

1 Program Requirements for Fellowship Education in Neonatal-Perinatal Medicine

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3 Underlined text - Revisions/additions to the existing requirements.

4 ~~Strikethrough~~ – Deletions of text.

5 (SPPR) – Requirement that has been deleted in this document because it is contained in  
6 the Program Requirements for the Subspecialties of Pediatrics

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8  
9 In addition to complying with the Program Requirements for Residency Education in the  
10 Subspecialties of Pediatrics, programs must comply with the following requirements,  
11 which may exceed the common requirements.

12  
13 I. Scope of Training

14  
15 The purpose of an accredited program in neonatal-perinatal medicine is to provide  
16 fellows with the background to understand the physiology and altered structure  
17 and function of the fetus and the neonate and to diagnose and manage problems of  
18 the neonate.

19  
20 ~~To ensure an appropriate educational environment, an accredited program in~~  
21 ~~neonatal-perinatal medicine must be affiliated with an Accreditation Council for~~  
22 ~~Graduate Medical Education (ACGME)-accredited residency program in~~  
23 ~~obstetrics and gynecology, within the same geographic location, that has board~~  
24 ~~certified maternal-fetal medicine specialists.-(SPPR)~~

25  
26 The program must emphasize the fundamentals of clinical diagnosis and  
27 management of problems seen in the continuum of development from the prenatal  
28 through the intrapartum and neonatal periods, including longitudinal follow-up.

29  
30 II. Faculty

31  
32 A. Neonatologists

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34 In order to ensure appropriate education and to provide adequate  
35 supervision, an accredited program must have at least four hospital-based  
36 neonatologists ~~devoting fulltime~~ actively contributing a sufficient part of  
37 their professional effort to the program.

38  
39 B. Other Physician Teaching and Consultant Faculty

40  
41 To ensure an appropriate educational environment, an accredited program  
42 in neonatal-perinatal medicine must be affiliated with an Accreditation  
43 Council for Graduate Medical Education (ACGME) -accredited residency  
44 program in obstetrics and gynecology, within the same geographic  
45 location, that has board certified maternal-fetal medicine specialists.  
46

47 ~~In addition to having the~~ Each program must have a full range of pediatric  
48 subspecialists necessary available for teaching and consultation, each  
49 program must have including:  
50

- 51 1. a pediatric cardiologist
- 52 2. a pediatric pulmonologist ~~a pediatric surgeon~~
- 53 3. a pediatric endocrinologist ~~a cardiovascular surgeon skilled in~~  
54 ~~pediatric cardiovascular surgery as a consultant and teacher.~~
- 55 4. a pediatric nephrologists
- 56 5. a pediatric neurologist
- 57 6. a pediatric gastroenterologist
- 58 7. a geneticist
- 59 4. ~~a pediatrician~~ consultant skilled in pediatric infectious diseases
- 60 5. ~~a pediatrician~~ consultant skilled in neurodevelopment.
- 61 6. a pediatric radiologist ~~a neurosurgeon skilled in pediatric~~  
62 ~~neurosurgery as a consultant and teacher~~
- 63 7. ~~an obstetrician skilled in maternal fetal medicine.~~
- 64 8. ~~an ophthalmologist skilled in pediatric ophthalmologic disease and~~  
65 ~~treatment~~
- 66 9. ~~a pediatric orthopaedic surgeon~~
- 67 10. ~~a pediatric otorhinolaryngologist~~
- 68 11. ~~a pediatric urologist~~

69  
70 ~~Consultant faculty from other related disciplines also must be available.~~  
71 Each program must also include access to surgical subspecialists skilled in  
72 the management of neonates, who will be available for teaching and  
73 consultation in the following disciplines: pediatric surgery, neurosurgery,  
74 ophthalmology, orthopedic surgery, otolaryngology, urology and  
75 cardiovascular surgery.  
76

### 77 78 C. Other Professional Personnel

79  
80 ~~The following program staff are essential: respiratory therapists skilled in~~  
81 ~~the care of the neonate, an ultrasonographer well versed in perinatal~~  
82 ~~ultrasonic techniques, and an echocardiographic technician skilled in~~  
83 ~~neonatal echocardiography.~~  
84

85 ~~The nursing staff must be sufficient to meet appropriate standards of care.~~  
86 ~~This implies leadership by nurses skilled in neonatal and obstetrical~~  
87 ~~intensive care. Medical social workers qualified in maternal child health~~  
88 ~~also must be available.~~  
89

90 The following professional staff, skilled in the care of critically ill and/or  
91 premature neonates, are essential: nurses, respiratory therapists,  
92 pharmacists, nutritionists skilled in the management of both enteral and

93 parenteral nutrition, therapists skilled in evaluating feeding difficulties  
94 initially or in follow up, medical social workers skilled in management of  
95 families in crisis and end-of-life care, specialists in physical and  
96 occupational therapy applied in a developmentally appropriate way, and  
97 specialists in the assessment of hearing.  
98

99 III. Facilities/Resources

100 ~~A specially designed neonatal intensive care unit must be located in the primary~~  
101 ~~teaching site. Facilities and equipment in that unit must meet the generally~~  
102 ~~accepted standards of modern intensive care units, and laboratories, and must be~~  
103 ~~available on a 24 hour a day basis. The facilities and resources available must~~  
104 ~~include: portable X-ray and ultrasound imaging with 24 hour-a-day interpretation~~  
105 ~~services and portable neonatal echocardiography with 24 hour-a-day~~  
106 ~~interpretation service.~~  
107

108  
109 The perinatal service must have facilities and equipment, which meet the  
110 generally accepted standards for high-risk newborn resuscitation.  
111

112 The primary teaching site must meet the generally accepted standards for modern  
113 laboratories and services needed for management of high-risk pregnancies and  
114 critically ill neonates. These must include but are not limited to the following:  
115

- 116 1. Microchemistry and hematology laboratories
- 117 2. Blood gas laboratory
- 118 3. Perinatal diagnostic laboratory
- 119 4. Pathology services, including those for evaluation of placental pathology  
120 ~~Radiology and ultrasound imaging facilities~~
- 121 5. Diagnostic bacteriology and virology laboratories
- 122 6. Hematology laboratory
- 123 7. Blood bank
- 124 8. ~~Electrocardiographic and electroencephalographic laboratories~~
- 125 9. Accessible CT and MRI facilities
- 126 10. ECG and EEG laboratories with portable services ~~Echocardiography~~  
127 ~~capability~~
- 128 11. Screening laboratory for inborn errors of metabolism  
129

130 ~~In addition, The teaching units should also have access to the following should be~~  
131 ~~available within a reasonable period of time at the primary teaching site or~~  
132 ~~nearby:~~  
133

- 134 1. Screening laboratory for inborn errors of metabolism
- 135 2. Clinical toxicology laboratory
- 136 3. Nuclear medicine facilities
- 137 4. Cytogenetics laboratory
- 138 5. Audiology laboratory

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#### IV. Educational Program

Programs must provide experience and instruction that is adequate to enable the neonatal-perinatal fellows to develop special competence in the management of critically ill neonates. In addition to the general principles of critical care this should include but not be limited to techniques of neonatal resuscitation, venous and arterial access, evacuation of air leaks, endotracheal intubation, preparation for transport, ventilatory support, continuous monitoring, temperature control, and nutritional support.

The program also must provide instruction in the psychosocial implications of disorders of the fetus, neonate, and young infant, as well as in the family dynamics surrounding the birth and care of a sick neonate. The fellows should have experience in patient consultation, communication with referring physicians and in organizing transport of neonates. They should also be involved aware of contemporary methods for educating physicians and other clinicians. ~~in a regional program that involves outreach education, patient consultation, and transport of ill neonates.~~

The fellows also should be involved in a regional program that involves ~~outreach education,~~ patient consultation, ~~and~~ transport of ill neonates and different levels of perinatal care.

Each fellow must be taught to identify the high-risk pregnancy and must become familiar with the methods used to evaluate fetal well-being and maturation. Each fellow must become familiar with factors that may compromise the fetus during the intrapartum period and recognize the signs of fetal distress. In addition, each fellow must participate in the ~~longitudinal~~ follow-up of high-risk neonates.

Programs must teach fellows to be effective consultants in neonatal-perinatal medicine. All fellows must receive instruction that prepares them to conduct and interpret relevant scholarly efforts in neonatal-perinatal medicine, to teach neonatal-perinatal medicine effectively and to be effective administrators and leaders in the field.

With regard to surgical patients, infants and children in the NICU are best served by a patient care team designed to provide coordinated, knowledgeable care to the child under the direction of the pediatric surgeon. The pediatric surgeon may delegate certain responsibilities to staff from Neonatology in order to provide the patient and parents with access to the most appropriate subspecialty resident and teaching physicians as the situation requires. To meet the requirements of resident education, it is essential that those patients whose primary problem is surgical be on the pediatric surgical service in centers with an approved pediatric surgical training program. Communication among caretakers is important. All aspects of

184 care should be carefully coordinated through the surgical service in order to  
185 enhance education and patient care.

186  
187 A. Patient Population

188  
189 The program must provide the patient care experiences necessary for the  
190 fellows to acquire skill in delivery room stabilization and resuscitation of  
191 critically ill neonates. To accomplish this, there must be a sufficient  
192 number and variety of high-risk obstetrical patients to ensure that the  
193 fellows become knowledgeable in identifying high-risk pregnancies and  
194 evaluating fetal well-being and maturation.

195  
196 Also, an adequate number of critically ill neonates, with a variety of  
197 disorders must be available for fellows. Each fellow must participate in the  
198 care of a sufficient number of neonates who require ventilatory assistance  
199 to become skilled in their management, and Similarly each fellows should  
200 participate in the care of an adequate number of neonatal patients neonates  
201 who require major surgery, including cardiac surgery. Fellows must  
202 acquire knowledge about the surgical procedures and must care for a  
203 sufficient number of these patients to become skilled in their evaluation,  
204 diagnosis and preoperative and postoperative management.

205  
206 B. Outpatient Experience

207  
208 A sufficient number of discharged infants must be available in a NICU  
209 Follow-up continuity clinic to assure appropriate outpatient experience for  
210 each fellow. The clinic must have staff with expertise in performing  
211 developmental assessments as well as skilled neonatal or pediatric faculty  
212 as teachers. These experiences should enable fellows to understand the  
213 relationship between neonatal illnesses and later health and development  
214 and to become skilled in the longitudinal follow-up, evaluation, and  
215 management of such patients and to become aware of the socioeconomic  
216 impact and the psychosocial stress that such infants may place on a family.

217  
218 C. Neonatal Data Base

219  
220 A neonatal database of all patient admissions, diagnoses, and outcomes  
221 must be available for fellow education. Experience in Exposure to the  
222 tabulation and evaluation of an tabulating and evaluating institutional  
223 database should be provided. Exposure to a and regional or national  
224 and neonatal morbidity and mortality database should be provided is  
225 encouraged. There also should be instruction and experience in techniques  
226 of collation and critical interpretation of data pertaining to immediate  
227 outcome and sequelae of various diseases, for which the presence of a  
228 statistician is desirable. This experience should be closely related to the  
229 evaluations of various modalities of therapy used in these disorders.

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D. Curriculum

The program must include instruction in related basic sciences. Seminars, conferences, and courses must be offered in the basic disciplines related to pregnancy, the fetus, and the neonate. This should include maternal physiological, biochemical, and pharmacological influences on the fetus; fetal physiology; fetal development; placental function (placental circulation, gas exchange, growth); physiological and biochemical adaptation to birth; cellular, molecular, and developmental biology and pathology relevant to diseases of the neonate; psychology of pregnancy and maternal-infant interaction; breast feeding and lactation; growth and nutrition; and genetics.

Fellows should participate in regularly scheduled multidisciplinary conferences, such as sessions that review perinatal mortality, morbidity, and patient care, as well as in case conferences and current literature and research conferences. Fellows should be taught to lead and present these conferences.