas, it has not been possible to get their services. The Tenth Plan Working Group on Health of Women and Children has observed that ‘Shortage of Anesthetists is perhaps the single most important cause of inadequacy of emergency care in Government Hospitals particularly in rural areas’. The Planning Commission’s ‘Steering Committee on Family Welfare – 10th Plan’ have recommended that ‘Posts of specialists in CHCs should be filled; reorientation, skill up-gradation and re-deploying existing manpower should be the method used to fill critical gaps’.

With this in view, the Government of India formed a Core Group of Experts in June 2002 with the Professor of Anesthesia and Head, Casualty and Emergency Services, AIIMS New Delhi, as Chairman and DDG (MH) as the Convener. The group consists of experts in Anesthesia with representation from the National Institute of Health and Family Welfare, WHO and EC. The terms of reference of the group were to develop a curriculum and course content for a short course for MBBS Doctors to be trained in Anesthesia for Emergency Obstetric Care; develop criteria for certification competency and suggest norms for

identification of training institutions, requirement for training etc. The present training course, “Life saving anesthetic skills for emergency obstetric care” has been designed by the core group. The group also considered the Medical Council of India curriculum on anesthesia during internship of MBBS doctors to identify the key skill areas for the present course.

The purpose of this course is to provide the selected MBBS doctors with necessary skills and competencies to manage cases requiring life saving emergency obstetric care at the First Referral Units.

II. Aim and objectives of the course

2.1. Knowledge based specific objectives

After under going the training course the trainees are expected to describe

- Anatomy of upper airway and spine, use of the knowledge of anatomy while performing endotracheal intubations, spinal and epidural blocks, how to reassess and retry if encountering difficulty during the above procedures, anatomical differences between pregnant and non-pregnant patient and physiological changes of pregnancy
- Direct and indirect effects of anesthetics on the fetus, benefits and risks of various anesthetic techniques to the mother, how to ascertain which drugs to be used in which anesthetic situation, how to decide the dosage and route of administration of the drug , how to judge the effects and complications of these drugs and how to manage their complication if and when they occur.
- Basic working principle of anesthesia machine, various safety mechanisms incorporated in the machine for a safe delivery of anesthesia and ways to check the integrity and functions of the various component of the machine before using it.
- How to prepare patient, take history and do examination and theater preparation.
- Guidelines regarding administration of general or regional anesthesia for emergency obstetric procedure and important considerations to be kept in mind while anaesthetizing a patient for emergency caesarean section.
- Various systemic diseases that may be associated with pregnancy, clinical presentation, diagnosis and emergency management and how to make a decision regarding shifting of the patient to a referral center.
- Various types of trauma that a pregnant lady may commonly sustain, how the management of such a patient may differ from that of a non-pregnant patient and how to resuscitate a pregnant trauma victim.
- Method of evaluation of the airway, how to diagnosis a difficult airway and to weigh the advantages of proceeding for anesthesia at the FRU, airway adjuncts available and their usage, the technique of intubations and difficult intubations drill.
- Legal aspect of the medical profession.

2.2. Skills based specific objectives

After under going the training course the trainees are expected to acquire skills in the following areas

- Pre-anesthetic examination of patient (history, physical examination, systemic examination, interpretation of test results, deciding about the type of anesthesia which can be best given to the patient, pre-anesthetic preparation (physical, psychological, legal aspects like consent, drugs etc)
- Use of various types of anesthetic and support equipment usually required at FRU level, preparation of equipment before surgery and their maintenance and upkeep after surgery
- Resuscitation of new born and mother
- Perform laryngo-scropy and endo-tracheal intubation
- Administration of general anesthesia and regional anesthesia, their maintenance during surgery and management of patient during and after surgery

III. Curriculum for course

3.1. Duration of course

The total duration of the course will be 18 weeks. For 8 weeks trainees will be trained in the obstetrics emergency in the operation theatre and for 4 weeks in general emergency at the Casualty of AIIMS New Delhi. The trainees will be sent to CHC Ballabgarh (Field practice area of AIIMS) for 2 weeks to complete their rural training. Then for 4 weeks the trainees will work in the selected district hospital in their respective states, under supervision of the supervisor.

3.2. Number and Nature of Trainees

The batch size will be of 8-10 trainees. The trainees will be MBBS doctors, who are in state government services for at least 5 years and should not have less than 10 years service left in the state services.

The concerned State Government will give a commitment that the trained doctors would be posted in the selected FRUs after training for at least 4-5 years.

3.3. Methodology

For the first pilot course the initial training will be done at AIIMS, New Delhi for a few weeks and then the trainees will be posted in the state medical college and selected district hospital for hands on experience.

The training methods used will be initial orientation by lecture discussion, practice in dummy, followed by intensive hands-on practical training under supervision of the faculty from the department of anesthesia.

The trainees will be required to maintain log book for the activities completed during their placement in various units and the level of competencies acquired by them will be certified and indicated in the log book by the immediate supervisor. The tasks which are not satisfactory will be repeated till the trainees have acquired the desired level of competencies.

3.4. Learning material

- The trainees will be provided with modules specially prepared for the course.
- Besides the practical hands-on experiences provided to trainees during their placement at various units in the hospitals, case studies, video tapes, interactive CDs and simulated practice on various models will be used during the training.

3.5. Contents

The contents of the various modules are as follows:

Module-I, Anatomy as relevant to anesthesia for emergency obstetric care

Anatomy of larynx, airway assessment by physical examination, changes in the respiratory system of a pregnant patient, anatomy for spinal puncture and anatomy of epidural space.

Module-II, Physiological changes during pregnancy as relevant to anesthesiologist

Body weight and composition, metabolism, respiration, heart and circulation, hematology and coagulation, gastrointestinal system, liver and gall bladder, renal system, nervous system, endocrine system, musculoskeletal system, immune system and anesthetic implications

Module-III, Pharmacology

Inhalation anesthetic agents (Entonox, Halothane, Isoflurane , Sevoflurane), Intravenous anesthetic agents (Thiopentone, Ketamine, Propofol), Local anesthetics (Bupivacaine, Lignocaine, Adjuvants), Neuromuscular blocking agents (Suxamethonium, Pancuronium, Vecuronium, Rocuronium, Reversal agents), Narcotics (Pentazocine, Pethidine, Morphine, Fentanyl), Non-narcotics (Diclofenac, Tramadol, Ketorolac), Adjuvant diverse (Antacids/antiemetics/prokinetics, Benzodiazepenes, Sodium citrate, H2 blockers, Ondansetron, Metoclopramide, Cisapride) and Oxytocics, vasoactive agents (Mephenteramine, Ephedrine)

Module-IV, Anesthesia machine

Anesthetic machine, components, cylinders, piped medical gases and vacuum systems, Yoke assembly, Pin index system, pressure gauge, pressure regulator, oxygen pressure failure warning devices, flow meters, oxygen ratio control devices, oxygen analyzer, continuous flow anesthesia machine, safety measures to prevent delivery of excessive anesthetic concentration, safety measures to prevent development of excessive pressure on the machine and breathing systems, check out procedure to be followed everyday before using the machine and anesthesia breathing circuit

Module-V, Patient preparation, pre-medication and theatre preparation

Patient preparation, quick assessment of patient, psychological preparation, administrative consideration and theatre preparation

Module-VI, General and regional anesthesia

Pre-anesthesia check up, regional anesthesia (choice of the drugs for the regional anesthesia, individual techniques, contraindications to regional techniques, management of complications of regional anesthesia), general anesthesia (things to remember before starting general anesthesia, techniques), anesthesia for labour and vaginal delivery (drugs that can be used for vaginal delivery , inhalation anesthetic for vaginal delivery , regional anesthesia techniques for vaginal delivery and drugs that can be used in spinal and epidural block

Module-VII, The parturient with systemic disease

Hypertensive disorders of pregnancy, pregnancy and diabetes mellitus with medical and anesthetic management, anesthetic management of pulmonary disease in pregnant patient, preoperative evaluation, antepartum and post partum haemorrhage, common haematologic and coagulation disorders in pregnancy, anesthetic management of patients with liver disease, amniotic fluid embolism, pregnancy and renal disease, anesthetic management of pregnant patient with preterm labour, pregnancy and heart disease.

Module-VIII, Trauma and pregnancy

Anatomic changes in pregnancy, physiologic changes in pregnancy, initial assessment, secondary assessment, maternal assessment, fetal assessment, types of trauma during pregnancy and their management, algorithm for trauma management in pregnancy, unique problems of CPR in pregnancy

Module-IX, Difficult air way in obstetric

Certain basic considerations (definition of difficult intubation, basic technique of laryngoscopy), preoperative assessment of airway (global , regional , radiologic), grading of glottic exposure, airway assessment- deductions derived, contents of the difficult airway cart, certain useful airway equipment (face masks, mechanical airway, LMA, combitube, laryngoscopes), needle cricothyrotomy and difficult intubation drill (flow chart)

Module-X, Neonatal and adult resuscitation

Patho-physiology of asphyxia and resuscitation

Module-XI, Ethical and legal issues and consumer protection

Ethical considerations, legal considerations and the consumer protection act, duties of an anesthetist, legal protection to medical practitioners and negligence in medical practice

3.6. Assessment

The trainees will be placed under the direct supervision of faculty members from the department of anesthesia. The performance of the trainees will be periodically monitored and formal feedback will be given to trainees. At the end of the training course formal terminal assessment will be done and proper certificate will be issued to the successful trainees. Those who could not clear the terminal examination will be offered another chance to appear in the terminal assessment.

3.7. Record Keeping

The trainees will keep record for all their activities on a log book and complete the specified number of activities

The attendance records will be maintained and kept with supervisor.

The leave benefits will be as per the norms.

The records related to certification will be maintained at the training institution as per the guidelines.

3.8. Budget

The budget for the training will be met by the Government of India as per the project guidelines.

3.9. Facilities at first referral units

The selected FRUs in the states will be strengthened by providing equipment and drugs as per the details given in the Annexure.

3.10. Facilities for trainees

The trainees will be provided with hostel facilities on payment basis. The per diem to the training will be paid as per the project guidelines.

This per diem will be paid for one time and those trainees who do not complete the training will be required to repeat the training at their own expenses.

3.11. Incentives for trainers

The strengthening and honorarium to the concerned facility and staff involved in training will be given as per the project guidelines.

IV. Annexure

Annexure-4.1

RCH Programme List of RCH Drugs For CHCs/FRUs (Emergency Obstetric Care Drugs)

S. No	Product	Strength	Formulation unit	Annual quantity per FRU
1	Halothane BP	0.01% w/w thymol	200 ml. per bottle	5 Bottles
2	Atropine Sulphate Injection	600 ug/ml	Inj. 1 ml /amp.	50 Ampoules
3	Thiopentone Sodium IP	500 mg/ml	Inj. 5 ml. per vial	100 Ampoules
4	Bupivacaine Hydrochloride Inj. IP	5 mg/ml	Inj. 20 ml. per vial	50 Vials
5	Lignocaine Hydrochloride Inj. IP	5% w/v/vial	Inj. 5 ml. per vial	50 Vials
6	Lignocaine Hydrochloride Inj. IP	2% w/v/vial	Inj. 30 ml/vial	50 Vials
7	Diazepam Injection	5 mg/ml	Inj. 2 ml /amp.	100 Ampoules
8	Pentazocine Lactate Injection	30 mg/ml	Inj. 1 ml /amp.	100 Ampoules
9	Dexamethasone Sodium Phosphate Inj. IP	4 mg/ml	Inj. 1 ml /amp.	100 Ampoules
10	Promethazine hydrochloride Inj. IP	25 mg/ml	Inj. 2 ml /amp.	50 Ampoules
11	Nifedipine Capsules IP	10 mg/cap	Capsule	500 Capsules
12	Mephentermine Sulphate Inj. IP	15 mg/ml	Inj. 1 ml. per vial	25 Ampoules
13	Dopamine hydrochloride Inj. USP	40 mg/ml	Inj. 20 ml. per vial	25 Vials
14	Digoxin IP Tab	250 ug/tab	Tablet	500 Tablets
15	Digoxin Inj. IP	250 mg/ml	Inj. 2 ml. per amp.	50 Ampoules
16	Methyldopa Tablet IP	250 mg/tab	Tablet	500 Tablets
17	Frusemide Tab. IP	40 mg/tab	Tablet	500 Tablets
18	Frusemide Inj. USP	10 mg/ml	Inj. 2 ml. per ampoule	100 Ampoules
19	Ampicillin Sodium Inj. IP	250 mg/vial	Inj. 5 ml. per vial	1000 Vials
20	Gentamycin Sulphate Inj. IP	40 mg/ml	Inj. 2 ml. per ampoule	1000 Ampoules
21	Amoxicillin Trihydrate Capsules	250 mg per cap	Capsule	2000 Capsules
22	Norfloxacin Tab. IP	400 mg/tab	Tablet	2000 Tablets
23	Doxycycline Hydrochloride Capsule IP	100 mg per capsule	Capsule	1000 Capsules
24	Tinidazol Tablets	500 mg per tablet	Tablet	1000 Tablets
25	Ergometrine Maleate Inj. IP	500 ug/ml	Inj. 1 ml. ampoule	500 Light Resistant Amber colour Ampoules

S. No	Product	Strength	Formulation unit	Annual quantity per FRU
26	Oxytocin Inj. IP	10 units per ml. Inj.	Inj. 1 ml. ampoule	500 Ampoules
27	Etophylline Anhydrous Theophylline	84.7 mg. per ml. / 25.3 mg. per ml.	Inj. 2 ml/ ampoule	100 Ampoules
28	Hydrocortisone Acetate IP	25 mg/ml	Inj. 2 ml. per vial	100 Vials
29	Salbutamol Sulphate Tablets	2 mg per tab.	Tablet	1000 Tablets
30	Adrenaline Bitartrate Injection	1 mg per ml	Inj. 1 ml./ amp.	100 Ampoules
31	Succinyl Choline Chloride Inj. IP	50 mg/ml	Inj. 10 ml. per vial	30 Vials
32	Ketamine Hydrochloride Inj. IP	10 mg/ml	Inj. 10 ml. per vial	50 Vials
33	Diazepam Tablets	5 mg. per. tab.	Tablet	250 Tablets
34	Vecuronium Bromide BP	4 mg/ml	Inj. 1 ml. ampoule	500 Ampoules
35	Pancuronium Bromide Inj. BP	4 mg/amp	Inj. 2 ml. ampoule	500 Ampoules
36	Neostigmine Methyl Sulphate Inj. IP	0.5 mg/ml	Inj. 1 ml. ampoule	1000 Ampoules
37	Benzyl Pencillin Inj. IP	300 mg/vial	Vial	2000 Vials
38	Fortified Procaine Penicillin Inj. IP	Procaine Penicillin 300mg (3,00,000 IU) Benzyl Penicillin 60mg (1,00,000 IU)	Vial	1000 Vials
39	Benzathine Benzyl Penicillin Inj. IP	6 lakhs units / vial	Inj. Vial	100 Vials
40	Cotrimoxazole Tabs. Trimethoprim IP Sulphamethoxazole IP Tablets	Trimethoprim IP 80 mg Sulphamethoxazole IP 400 mg	Tablet	5000 Tablets
41	Phenoxymethyl Penicillin Potassium Tablets	130 mg per tab	Tablet	3000 Tablets
42	Nalidixic Acid Tablets	500 mg per tablet	Tablet	3000 Tablets
43	Cloxacillin Sodium Inj. IP	250 mg/vial	Inj. Vial	100 Vials
44	Metronidazole IV IP	5 mg/ ml	Inj. 100 ml bottle	500 Bottles
45	Ergometrine Maleate Tab. IP	250 ug/tab	Tablet	2000 Tablets
46	Chloroquin Phosphate Inj. IP	40 mg/ml	Inj. 5 ml. ampoule	50 Ampoules
47	Phenytoin Sodium Tab IP	100 mg/tab	Tablet	150 Tablets
48	Hydroprogesterone Hexazoate Inj USP	250 mg/ml	Inj. 2 ml. amp.	100 Ampoules
49	Norethisterone Acetate BP	5 mg/tab	Tablet	1000 Tablets
50	Insulin Inj. IP	40 units /ml	Inj. 10 ml. per vial	10 Vials

S. No	Product	Strength	Formulation unit	Annual quantity per FRU
51	Insulin Zinc Suspension Inj. IP		Inj. 1 ml. Vial	10 Vials
52	Sodium Bicarbonate Solution BP	5% w/v	Inj. 10 ml. amp.	100 Ampoules
53	Magnesium Sulphate Inj. BP	50% w/v	Inj. 10 ml. per amp.	50 Vials
54	Phenytoin IP	50mg. Per ml.	Inj. 5 ml. per amp.	50 Ampoules
55*	Oxygen IP		Cylinder Bulk	2 with 24 fillings per year
56*	Sodium chloride Solution BP		Inj. 500 ml pl. pouch	1000 pl. pouches
57*	Dextrose Inj. Ip. I.V.Solution		500 ml pl. pouch	250 pl. pouches
58*	Nitrous oxide IP		Cylinder	2 cylinders 10 refillings per year
59*	Plasma Volume expander brand name: Haemaccel		500 ml.	10 Bottles
60*	Water for Injection		Inj. 5 ml. Glass amp.	1000 Ampoules
61*	I.V.Infusion Sets			100
62*	Intracath cannula (size- 16,18,20,22)			120 each size
63*	Syringes & Needles (Glass) size- 1ml, 2ml, & 5ml			@ 5,10,100
64*	Compound Sodium Lactate		500 ml pl. pouch	1000 pl. pouches
65*	Gloves (size-6, 7,& 8)			@2500,2500&1000

* Marked items will be supplied through MSDs upto the District level consignees.

List of RCH Drugs For Primary Health Centre (PHC) (Essential Obstetric Care Drugs)

S. No.	Product	Strength	Formulation Unit	Annual Quantity Per PHC
1	Diazepam Inj. IP	5 mg/ ml	Inj. 2 ml per amp.	50 Ampoules
2.	Lignocaine Hydrochloride Inj. IP	2% w/v	30 ml per vial	10 Vials
3	Pentazocine Lactate Inj. IP	30 mg/ ml	Inj. 1 ml /Ampoule	50 Ampoules
4	Dexamethasone Sodium Phosphate Inj. IP	4 mg/ ml	Inj. 2ml /Amp.	100 Ampoules
5	Promethazine Hydrochloride Inj. IP	25 mg/ ml	Inj. 2 ml. Ampoule	50 Ampoules
6	Methyl Ergometrine Maleate Inj. IP	200 ug/ml (0.2mg/ml)	Inj. 1 ml. Ampoule	150 Ampoules
7	Etophylline BP Plus Anhydrous Theophylline IP Combination	84.7 mg/ ml 25.3 mg/ ml	Inj. 2 ml. Ampoule	100 Ampoules
8	Aminophylline Inj. IP	25 mg/ ml	Inj. 10 ml. Ampoule	50 Ampoules
9	Adrenalin Bitartrate Inj. IP	1 mg/ ml	Inj. 1 ml. Ampoule	50 Ampoules
10	Methylergometrine Maleate Tab. IP	125 ug/ tab	Tablet	500 Tablets
11	Diazepam Tab. IP	5 mg/ tab	Tablet	250 Tablets
12	Paracetamol Tab. IP	500 mg/ tab	Tablet	1000 Tablets
13	Co-trimoxazole tabs - Combination of - Trimethoprim IP - Sulphamethoxazole IP	80 mg/ tab 400 mg/ tab	Tablet	2000 Tablets
14	Amoxicillin Trihydrate IP	500 mg/ cap.	Capsule	2500 Capsules
15	Doxycycline Hydrochloride Capsule IP	100 mg/cap.	Capsule	500 Capsules
16	Tinidazole IP	500 mg/ tab	Tablet	1000 Tablets
17	Salbutamol Sulphate IP	2 mg/ tab	Tablet	1000 Tablets
18	Phenoxyethyl Penicillin Potassium IP (PENICILLIN V)	130 mg/ tab	Tablet	2000 Tablets
19	VIT.K3 (Menadione Inj.) USP	10 mg/ ml	Inj. 1 ml. Ampoule	200 Ampoules
20	Atropine Sulphate Inj. IP	600 ug/ ml	Inj. 1 ml. Ampoule	50 Ampoules
21	Nalidixic Acid Tab. IP	500 mg/ tab	Tablet	1000 Tablets
22	Oxytocin Inj. IP	5 I.U./ml	Inj. 1 ml. Ampoule	100 Ampoules
23	Phenytoin Sodium Inj. IP.	50 mg/ 2ml	Inj.5 ml. per vial	25 Ampoules
24	Chlorpromazine Hydrochloride Inj.	25 mg/ ml	Inj. 2 ml. Ampoule	50 Ampoules
25	Cephalexin Cap. IP	250 mg/cap.	Capsule	1000 Capsules
26*	Compound Sodium Lactate Inj. IP.		500 ml plastic. pouch	200 pl. pouches
27*	Dextrose Inj. IP I.V. solution	0.05	Inj. 500 ml pl. pouch	50 pl. pouches
28*	Sodium chloride Inj. IP. I.V. solution	0.9% W/V	Inj. 500 ml pl. pouch	100 pl. pouches

Anaesthesia Equipment Kit for FRUs

Specifications for:

Anaesthesia Machine – One

- ◆ Boyle type Anesthesia Machine made of stainless steel body with antistatic wheel and facility to lock.
- ◆ Two A type cylinders for oxygen and nitrous oxide with pressure reducing valve.
- ◆ Pressure gauge to monitor the pressure of gases in cylinders.
- ◆ Rota meter with bob in for accurately calculating the flow of gases.
- ◆ Two vaporizers one Boyle bottle for Ether and one fluted for Halothane.
- ◆ Breathing circuit:-Magill and Bains two sets of each.
- ◆ Preferably with soda lime canister with circle absorber and close circuit.
- ◆ Guarantee for two years and after sales service and spares for five years.

Pulse Oximeter – One

- ◆ To monitor the oxygen saturation.
- ◆ Give numerical as well as graphic display.
- ◆ Alarms for lower limits of saturation, disconnection and low signal etc.
- ◆ Should have memory and trend for 8 hours.
- ◆ Should have battery back up for two hours.
- ◆ Guarantee for two years and after sale service and spares for five years.

Laryngeal Mask Airway

- ◆ Securing the airway for short surgical procedures/difficult airway and intubation.

- ◆ Size 3.0 & 4.0 (one of each size)
- ◆ Should be able to autoclave.

Ambu Bag- Two

- ◆ Self-inflating, silicon bag with provision to give oxygen along with non-rebreathing valve for resuscitation. Size – Adult.

Suction Machine – One

- ◆ Electrically operated, heavy duty with two bottles of five litre capacity each. Machine should be able to generate negative pressure upto 600 mm of Hg.

Needle, Spinal, Stainless, Set of 4 of each size – One set each

- ◆ Straight bevel needle with stylet for lumbar puncture, steel, autoclavable.
- ◆ Size 22G, 24G, 25G.
- ◆ Length – 10 cm.

I/ V Cannulae – twelve of each size

- ◆ I/V Teflon Cannula with injection port.
- ◆ Sizes – 16G, 18G, 20G, 22G.
- ◆ Silicon valve for intermittent injection with a syringe.
- ◆ Supplied with a male Luer lock obturator.

I/V Set – Forty eight in No.

- ◆ Plastic tubing
- ◆ With chamber.
- ◆ With Luer lock to connect to I/V Cannula.

Face Mask – Two each

- ◆ Low pressure seal: soft, pliable, air filled.
- ◆ Traditional Anatomical Shape.
- ◆ Removable hook ring for head straps.
- ◆ Black Rubber.
- ◆ Sizes: 2, 3, 4.

Airway – Two of each size

- ◆ Sizes: 2, 3, 4.
- ◆ Integral hard bite blade.
- ◆ Transparent Plastic.

Suction Catheter

- ◆ Smooth low friction frozen surface tubing.
- ◆ Open end with one lateral eye.
- ◆ Length -53cm
- ◆ Sizes FG. 6,8,10,12,14,16,18.

Urinary Catheter

Stylet for Endotracheal Intubation

- ◆ Malleable, blunt tip, for 6 mm ID endotracheal tube.

Laryngoscopes

- ◆ Mackintosh Laryngoscope
- ◆ Curved Blade
- ◆ Blade sizes-small, medium, large and extra large.
- ◆ Handle with space for batteries

- ◆ Handle should have serrations
- ◆ Light source-bulbs.

Endotracheal Tubes

- ◆ Partex Type
- ◆ Oral or nasal use
- ◆ High volume low pressure cuff
- ◆ Sizes should range from internal diameter of 2.5, 3.0, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5 mm.
- ◆ Pilot balloon with unidirectional valve

Magill Forceps

- ◆ Stainless Steel body.
- ◆ Two sizes-small and large.

Essential new born care equipment

Essential New Born Care Equipment Kit For PHCs		
S.No.	Item Description	Quantity
1	Infant Resuscitation Bag	1
2	Infant Weighing Scales	1
3	Bassinet	1
4	Foot Operated Suction	1
5	Lamp	1

Essential New Born Care Equipment Kit For FRUs		
S.No.	Item Description	Quantity
1	Infant Radiant Warmer with bassinet	2
2	Infant Resuscitation Bag	2
3	Oxygen Hoods	1
4	Infant Weighing Scales	1
5	Phototherapy Lamps / Units	1
6	Bassinet	2
7	Foot Operated Suction	2

Essential New Born Care Equipment Kit For District Hospitals		
S.No.	Item Description	Quantity
1	Infant Radiant Warmer with bassinet	4
2	Infant Resuscitation Bag	3
3	Oxygen Hoods	2
4	Infant Weighing Scales	3
5	Phototherapy Lamps / Units	1
6	Layngoscope	2
7	Endotracheal Tubes	100
8	Bassinet	2
9	Foot Operated Suction	2

MCI Curriculum on Anesthesia

During Internship

1. As part of internship in medicine

Acquire skills in

- Conducting CSF tap (Adults and Children), installing of airway tube, Oxygen administration (Medicine).

2. As part of internship in surgery

- Maintain patent airway and resuscitate patient with cardio respiratory failure (Surgery).

3. As part of internship in anesthesia (15 days-optional),

An intern shall acquire skills and attitude to:

- Perform PAC and prescribe PAC medication
- Perform venepuncture and set up drip
- Perform laryngoscopy and endotracheal intubations
- Perform LP, spinal anesthesia, simple nerve blocks
- Conduct simple GA procedures under supervision
- Monitor patients during Anesthesia and post-operative period, recognize and treat complications in post-op period
- Recognize and manage problems with emergency anesthesia
- Perform C.P.B.R correctly, including recognition of Cardiac arrest.
- Maintain Anesthesia Records

Cases and role plays for use in training

- **Role play:** interpersonal communication during emergency obstetrics care
- **Case study:** shock
- **Case study:** pre-operative breathing difficulty
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- **Case study:** intra-operative hypotension
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- **Role play:** communicating with the patient during spinal anesthesia
- **Case study:** normal post-operative evaluation and care
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- **Case study:** intra-operative collapse
- **Case study:** post-operative collapse

Role Play : Interpersonal Communication during Emergency Care

Instructions

The trainer will select three participants to perform the following roles: skilled provider, postpartum patient and support person. The three participants participating in the role play should take a few minutes to prepare for the activity by reading the background information provided below. The remaining participants, who will observe the role play, should at the same time read the background information.

The purpose of the role play is to provide an opportunity for participants to appreciate the importance of good interpersonal communication skills when providing care for a woman who experiences a postpartum complication.

Participant Roles

- Provider: The provider is an experienced midwife who has good interpersonal communication skills.
- Patient: Mrs. Sita Devi is 20 years old. She gave birth at home 2 hours ago.
- Support person: Village traditional birth attendant (TBA) who attended Mrs. Sita Devi's birth.

Situation

Mrs. Sita Devi has been brought to the health center by the TBA because she has been bleeding heavily since childbirth 2 hours ago. The duration of labor was 12 hours and the TBA reports that there were no complications. The midwife has assessed Mrs. Sita Devi and treated her for shock and atonic uterus. Although the bleeding has decreased since Mrs. Sita Devi first arrived at the health center, her uterus is not well contracted, despite fundal massage and the administration of oxytocin. Mrs. Sita Devi, who is very frightened, must be transferred to the district hospital for further management. The TBA is anxious and feels guilty about Mrs. Sita Devi's condition. The midwife must explain the situation to Mrs. Sita Devi and the TBA and attempt to provide emotional support and reassurance as preparations are made for transfer.

Focus of the Role Play

The focus of the role play is the interpersonal interaction among the midwife, Mrs. Sita Devi and the TBA, and the appropriateness of the information provided and the emotional support and reassurance offered.

Discussion Questions

The trainer should use the following questions to facilitate discussion after the role play:

- How did the midwife explain the situation to Mrs. Sita Devi and the TBA and the need to transfer Mrs. Sita Devi to the district hospital?
- How did the midwife demonstrate emotional support and reassurance during her interaction with Mrs. Sita Devi and the TBA?
- What verbal/nonverbal behaviors did Mrs. Sita Devi and the TBA use that would indicate they felt supported and reassured?

Case study: Shock

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Rita is 34 years old. She had her fifth normal childbirth two hours ago. She lay in bed after she delivered a normal healthy male neonate and was examined once after the childbirth. She was apparently fine and did not complain of anything.

She got up from the bed to go to the toilet but fainted and fell back on the bed.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will you include in your initial assessment of Mrs. Rita and why?
- What particular aspect of Mrs. Rita's physical examination will help you make a diagnosis or identify her problems/needs and why?
- What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. Rita. and why?

Diagnosis (identification of problems/needs)

You have completed your assessment of Mrs. Rita and your main findings include the following:

Mrs. Rita's pulse is 130 beats per minute, her blood pressure is 70/50 mm Hg and her respiration rate is 30 breaths per minute. Her hands and feet are cold, and she seems to have conjunctival pallor. She is semiconscious and responding to command. Mrs. Rita's abdomen is soft and not tender. Her hemoglobin level is 7 g/dl. Vaginal bleeding is present.

- Based on these findings, what is Mrs. Rita's diagnosis (problem/need) and why?

Care Provision (planning and intervention)

- Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. Rita and why?

Evaluation

Three hours later following the initiation of treatment, Mrs. Rita's blood pressure is 110/70 mm Hg. She is conscious; her pulse is 110 beats per minute and her respiration rate is still 30 breaths per minute. Her hemoglobin level is 6 g/dl.

- Based on these findings, what is your continuing plan of care for Mrs. Rita and Why?

Case Study: Pre-Operative Breathing Difficulty

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Seema Singh, a 35-year old female, gravida 2, para 2, 38 weeks of gestation has been admitted for management of respiratory infection and asthmatic attacks. Previously, Mrs. Seema Singh had had a normal childbirth and she has no other medical disease apart from a history of bronchial asthma. Suddenly, Mrs. Seema Singh starts having labor pains with signs of fetal distress. The surgeon has decided to perform a cesarean section. You have been asked to perform the anesthetic evaluation of this patient for the planned cesarean section.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What relevant history would you need from this patient as part of your anesthetic evaluation?
- What are the salient points relevant to anesthesia provision that should be recorded in your clinical examination?

Planning for Anaesthesia

- Based on your findings, which anaesthetic agent/technique would you choose for this patient and why?
- What are the major advantages of the anaesthetic agent/technique that you have chosen?
- What are the major disadvantages of this anaesthetic agent/technique? What necessary steps would you take to ensure the safety of the patient?

Monitoring and Evaluation

- What measures would you take for this patient during the recovery period?

Case study: Obstructed Labor

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Shakuntala Devi, 18 years old, primi gravida, married one year was admitted 12 hours ago with labour pains of 20 hours duration. She is of short stature. Her bag of waters ruptured 18 hours ago. The obstetrician diagnosed the case as cephalo-pelvic disproportion, and a decision was made to perform a lower segment cesarean section (LSCS). You have been asked to perform the anesthetic evaluation of this patient for the planned LSCS.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What relevant history would you need from this patient as part of your anesthetic evaluation.
- What are the salient points relevant to anesthesia provision that should be recorded in your clinical examination?
- What specific laboratory tests would you order/perform before deciding on the anesthetic agent/technique? Why?

Planning for Anesthesia

- Based on your findings, which anesthetic agent/technique would you choose for this patient and why?
- What are the major advantages of the anesthetic agent/technique that you have chosen?

Preparation of the Patient for LSCS

- What necessary steps would you take to ensure the safety of the patient for the chosen anaesthetic technique?
- What dosage of the anaesthetic agent would you use for this patient?
- What pre-medication would you use, if any, for this case?

Monitoring and Evaluation

- What are the main points to take note of during the patient's recovery period?

Case Study: Intra-Operative Hypotension

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you read the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each has developed.

Case study

Mrs. Sunita Devi is 25 years old, para 2. She is having a cesarean section under spinal anesthesia and has delivered a healthy female neonate. Her pulse rate is 90 beats per minute and her blood pressure 190 mm Hg. She is awake and comfortable on the operating room table. The surgeon has stitched the uterus and has started to close the peritoneum. Her pulse rate drops to 80 beats per minute and her blood pressure falls to 80/50 mm Hg. Her respiration rate is 20 breaths per minute.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will you include in your initial assessment of Mrs. Sunita Devi and why?
- What particular aspects of Mrs. Sunita Devi's physical examination will help you make a diagnosis or identify her problems/needs, and why?
- What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. Sunita Devi and why?

Diagnosis (identification of problems/needs)

You have completed your assessment of Mrs. Sunita Devi and your main findings include the following:

Mrs. Sunita Devi is conscious, not restless, her pulse rate is 60 beats per minute and her blood pressure is 75/50mm Hg. She is not sweating and does not have pallor. Her periphery is not cold. The surgeon is worried/happy that she is not bleeding as patients normally do. Her hemoglobin level is 9.8 g/dl.

- Based on these findings, what is Mrs. Sunita Devi's diagnosis (problem/need) and why?

Care Provision (planning and intervention)

- Based on your diagnosis (problem/ need identification), what is your plan of care for Mrs. Sunita Devi and why?

Evaluation

Half an hour later following the initiation of treatment, Mrs. Sunita Devi's pulse rate is 90 beats per minute and her blood pressure is 120/80 mm Hg. Her respiration rate is 20 breaths per minute. She is conscious, oriented and comfortable on the operating room table. Her periphery is warm.

- Based on these findings, what is your continuing plan of care for Mrs. Sunita Devi and why?

Case Study: Intra-Operative Bradycardia

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Saroj Devi is 18 years old and is having a cesarean section after a successful spinal anesthesia. She has just delivered a healthy male neonate. Her blood pressure has stayed at 130/80 mm Hg and her pulse rate at 90 beats per minute throughout the procedure. Mrs. Saroj Devi has just received 1,200 ml of NaCl. The anesthesia provider has noticed a gradual drop in her pulse rate during the last five minutes. Her pulse is now 52 beats per minute, her blood pressure 125/75 mm Hg and her respiration rate 20 breaths per minute. She is conscious and not cold peripherally.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will you include in your initial assessment of Mrs. Saroj Devi and why?
- What particular aspects of Mrs. Saroj Devi's physical examination will help you make a diagnosis or identify her problems/needs and why?
- What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. Saroj Devi, and why?

Diagnosis (identification of problems/needs)

You have completed your assessment of Mrs. Saroj Devi and your main findings include the following:

Mrs. Saroj Devi is slightly restless and conscious. Her pulse rate is 50 beats per minute, her blood pressure is 120/80 mm Hg and her respiration rate is 20 breaths per minute. Her hemoglobin level is 10 g/dl.

- Based on these findings, what is Mrs. Saroj Devi's diagnosis (problem/need) and why?

Care Provision (planning and intervention)

- Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. Saroj Devi and why?

Evaluation

Five minutes later following the initiation of treatment, Mrs. Saroj Devi's pulse rate is 110 beats per minute, her blood pressure is 125/80 mm Hg and her respiration rate is 24 breaths per minute. She is conscious, oriented and warm peripherally.

- Based on these findings, what is your continuing plan of care for Mrs. Saroj Devi, and why?

Role Play: Communicating With The Patient During Spinal Anesthesia

Instructions

Two participants in your group will assume (or be assigned) roles. One will be the anesthesia provider, the other a patient. Participants taking part in the role play should spend a few minutes reading the background information and preparing for the exercise. The observers in the group also should read the background information so that they can participate in the small group discussion following the role play.

Participant Roles

Anesthesia Provider: The anesthesia provider is calm and knowledgeable about spinal anesthesia. The provider has proficiently provided spinal anesthesia and the operation for lower segment cesarean section has already begun.

Patient: The patient is a 22-year-old woman with her first pregnancy. This is a full term pregnancy and her labor pain started about 8 hours back. On examination, serious fetal distress was observed and the obstetrician decided to perform a C-section. The woman is apprehensive about her surgery: This is the first time that she has ever had an operation.

Situation

Though the anesthesia provider explained to the woman before the operation that she will be anesthetized from the hip down, she is still unable to understand how that is possible. Furthermore, she is afraid that she will feel pain during the operation and she will not be able to tolerate the pain. She is also concerned about the well-being of her baby, because her doctor told her that she needed to have the operation because the baby was not feeling well.

Focus of the Role Play

The focus of the role play is on the interaction between the anesthesia provider and the patient. During the provider-patient interaction, the anesthesia provider needs to assess the intra-operative condition of the patient. The provider needs to reassure her that the spinal anesthesia is going to work fine and that she will not feel any pain during the operation. The provider also needs to counsel the patient truthfully regarding the condition of and outcome for the baby. The patient should remain concerned about her baby until the anesthesia provider provides her with sufficient information that will calm her down.

Observer Discussion Questions

- How did the anesthesia provider approach the patient?
- How might the anesthesia provider improve her/his interaction with the patient?
- Are the patient's concerns valid and legitimate? Did the anesthesia provider explain the situation and answer the patient's question in an appropriate and convincing manner?
- What other explanation could the anesthesia provider have given to the patient? What are other concerns the patient could have in a similar setting? How would you explain these situations to the patients?

Case Study: Normal Post-Operative Evaluation and Care

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Lajwanti is 32 years old. She was admitted to the hospital with postpartum hemorrhage after a normal childbirth at home. She had a retained placenta and was bleeding. Anesthesia, in the form of Ketamine IV, was administered to her. The retained placenta was removed under prolonged anesthesia and with difficulty. She also bled moderately in the operating room. Mrs. Lajwanti recovered from the anesthesia and was moved to the post-operative ward for monitoring, observation and evaluation.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will you include in your initial assessment of Mrs. Lajwanti and why?
- What particular aspects of Mrs. Lajwanti's physical examination will help you make a diagnosis or identify her problems/needs and why?
- What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. Lajwanti and why?

Diagnosis (identification of problems/needs)

You have completed your assessment of Mrs. Lajwanti and your main findings include the following:

Mrs. Lajwanti is awake but disorientated. She is maintaining her airway. Her pulse rate is 110 beats per minute, her blood pressure 95/70 mm Hg and her respiration rate 18 breaths per minute. There is no active bleeding vaginally. Her chest is clear. Her periphery is not cold. She has passed 100 ml of urine. Her hemoglobin level is 7 g/dl.

- Based on these findings, what is Mrs. Lajwanti's diagnosis (problem/need) and why?

Care Provision (planning and intervention)

- Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. Lajwanti and why?

Evaluation

Eight hours later following the initiation of treatment, Mrs. Lajwanti is still disorientated and maintaining her airway. Her pulse rate is 70 beats per minute and her blood pressure is 130/80 mm Hg. Her respiration rate is 20 breaths per minute. Her hemoglobin level is 9 g/dl. Her peripheral limbs are warm.

- Based on these findings, what is your continuing plan of care for Mrs. Lajwanti and why?

Case Study: Post-Operative Breathing Difficulty

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all the groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Satya Rani is 28 years old. She has delivered a healthy male neonate by an uneventful cesarean section under spinal anesthesia. She maintained her pulse rate and blood pressure. She has received 1,000 ml of Hartman's Solution and 1,000 ml of 5% dextrose water. Fifteen minutes after being moved to the post-operative ward, she is complaining of difficulty in breathing.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will you include in your initial assessment of Mrs. Satya Rani and why?
- What particular aspects of Mrs. Satya Rani's physical examination will help you make a diagnosis, identify her problems/needs, and why?
- What screening procedures/laboratory tests will you include (if available) in your assessment of Mrs. Satya Rani and why?

Diagnosis (identification of problems/needs)

You have completed your assessment of Mrs. Satya Rani and your main findings include the following:

Mrs. Satya Rani is restless and complaining of difficulty in breathing. Her pulse rate is 120 beats per minute and her blood pressure is 150/100 mm Hg. She is conscious and orientated. There are bilateral Rhonchi and wheezing on auscultation. Basal crepts are present in *both* the lungs. She is not cyanosed. Her hemoglobin level is 12 g/dl.

- Based on these findings, what is Mrs. Satya Rani's diagnosis (problem/need) and why?

Care Provision (planning and intervention)

- Based on your diagnosis (problem/need identification), what is your plan of care for Mrs. Satya Rani and why?

Evaluation

One hour later following the initiation of treatment, Mrs. Satya Rani is conscious and breathing comfortably. There are some Rhonchi and wheezing in both the lungs on auscultation. Basal crepts are still present. She has passed 100 ml of urine. Her pulse is 90 beats per minute and blood pressure 140/90 mm Hg.

- Based on these findings, what is your continuing plan of care for Mrs. Satya Rani and why?

Case Study: Antepartum Hemorrhage

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

Mrs. Sita Rani a 25-year-old female, gravida 3, para 2 at 37 weeks of gestation was admitted to the hospital with repeated frequent vaginal bleeding; the vaginal bleeding is quite serious now. No other past medical problems were noted. The obstetrician has decided to conduct an emergency cesarean section. Mrs. Sita Rani's pulse rate is 120 beats per minute, her blood pressure is 85/40 mm Hg and her respiration rate is 24 breaths per minute. You have been asked to perform the anesthetic evaluation of this patient for the planned emergency cesarean section.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What relevant history would you need from this patient as part of your anesthetic evaluation?
- What are the salient points relevant to anesthesia provision that should be recorded in your clinical examination?

Planning for Anesthesia and Surgery

- What would you do to prepare the patient for surgery?
- Based on your findings, which anesthetic agent/technique would you choose for this patient and why?
- What are the major disadvantages of this anesthetic agent/technique? What necessary steps would you take to ensure the safety of the patient?

Monitoring and Evaluation

- What measures would you take for this patient during the recovery period?

Case Study: Eclampsia

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

A 20-year-old primigravida with full term pregnancy was admitted for emergency cesarean section. This was her first visit to the health facility for this pregnancy. Her blood pressure was 200/120 mm of Hg, her pulse was 160/minute and she was unconscious. Her attendants/family gave a history of four to five fits at home about 6 hours back.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will be your assessment and why?
- What particular sign will help you to make your diagnosis and why?

Diagnosis

You have completed your assessment and your findings include:

No history of pre-existing CNS disorder

Clinical examination yielded the following findings:

- a. Patient responded to deep pain
 - b. Repeated monitoring showed blood pressure and pulse rate to be persistently high
 - c. On auscultation the chest was clear
 - d. Urine output shows 15 ml of urine in 1 hour
- What other laboratory investigations would you order/perform to plan your intervention for this case?

Planning and Intervention

- How would you prepare the patient for surgery?
- What anesthetic technique will you plan for this case?

Monitoring and Evaluation

- What measures would you take for this patient during the recovery period?

Case Study: Intra-Operative Collapse

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

A 25-year-old pregnant woman, para one with full term pregnancy, was suffering from pregnancy induced hypertension (PIH). Her PIH was controlled with antihypertensive drugs. The woman developed fetal distress and the obstetrician decided on doing a cesarean section for the fetal distress. The anesthesia provider decided to perform the operation on Spinal Anesthesia and administered 12 mg of Bupivacaine intrathecally. After the anesthesia was administered, the woman's blood pressure dropped dramatically and she became unconscious.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will be your first assessment of the woman and why?

Diagnosis

You have completed your assessment and your findings include:

The patient is not breathing.

The carotid pulse cannot be palpated.

- Based on the findings that the patient is unconscious, not breathing and the absence of carotid pulse, what is your diagnosis?

Plan of Action

- Based on your finding, what is your plan of action?

Monitoring and Evaluation

- What measures would you take for this patient during the recovery period?

Case Study: Post-Operative Collapse

Instructions

Read and analyze this case study individually. When the others in your group have finished reading it, answer the case study questions. Consider the steps in clinical decision-making as you answer the questions. The other groups in the room are working on the same or a similar case study. When all groups have finished, we will discuss the case studies and the answers each group has developed.

Case Study

A 25-year-old primigravida was referred from a primary health care center as a case of prolonged labor. Prolonged labor with fetal distress was diagnosed, and an emergency cesarean section was performed. At the end of the operation the baby was delivered in stable condition and the mother's vital signs were stable. An hour after she was transferred to the post-operative ward the patient developed sudden hypotension and collapsed. The doctor on duty was called to attend the case. Presently, you are the anesthesia provider on duty and though you did not provide anesthesia to this patient, the doctor on duty has called on you to help manage the case.

Assessment (history, physical examination, screening procedures/laboratory tests)

- What will be your initial assessment and why?
- What particular aspects of the patient's physical examination will help you make your diagnosis?
- What background information and documents would you like to review to come to a diagnosis?

Diagnosis

You have completed your assessment and your findings include:

No history of pre-existing CNS disorder

Abdomen was soft and nothing remarkable

Clinical examination yielded the following findings:

The patient looked pale and is shivering

There was shortness of breath

Pulse rate - 130/minute and weak

Blood pressure - systolic blood pressure 80 mm of Hg and diastolic blood pressure could not be recorded

Temperature - 98 degrees F

Her preoperative chart showed nothing remarkable except that she had marked pallor.

- Based on your findings what is your differential diagnosis for the woman's condition?
- What is your final diagnosis?
- What other laboratory investigations would you order/perform to plan your intervention for this case?

Planning and Intervention

- Based on your diagnosis, what is your plan of care for the patient?

Monitoring and Evaluation

The patient shows good recovery and she is doing well now.

- Based on this outcome, what advice would you give to the patient?