Cardiology Rotation for
NICU Fellow:

Overview: 3rd year NICU Fellows in training will spend 2 ½ months in an elective provided by the Division of Pediatric Cardiology at Stony Brook. The ½ time electives will occur during the last semester of the 3rd year during research blocks.

Overall Goals:
1. Provide the fellow with a working knowledge of cardiovascular disease in infants, including cardiac surgical procedures, starting with fetal echocardiography and communication to families.
2. Provide the fellow with a working knowledge of potential post-operative complications, how to recognize them, how to treat them, and how to work as part of a team in the management of postoperative infants.
3. Facilitate communication with families of infants with cardiovascular disease.
4. Develop proficiency in performing a physical exam focused on cardiovascular disease in infants.
6. Critically review scientific literature related to pediatric cardiovascular disease.
7. Participate as a team member in a multidisciplinary medical management team involving care of infants with cardiovascular disease, including preoperative and postoperative care.
8. Provide therapeutic protocol discussions or case presentations for the Division of Neonatal-Perinatal Medicine.

Schedule: Daily patient care rounds, examination of patients, and cardiology conferences. Attends echocardiography and parent conferences. The neonatal fellowship director will provide seminars on PPHN and ECMO.

Education Mentors and evaluation:

1. Director of Pediatric Cardiology and Director of Neonatal-Perinatal Medicine - will have overall responsibility for the educational experience and performance evaluation of the NICU fellow during this rotation.
2. Mount Sinai – cardiac MRI studies and cardiac case conferences.

Note: With input from all of the above, Dr. James Nielsen (Pediatric Cardiology Chief) and Dr. Laurie Panesar (Pediatric Cardiology Attending), will provide evaluations at the end of the rotation using the Competency Based Goals and Objectives (attached) and will use New Innovations. Fellows will evaluate the rotation based on the evaluation form in New Innovations.
Competency Based Goals and Objectives:

A. PATIENT CARE:

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. Fellows are expected to:

1. Demonstrate caring and respectful behaviors when interacting with patients and their families.
2. Gather essential and accurate information about their patients.
3. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.
4. Develop and carry out patient management plans.
5. Counsel and educate patients and their families.
6. Use information technology to support patient care decisions and patient education.
7. Provide health care services aimed at preventing infant health problems or maintaining health.
8. Work with health care professionals, including those from other disciplines, to provide patient-focused care.

Year 3:

• Schedule and pager numbers of the specific 3rd year fellow will be given to the cardiology team for notification of potential cases, consults and ECHOS (prenatal and postnatal). Fellows will be paged and be present for all fetal and neonatal ECHOS during daytime hours unless they have a critical time sensitive experiment.
• Understand and be able to assist with counseling and educating families about the diagnostic and therapeutic interventions used for pre-operative, operative, and post-operative care of common congenital heart disorders.
• Develop competency in the management of neonates with common cardiovascular disorders.
• Interpret normal and recognize abnormal cardiac ultrasounds starting in fetal life.
• Develop familiarity with the interventional and surgical approaches for neonates with a broad range of cardiovascular diseases.
• Describe the staged surgical approach for single ventricle congenital heart disease. Understand and be able to assist with counseling and educating families about the diagnostic and therapeutic interventions used in less common cardiac disorders, starting from fetal evaluations at the Stony Brook ambulatory center at Tech Park.
• Interpret complex EKGS and cardiac ultrasounds.
• Develop competency in the diagnosis and treatment of PPHN, when to transfer for ECMO and fundamentals of ECMO therapy.
• Write postnatal neonatal consultations.
Assessment Tools for all years
- Direct faculty supervision, observation, and monitoring.
- Faculty and subspecialty fellow review of EKG/echo interpretations.
- New Innovations evaluations.

B. **MEDICAL KNOWLEDGE:**

Fellows must demonstrate knowledge about established and evolving biomedical, clinical and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Fellows are expected to:

1. Demonstrate an investigatory and analytic thinking approach to clinical situations.
2. Know the basic and clinically supportive scientific background of cardiac disorders and apply this knowledge to clinical problem solving, decision making and critical thinking.

Year 3:
- Understand the basic pathophysiology of less common cardiac disorders.
- Understand and recognize common neonatal arrhythmias, various causes of heart block, and the mechanisms for SVT.
- Understand indications for various cardiac surgical corrections, including staged surgical management of complex cardiac cases.
- Understand neurodevelopmental outcome for critical cardiac patients.
- Continue to refine ability in EKGs, cardiac echo interpretation, and physical examination skills.
- Obtain didactic review of ECMO for PPHN
- Attend weekly Mt. Sinai surgical teleconference to the hospital or Tech Park on Wednesday’s at 3 to 5 pm.
- Fellow will attend the Senior Pediatric Resident Cardiology Lecture series.

Assessment Tools for all years
- Direct faculty (cardiology and NICU) supervision, observation, and monitoring.
- Faculty and subspecialty fellow review of EKG/echo interpretations.
- New Innovations evaluations.

C. **PRACTICE-BASED LEARNING AND IMPROVEMENT:**

Fellows must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Fellows are expected to:
1. Analyze their personal practice experience and implement strategies to continually improve the quality of patient care using a systematic methodology.
2. Locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems.
3. Obtain and use information about their population of patients and the larger population from which their patients are drawn.
4. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
5. Use information technology to manage information, access on-line medical information; and support their education.
6. Facilitate the learning of residents, students and other health care professionals.

Year 3:
- Attend daily educational activities including fetal echo cardiographic studies, conferences and rounds.
- Participate in the education of pediatric cardiology families, students, residents, and other health care professionals.
- Present at least one conference on a cardiology patient under the supervision of the cardiologist.

Assessment Tools for all years
- Direct faculty (cardiology and PICU) and subspecialty fellow (cardiology and PICU) supervision, observation, and monitoring.
- Faculty and subspecialty fellow review of EKG/echo interpretations.
- New Innovations evaluations.

D. INTERPERSONAL AND COMMUNICATION SKILLS:

Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates. Fellows are expected to:

1. Create and sustain a therapeutic and ethically sound relationship with patients, patients’ families and professional colleagues.
2. Provide effective and professional consultation to other physicians and health care professionals.
3. Use effective listening skills.
4. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
5. Work effectively with others as a member of a health care team or other professional group.
Year 3:
- Communicate clearly with the Cardiology/Neonatal teams.
- Formulate personal goals for the rotation and communicate these to the Cardiology/Neonatal teams.
- Attend family conferences and be an active participant in teaching conferences and rounds.
- Act as an advocate for one’s own learning; present at least one conference to the Cardiology or NICU team.

Assessment Tools for all years
- Direct faculty (cardiology and PICU) and subspecialty fellow (cardiology and PICU) supervision, observation, and monitoring.
- Faculty and subspecialty fellow review of EKG/echo interpretations
- New Innovations evaluations

E. PROFESSIONALISM:

Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
Fellows are expected to:

1. Demonstrate respect, compassion, and integrity.
2. Demonstrate a responsiveness to the needs of patients and society that supersedes self-interest.
3. Demonstrate accountability to patients, society, and the profession.
4. Demonstrate a commitment to excellence and on-going professional development.
5. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, maintaining confidentiality of patient information, informed consent, and business practices.
6. Demonstrate sensitivity and responsiveness to patients’ culture, beliefs, age, gender, sexual preferences and disabilities.

Year 3:
- Be a good ambassador for Stony Brook; act with respect for the rules and regulations.
- Act with accountability, compassion, and integrity at all times.

Assessment Tools for all years
- Direct faculty (cardiology and NICU) supervision, observation, and monitoring.
- Faculty review of EKG/echo interpretations
- New Innovations evaluations
F. **SYSTEMS BASED PRACTICE:**

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Fellows are expected to:

1. Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the affect their own practice.
2. Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources.
3. Practice cost-effective health care and resource allocation that does not compromise quality of care.
4. Advocate for quality patient care and assist patients in dealing with system complexities.
5. Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance.

**Years 3:**
- Understand how the Cardiology and NICU teams mesh with the rest of the patient’s care with complex conditions such as congenital heart disease.
- Work with the multidisciplinary teams that are relevant to the infant with cardiovascular disease.
- Be aware of considerations regarding cost awareness and risk-benefit analysis.
- Participate in identifying system errors and in giving suggestions for potential systems solutions.
- Understanding proactive transfer of information on critical cardiac surgical patients.

**Assessment Tools for all years**
- Direct faculty (cardiology and PICU) and subspecialty fellow (cardiology and PICU) supervision, observation, and monitoring.
- Faculty and subspecialty fellow review of EKG/echo interpretations
- New Innovations evaluations