NICU ELECTIVE ROTATION for PGY8
Rotation Specific Goals and Objectives with Progressive Changes in Responsibility and Criteria for Advancement

1. OVERVIEW

1.1. The *ACGME Program Requirements for Graduate Medical Education in Maternal-Fetal Medicine, 2018,* provides the format required for approval of an MFM fellowship and serves as the basis for the organization of the fellowship.

1.2. *The Guide to Learning in Maternal-Fetal Medicine, ABOG 2018* outlines the full breadth and depth of knowledge required of the MFM fellow and serves as the basis for all goals and objective listed below.

2. GENERAL CONSIDERATIONS

The practice of obstetrics and gynecology and maternal-fetal medicine requires a commitment to professional as well as personal growth. In addition to practicing technical skills, physicians should cultivate the ability to expand and apply those skills. Knowledge of ethical principles, communication skills, and the ability to acquire and continually update information are important components of professional development. The Accreditation Council on Graduate Medical Education (ACGME) identified six core competencies that should be incorporated into residency and subspecialty fellowship programs.

3. COMPETANCY BASED OBJECTIVES

3.1. **PATIENT CARE & PROCEDURAL SKILLS**

3.1.1. Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

3.1.2. Fellows must be able to competently perform all medical, diagnostic, and surgical procedures considered essential for the area of practice.

3.1.3. Fellows must demonstrate competence in the management of complicated pregnancies, including: the treatment of medical and surgical complications of pregnancy; care of pregnant women with medical co- morbidities; fetal evaluation; genetic evaluation of women, families, and fetuses; ultrasound and prenatal diagnosis; critical care of pregnant women; interpretation of perinatal pathology; and, care for patients requiring cesarean hysterectomy.

3.1.4. Fellows must demonstrate competence in performing the following procedures; cervical cerclage; antepartum fetal assessment (biophysical profile, non-stress test (NST), etc.); amniocentesis at fewer than 24 weeks gestation; targeted maternal and fetal imaging using ultrasonography; external cephalic version; intrapartum management of multiple gestations, including internal version of the second twin; non-vertex vaginal delivery; and, operative vaginal delivery.

3.1.5. Fellows must demonstrate competence in obstetrical critical care, which must include training in the management of acute peripartum medical and surgical complications;

3.1.6. Fellows must demonstrate competence in infectious disease as it relates to pregnancy and the puerperium, including the effects of maternal infection on the fetus and newborn

3.2. **MEDICAL KNOWLEDGE**

3.2.1. Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

3.2.2. Fellows must demonstrate knowledge of: the physiology and pathophysiology of diseases occurring in pregnancy; both normal and abnormal newborn physiology; genetics (including prenatal screening and diagnosis), genomics, teratology, and dysmorphology.

3.2.3. Fellows must demonstrate knowledge of -the indications, techniques, complications, and follow-up of the following procedures: cesarean hysterectomy; cervical cerclage; antepartum fetal assessment (biophysical profile, NST, etc.); targeted maternal and fetal imaging using ultrasonography; -pregnancy termination; invasive fetal diagnostic and therapeutic procedures, including amniocentesis at fewer than 24 weeks gestation; chorionic villus sampling; umbilical cord blood sampling; fetal transfusion; and fetal shunt placement; external cephalic version; intrapartum management of multiple gestations – internal version of second twin; non-vertex vaginal delivery; and operative vaginal delivery.

3.2.4. Fellows must demonstrate knowledge of obstetrical critical care, including the management of acute peripartum medical and surgical complications;

3.2.5. Fellows must demonstrate knowledge of infectious diseases as they relate to pregnancy and the puerperium, including the effects of maternal infection on the fetus and newborn

3.3. PRACTICE-BASED LEARNING AND IMPROVEMENT

3.3.1. Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

3.3.2. Fellows are expected to develop skills and habits to be able to identify strengths, deficiencies, and limits in one's knowledge and expertise; set learning and improvement goals; identify and perform appropriate learning activities; systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; incorporate formative evaluation feedback into daily practice; locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems) ; use information technology to optimize learning; participate in the education of patients, families, students, residents and other health professionals; participate in multidisciplinary inter-professional conferences devoted to care of the at-risk mother, fetus, and newborn

3.4. INTERPERSONAL AND COMMUNICATION SKILLS

3.4.1. Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals

3.4.2. Fellows are expected to; communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; communicate effectively with physicians, other health professionals, and health related agencies; work effectively as a member or leader of a health care team or other professional group; act in a consultative role to other physicians and health professionals; and, maintain comprehensive, timely, and legible medical records

3.5. PROFESSIONALISM

3.5.1. Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

3.5.2. Fellows are expected to demonstrate compassion, integrity, and respect for others; responsiveness to patient needs that supersedes self-interest; respect for patient privacy and autonomy; accountability to patients, society and the profession; sensitivity and responsiveness to a diverse patient population.

3.6. SYSTEMS-BASED PRACTICE

3.6.1. Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

3.6.2. Fellows are expected to work effectively in various health care delivery settings and systems relevant to MFM; coordinate patient care within the health care system relevant to MFM; incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population based care as appropriate; advocate for quality patient care and optimal patient care systems; work in inter-professional teams to enhance patient safety and improve patient care quality; participate in identifying system errors and implementing potential systems solutions.

4. ROTATION SPECIFIC GOALS – DIABETES ROTATION

4.1. The fellow shall function as a member of the NICU team under the direction of the Division of Neonatology Care attending faculty. The fellow shall participate in the management of the full spectrum of patients in the NICU.

4.1.1. The experience in the NICU is intended to enable the fellow to meet the educational objectives set forth in **Section XVI. NEONATOLOGY** of the *Guide to Learning in Fetal-Fetal Medicine, ABOG 2018* and

4.1.2. he relevant competencies as described in the *"ACGME Program Requirements for Graduate Medical Education in Maternal-Fetal Medicine, 2018.*

4.2. The fellow should have sufficient knowledge of neonatology to:

4.2.1. Describe immediate care of the baby in the delivery room.

4.2.2. Describe neonatal adaptation.

4.2.3. Describe clinical evaluation of the newborn, including assessment of gestational age.

4.2.4. Describe resuscitation of the newborn, including:

- 4.2.4.1. Intubation and ventilation.
- 4.2.4.2. Drug use
- 4.2.4.3. Cardiac massage
- 4.2.4.4. Volume replacement
- 4.2.4.5. Temperature Control
- 4.2.4.6. Interpretation and management of acid-base and blood gas status
- 4.2.4.7. Ex-utero intrapartum treatment (EXIT) procedure

4.2.5. Describe the etiology, management, sequelae, and, if appropriate, the prevention of:

- 4.2.5.1. Respiratory disease, including meconium aspiration.
- 4.2.5.2. Persistent fetal circulation
- 4.2.5.3. Hyperbilirubinemia
- 4.2.5.4. Infection
  - 4.2.5.4.1. Neonatal sepsis
  - 4.2.5.4.2. Pneumonia
- 4.2.5.5. Hypoxic, ischemic encephalopathy
- 4.2.5.6. Periventricular leukomalacia
- 4.2.5.7. Seizures
- 4.2.5.8. Metabolic abnormalities, including hypoglycemia and hypocalcaemia
- 4.2.5.9. Hemorrhagic disorders
- 4.2.5.10. Hypothermia
- 4.2.5.11. Heart disease
- 4.2.5.12. Intracranial hemorrhage
- 4.2.5.13. Necrotizing enterocolitis
- 4.2.5.14. Significant anomalies (e.g., ambiguous genitalia, abdominal wall, central nervous system, and gastrointestinal defects)
- 4.2.5.15. Alloimmune thrombocytopenia

4.2.5.16. Hydrops

4.2.6. Describe developmental problems of the newborn and child with regard to:
- 4.2.6.1. Very low birth weight infants
- 4.2.6.2. Low birth weight infants
- 4.2.6.3. Small for gestational age infants

4.2.7. Describe the use of surfactant therapy.

4.2.8. Describe neonatal critical care management involving:
- 4.2.8.1. Mechanical ventilation techniques
- 4.2.8.2. Extracorporeal membrane oxygenation

4.2.9. Describe the indications for, complications of, and success rates of neonatal surgery for common congenital anomalies.

5. COMPETENCY BASED CRITERIA for ADVANCEMENT and PROGRESIVE CHANGES in RESPONSIBILITY

5.1. Patient Care & Procedural Skills (PC)

5.1.1. PC 1 –Labor and Delivery Procedures

5.1.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.1.1.2. The advancing (graduating) third year fellow is expected to; independently identify appropriate procedures for complex obstetrical patients; independently and proficiently perform complex obstetrical procedures; anticipate, diagnoses, and independently manage complications associated with obstetrical procedures: independently collaborate with and provide evidence-based subspecialty-specific consultation to members of the health care team.

5.1.2. PC 2: Sonographic Diagnosis

5.1.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.1.2.2. The advancing (graduating) third year fellow is expected to; independently and proficiently perform detailed fetal assessment; independently select and perform appropriate procedures for prenatal diagnosis or therapy; anticipate, diagnose, and independently manage complications associated with prenatal diagnostic procedures; independently collaborate with and provide evidence-based subspecialty-specific consultation to other members of the health care team.

5.1.3. PC 3: Medical Complications of Pregnancy

5.1.3.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.1.3.2. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed above.

5.1.3.3. The advancing (graduating) third year fellow is expected to; independently manage complex medical co-morbidities in pregnancy; co-manage patients in critical care settings; independently collaborate with and provide evidence-based subspecialty-specific consultation to other members of the health care team.

5.1.4. PC 4: Obstetrical Complications

5.1.4.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.1.4.2. The advancing (graduating) third year fellow with is expected to; independently manage complex obstetrical complications; collaborate with and provides evidence-based subspecialty-specific consultation to other members of the health care team.

5.2. Medical Knowledge (MK)

5.2.1. MK 1: Pathology, Anatomy, and Physiology

5.2.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.2.1.2. The advancing (graduating) third year fellow is expected to; apply knowledge of clinicopathologic findings to optimize perinatal outcomes; apply knowledge of maternal pelvic anatomy to the management of complex obstetric procedures and complications.

5.2.2. MK 2: Medical Complications of Pregnancy

5.2.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.2.2.2. The advancing (graduating) third year fellow is expected to; apply knowledge of complex medical comorbidities and treatment modalities that can affect obstetrical outcomes; applies knowledge of critical care management to optimize patient outcomes.

5.2.3. MK 3: Obstetrical Complications

5.2.3.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.2.3.2. The advancing (graduating) third year fellow is expected to; apply knowledge of complex obstetrical complications and treatment modalities; apply knowledge of obstetric anesthesia and neonatology in collaboration with the multidisciplinary care team.

5.2.4. MK 4: Genetic Principles

5.2.4.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.2.4.2. The advancing (graduating) third year fellow is expected to; demonstrate knowledge of advanced genetic principles and uncommon hereditary syndromes; demonstrate knowledge of advanced genetic testing.

5.2.5. MK 5: Prenatal Imaging and Diagnosis

5.2.5.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.2.5.2. The advancing (graduating) third year fellow is expected to; apply knowledge of specific fetal anomalies to develop comprehensive management plans; apply knowledge of complex fetal anomalies in collaboration with the multidisciplinary care team to develop comprehensive management plans.

5.3. System Based Practice

5.3.1. SBP 1: Computer Systems

5.3.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.3.1.2. The third year fellow is expected to; expertly use the EMR to its full potential, and facilitate integration of computer-based communication with the patient team.

5.3.2.SBP 2: Value-based Patient Care

5.3.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.3.2.2. The advancing (graduating) third year fellow is expected to; independently apply knowledge of maternal-fetal medicine guideline-based care; independently incorporate cost-awareness into the development of diagnostic and treatment plans; independently coordinate personnel and resources to facilitate value-based care.

5.4. Practice-Based Learning and Improvement

5.4.1.PBLI 1: Scholarly Activity

5.4.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.4.1.2. The advancing (graduating) third year fellow is expected to; complete and defend a comprehensive written scholarly thesis that demonstrates: advanced research methodology and design; statistical analysis; synthesis of scientific literature, hypothesis testing, and descriptions of finding and results.; and is in a format suitable for publication as original research in a peer-reviewed journal

5.4.2.**PBLI 2:**

5.4.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.4.2.2. The advancing (graduating) third year fellow is expected to; complete a QI project, either as an individual or team member; display effective teamwork skills.

5.4.3.PBLI 3: Education of Team Members

5.4.3.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.4.3.2. The advancing (graduating) third year fellow is expected to; advise and provide guidance to junior colleagues and other team members; provides advanced clinical teaching of residents; identify deficiencies in educational curriculum and develops modifications.

5.5. Professionalism

5.5.1.PROF 1: Professional Ethics and Accountability

5.5.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.5.1.2. The advancing (graduating) third year fellow is expected to; serve as a role model for honesty, integrity, professionalism, and compassionate patient care; demonstrate commitment to self-improvement; prioritize and advocate for patient needs over self-interest; operate professionally and independently in various educational and patient care environments

5.5.2.PROF 2: Compassion, Integrity, and Respect for Others

5.5.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.5.2.2. The advancing (graduating) third year fellow is expected to; consistently model compassion, integrity, and respect for others; coach others to improve compassion, integrity, and respect for patients

5.6. Interpersonal and Communication Skills

5.6.1.ICS 1: Teamwork and Communication with Physicians & Other Health Professionals

5.6.1.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives.

5.6.1.2. The advancing (graduating) third year fellow is expected to; lead interprofessional and interdisciplinary health care teams to achieve optimal outcomes; lead effective transitions of care and team debriefing; respond to requests for consultation in a timely manner, and communicate recommendations to the requesting team.

5.6.2.ICS 2: Communication with Patients and Families

5.6.2.1. The starting third year fellow, having completed the second year is expected to expand and develop the proficiencies and competencies listed in the CLINICAL-MATERNAL-FETAL MEDICINE (MFM) ROTATION for PGY7 Goals & Objectives

5.6.2.2. The advancing (graduating) third year fellow is expected to; role model effective communication; be capable of informing patients and families about a medical error that caused harm.

Recommended textbooks

-Avery's Diseases of the Newborn: Expert Consult - Online and Print, Saunders, 10th ed, 2018

-Fanaroff and Martin's Neonatal-Perinatal Medicine: Diseases of the Fetus and Infant (Expert Consult Online and Print) (2-Volume Set), Mosby, 10th ed, 2015

This list is by no means exclusive and should form the nucleus of a far more extensive library.

Revised 19 NOV 2018