I

GENERAL ORIENTATION AND LABOR AND DELIVERY OVERVIEW

This section presents common occurrences during labor and delivery (L&D). It covers definitions, everyday terminology, and common actions with which you should become totally familiar. The section presents a review of medications you may come in contact with on a daily basis, including their indications and common dosages. Remember, in the L&D unit, you have two patients and your actions must take both patients into account.

Medications to Know—generic (trade)

- Betamethasone (Celestone)
- Butorphanol (Stadol)
- Calcium gluconate
- Carboprost (Hemabate)
- Citric acid/sodium citrate (Bicitra)
- Dexamethasone
- Dinoprostone (Cervidil)
- Ephedrine
- Erythromycin ophthalmic ointment
- Hydralazine
- Indomethacin (Indocin)
- Insulin
- Labetalol (Trandate)
- Lidocaine (Xylocaine)
- Magnesium sulfate
- Meperidine (Demerol)
- Methylergonovine (Methergine)
- Misoprostol (Cytotec)
- Morphine
- Nalbuphine (Nubain)
- Naloxone
- Nifedipine (Procardia)
- Oxytocin (Pitocin)
- Promethazine (Phenergan)
- Rho(D) immunoglobulin, human (IGIM) (RhoGAM)
- Terbutaline
- Vitamin K (phytonadione)

Abbreviations to Learn

- AFI—amniotic fluid index
- AFP—alpha fetoprotein
- AROM—artificial rupture of membranes
- CVS—chorionic villa sampling
- DKA—diabetic ketoacidosis
- EDC—estimated date of confinement
- EFW—estimated fetal weight
- FHR—fetal heart rate
- GBS—group B *Streptococcus*
- GC/CT—gonorrhea/*Chlamydia trachomatis*
- GDM—gestational diabetes mellitus

- HBsAg—hepatitis B surface antigen
- ISE—internal scalp electrode
- IUPC—intrauterine pressure catheter
- IUFD—intrauterine fetal demise
- LGA/SGA—large for gestational age/small for gestational age
- LMP—last menstrual period
- MVU—Montevideo units
- NSVD—normal spontaneous vaginal delivery
- PPROM—preterm premature rupture of membranes
- ROM—rupture of membranes
- SROM—spontaneous rupture of membranes
- Toco—tocodynamometer
- UCX—uterine contractions
- U/S—ultrasound
- VBAC—vaginal birth after cesarean section

Equipment to Locate and Become Familiar With

- Allis clamps
- Blades
- Bovie tip
- Compression boots
- Curved Kellys
- Electrosurgery hookup
- Forceps
- Infant pulse oximeter
- Infant warmer
- Infusion pump
- Kochers
- Lap sponges
- Needle holders
- Nitrazine paper
- Pulse oximeter
- Ring forceps
- Scalpels
- Scissors
- Self-retaining retractors
- Speculum
- Straight Halsteds
- Suction hookup
- Suction tips
- Surgical instruments

- T-clamps
- Tenaculum
- Towel clips
- Tube occluding forceps
- Umbilical cord clamp

AMNIOTIC FLUID

Composed mostly of fetal urine; the volume differs depending on gestational age. It protects and cushions the fetus and contributes to GI tract and lung maturity and development.

Amniotic Fluid Index (AFI)

- U/S is used to measure AFI.
- Abdomen is divided into four quadrants, and the largest pocket of fluid in each quadrant is measured.
- At least one pocket of fluid needs to be 2 × 2 cm or greater or have an AFI total greater than 5.
- No cord or fetal parts should be present in the pocket.
- A normal index is greater than 5 cm and less than 24 cm at term.

Oligohydramnios—AFI Less Than 5 cm at Term

Causes

- Rupture of membranes (ROM)
- Genitourinary malformation
- Postdates
- Placental insufficiency

Risks

- Prolonged ROM may lead to infection
- Continued oligohydramnios may cause malformation
- Cord compression leading to fetal hypoxia (nonreassuring tracing), you will often see variables and amnioinfusion may be ordered
- Fetal demise

Interventions

- IV fluids for mother
- Antibiotics if preterm
- Induction of labor if term

If patient is in labor, continuous fetal monitoring is possible by amnioinfusion.

Polyhydramnios—AFI Greater Than 24 cm at Term

Causes

- Diabetes mellitus
- Maternal substance abuse
- Tracheoesophageal malformation
- Neural tube defects
- Chromosomal abnormalities
- Twin-to-twin transfusion syndrome

Risks

- Unstable lie of fetus
- Cord prolapse with SROM or AROM

Interventions

- In labor
  - Controlled AROM (needle point) to prevent SROM
  - U/S for fetal lie if patient is in labor
- If preterm
  - Amnioreduction
  - Indomethacin (Indocin) 25 mg PO q 6 hr × 48 hr to reduce fetal urine production

Assessment of Rupture of Membranes (ROM)

Visual

- Sterile speculum inserted into vagina
  - Pooling of fluid noted at fornix of cervix or in vaginal vault
- If unsure, patient should cough to visualize escape of fluid from cervix

Ferning

- Sterile speculum inserted into vagina
  - Use cotton swab to obtain fluid
  - Smear on slide
- If positive ROM, ferning pattern will be seen under microscope

pH Balance Assessment

- Sterile speculum inserted into vagina
  - Touch nitrazine paper to noted fluid
  - Normal vaginal pH when pregnant is less than 4.5
  - Amniotic fluid pH is less than 7.0
- Nitrazine paper/swab changes color to blue at pH less than 7.0

Note: Some vaginal infections can cause vaginal pH to reach levels of 7.0 or greater.

Amniotic Fluid Protein

- Obtain before vaginal exam
  - No speculum necessary
  - Insert swab into vagina
  - If placental alpha microglobulin-1 is present, test will be positive for ROM
- Follow directions for specific product used by individual institution

Sources

Cunningham, G., & Leveno, K. J. (2018). *Williams obstetrics* (25th ed.). McGraw-Hill.

King, T., Brucker, M., Osborne, K., & Jevitt, C. M. (2018). *Varney's midwifery* (6th ed.). Jones & Bartlett Learning.

Simpson, K. R., & Creehan, P. A. (2021). *AWHONN perinatal nursing* (5th ed.). Wolters Kluwer Health.

ANTEPARTUM TESTS

Initial Visit 8 to 12 Weeks

- U/S for dating
- Pap
- Blood type/Rh factor
- Antibody screen
- GC/CT
- Complete blood count (CBC)
- Syphilis
- HIV
- Hepatitis B
- Rubella titer
- UA
- Hemoglobin electrophoresis
- Cystic fibrosis
- Varicella titers
- Toxoplasmosis
- Cytomegalovirus (CMV)
- Blood glucose (if overweight or history of GDM)

U/S, ultrasound; UA, urinanalysis, GC/CT, gonorrhea/*Chlamydia trachomatis*; GDM, gestational diabetes mellitus

11 to 13 Weeks NIPT

- First-trimester screening (blood work and U/S) for early detection of Down syndrome
  - CVS if needed

15 to 18 Weeks

- AFP for early detection of neural tube defects
- QUAD if no first trimester screening done or if increased risk for Down syndrome
- Amniocentesis if needed (most commonly done between 16 and 22 weeks)
- Glucose screening if patient has high-risk factors, including obesity, Hx of GDM, family hx

20 Weeks

- U/S for fetal anatomy

28 Weeks

- If patient is Rh negative, RhoGAM should be administered. (Repeat blood type and Rh factor before administration.)

- CBC
- HIV in some states or in high-risk women
- Glucose test

34 to 36 Weeks

- GBS (test accurate only for 5 weeks if done at 34 weeks and delivering at 41 weeks; consult with the provider if they want to repeat test)
- GC/CT
- Syphilis
- NST/BPP for advanced maternal age, obesity, GDMA, HTN, and other maternal factors such as drug abuse

Sources

Chou, B., Bienstock, J. L., & Satin, A. J. (2021). *The Johns Hopkins manual of gynecology and obstetrics* (6th ed.). Wolters Kluwer Health.

King, T., Brucker, M., Osborne, K., & Jevitt, C. M. (2018). *Varney's midwifery* (6th ed.). Jones & Bartlett Learning.

APGAR SCORE

- A score between 0 and 2 measuring heart rate, muscle tone, respiration rate, color, and reflex of the neonate at 1, 5, and 10 minutes of life

Breathing		
0 Not breathing	1 Slow irregular	2 Crying
Heart Rate		
0 No heartbeat	1 Less than 100	2 Greater than 100
Muscle Tone		
0 Floppy	1 Some tone	2 Active movement
Reflex/Grimace		
0 No response	1 Facial grimace only	2 Pulls away, cries, coughs, or sneezes
Skin color		
0 Pale blue	1 Body pink, hands and feet blue	2 Entire body is pink

Scoring the Apgar

- 1 minute
  - Apgar scores are not indicative of future fetal well-being
- 5 minutes
  - 0 to 3 may indicate future neurological problems
  - 4 to 6 intermediate scores
  - 7 to 10 considered normal scoring range
- 10 minutes
  - Should continue to be assessed every 5 minutes if Apgar remains less than 7

Pediatrician should be called in for delivery for

- Operative delivery
- Maternal infection or fever
- Nonreassuring fetal tracing

Fast Fact

Notify the pediatrician immediately if Apgar score is less than 7 at any time.

Sources

KidsHealth. (2011). *What is the Apgar score?* http://kidshealth.org/parent/pregnancy_center/q_a/apgar.html#cat32

Simpson, K. R., & Creehan, P. A. (2021). *AWHONN perinatal nursing* (5th ed.). Wolters Kluwer Health.