

**UNIVERSITY OF MINNESOTA**  
**GRADUATE MEDICAL EDUCATION**



**2024-2025**

**PROGRAM POLICY & PROCEDURE MANUAL**

**Department of Anesthesiology**  
Adult Cardiothoracic Anesthesiology  
Fellowship Program

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## **CONFIRMATION OF RECEIPT OF YOUR PROGRAM POLICY MANUAL**

## **WELCOME TO THE PROGRAM**

### **A. Purpose**

- a. The program manual is a tool with key policies and required procedures as well as general information to ensure a smooth transition to your institution and program.
- b. At the department level, the Program Director is responsible for providing trainees with program-specific policies and procedures. This includes items such as ACGME Program Requirements, procedures to follow institutional policies, and other information specific to the department and the GME program.

### **B. Profile of Our Institution**

- a. Information about Graduate Medical Education at the University of Minnesota is available on this [webpage](#).
- b. The webpage includes our Statement of Commitment, Goals for Graduate Medical Education and our Diversity Statement.

### **C. Statement of Commitment**

- a. The University of Minnesota Medical School is committed to graduate medical education, which emphasizes education and training of physicians to meet the healthcare needs of our region, advancement of knowledge, and leadership in the biomedical sciences and in academic medicine.
- b. With this commitment, the University of Minnesota Medical School will provide adequate funding for administration, personnel, educational, clinical resources, and faculty teaching time to be certain that every program under our institutional sponsorship offers the best possible training environment and educational opportunities.

### **D. Statement of Goals for Graduate Medical Education**

- a. Our goal is to provide the highest quality of graduate and post-graduate medical, professional and educational training to prepare physicians for the practice of specialty and/or subspecialty training, or for the pursuit of academic and research medicine.
- b. The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, marital status, disability, public assistance status, veteran status, or sexual orientation.

### **E. Statement of Diversity and Inclusion**

- a. The University of Minnesota Medical School is committed to excellence. Our mission will only be achieved through embracing and nurturing an environment of diversity, inclusiveness, equal opportunity, and respect for the similarities and differences in our community.

- b. We strive to create an atmosphere where differences are valued and celebrated, knowing institutional diversity fuels the advancement of knowledge, promotes improved patient care and fosters excellence. We will train a culturally aware workforce qualified to meet the needs of the diverse populations we serve. We especially strive to have our community better reflect the broad range of identities in our state, including race, ethnicity, gender identity, gender expression, sexual orientation, disability, age, national origin, religious practice, and socioeconomic status.
- c. Given the dynamic nature of our community, the Medical School Diversity Statement and [Policy](#) should be reviewed biennially to ensure it is current and reflective of our priorities.

**F. Institutional Responsibilities**

- a. The Institution Manual <http://z.umn.edu/gmeim> is designed to be an umbrella policy manual. Some programs may have policies that are more tailored to their needs than the Institution Manual in which case the program policy will be followed.
- b. Should a policy in a Program Manual conflict with the Institution Manual, the Institution Manual will take precedence.

**G. Statement of Inclusion of Fellowship Program**

- a. The information contained in this Policy Manual pertains to everyone in the department's programs except as otherwise identified.

**H. Department Mission Statement**

- a. With respect to the Adult Cardiothoracic Anesthesiology Fellowship Program, the missions of the Department are as follows:
  - i. To provide excellent care to our patient population in the areas of preoperative patient assessment and preparation, surgical anesthesia, perioperative and postoperative pain management, and critical care
  - ii. To promote patient safety at the departmental and institutional level
  - iii. To provide a strong clinical base employing excellence in clinical education along with clinical experience to anesthesiology fellows
  - iv. To supplement the clinical teaching with a strong didactic program of lectures, seminars, quality improvement projects, high-fidelity simulations, workshops, case conferences, and visiting professors

**I. Program Mission Statement**

- a. Our program offers three 1-year Adult Cardiothoracic Anesthesiology Fellowship positions accredited by ACGME. Our vision is to be a center of excellence in clinical fellowship training and education and a leader among other Midwest programs.

- b. The University of Minnesota has a strong tradition in cardiac surgery with the first successful open-heart surgery and the first implant of an artificial heart valve as well as ongoing innovative relations with medical device companies. It is a top center for ventricular assist devices, heart and lung transplantation, minimally invasive cardiac surgery and transcatheter valve repair and replacements. Our fellowship includes experience with new technologies as well as providing a solid base in a wide range of cardiothoracic anesthesia cases.
- c. The goals of our program are to provide the most up-to-date training in the area of adult cardiothoracic anesthesiology and develop the clinical and echocardiographic skills, confidence, expertise, and collaborative approach needed for the perioperative care of complex cardiothoracic surgical procedures. During fellowship, we encourage trainees to acquire and develop skills and advanced knowledge in a highly specialized area of anesthesia difficult to learn in-depth during general anesthesia training. The benefit of our institution is that the fellowship will be an important career point leading to further growth and skills in clinical care, education, high quality research and publications, and networking with other departments.
- d. The fellows will be under the direct supervision of and work closely with the cardiothoracic anesthesia attending during the clinical time in the operating room. The program provides the fellows experience, teaching, and supervision that is consistent with proper patient care. The fellows will be supervised by the teaching faculty in such a way that the fellow assumes progressively increasing responsibility and independence according to their level of education, judgment, knowledge, technical skills, and experience with a specific clinical problem and regarding all aspects of perioperative care of the cardiothoracic patient: preoperative assessment, development of anesthesia plan, and intraoperative and postoperative management.
- e. In addition, the fellows will interact closely with the resident in the cardiac rotation, providing guidance and supervision. The fellows are expected to perform both in a supervisory and teaching role as well as gaining autonomy through working with experienced faculty anesthesiologists. There are opportunities for clinical research and academic inquiry during the fellowship.
- f. We strive to promote a positive open learning environment that is stimulating for the fellows. The fellows are encouraged to express his/her opinion, point of view, and rationale about perioperative anesthetic patient management based on supporting evidence.
- g. Feedback is provided continuously in the process of faculty supervision of patient care and mentorship. Our goal is to have our fellows feel supported, encouraged, stimulated and confident in their skills.

## J. Program Description and Aims

- a. Our program offers three 1-year Adult Cardiothoracic Anesthesiology Fellowship positions to provide the most up-to-date training in the area of adult cardiothoracic anesthesiology and develop the clinical and echocardiographic skills, confidence, expertise, and collaborative approach needed for the perioperative care of complex cardiothoracic surgical procedures.

## K. Departmental Organization

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## PROGRAM POLICIES

### A. [Appointments](#) and Reappointments

#### a. Eligibility and Selection Policy

- i. Prior to their program start date, residents and fellows must provide their program with documentation as listed in the [Institutional Policies Manual](#).

#### b. Eligibility Requirements

- i. The fellowship selection committee will select from among eligible applicants based on their educational preparedness, ability, aptitude, academic credentials, communication skills and personal qualities such as motivation and integrity.
- ii. Eligibility requirements can be found on the department web site's [Application Process](#) page.

#### c. Non-discrimination Policy

- i. The Department of Anesthesiology does not discriminate with regard to sex, race, color, creed, religion, national origin, age, marital status, disability, public assistance status, veteran's status or sexual orientation.

#### d. Program Specific Visa Policies

- i. The J-1 Alien Physician Visa sponsored by ECFMG is the preferred visa status for foreign national trainees in all UMN graduate medical education programs; therefore, this program sponsors only J-1 Visas.
- ii. Individual requests outside of this policy are reviewed by and at the discretion of the Program Director.
- iii. More information on Visa Sponsorship can be found on the [UMN-GME Visa Sponsorship Policy and Eligibility and Selection Policy site](#).

#### e. Appointment and Promotion

- i. If the University reduces the size of a residency/fellowship program or closes a program, affected residents/fellows will be notified as soon as possible; and the University will make every effort within budgetary constraints to allow existing residents/fellows to complete their education.
- ii. In the unlikely event that existing residents/fellows are displaced by a program closure or reduction, the University will make every effort to assist the residents/fellows in locating another residency/fellowship program where they can continue their education.

#### f. Requirements for Completion of Training and Graduation

- i. Fellows must complete a curriculum to include at least six months of clinical anesthesia experience, to include:
  1. Cardiac experience including:
    - a. A minimum of 100 cardiac surgical procedures with at least 50 requiring CPB
    - b. A minimum of 25 aortic and/or mitral valve repairs or replacements, to include at least five mitral repairs or

replacements and five aortic repairs or replacements requiring CPB; a minimum of 25 myocardial revascularization procedures with or without CPB; (Core)

c. Management of patients undergoing procedures in each of two or more of the following categories:

- i. Adult correction/revision of congenital cardiac lesions;
- ii. Cardiac and lung transplantation
- iii. Placement of circulatory assist devices including left heart bypass, ventricular assist devices, intra-aortic balloon pumps, and ECMO
- iv. Electrophysiology procedures requiring general anesthesia.

2. Thoracic experience, including:

- a. Anesthetic management of at least 15 patients undergoing non-cardiac thoracic surgery, including procedures involving airway/lung repair, lung resection (open and/or video-assisted segmentectomy, lobectomy, and pneumonectomy), and esophageal resection/repair
- b. Anesthetic management of patients undergoing endovascular and/or open repair of the thoracic aorta, to include the management of CSF drainage

3. Each fellow is required to have at least a one-month experience managing adult cardiothoracic surgical patients in a critical care (intensive care unit (ICU)) setting.

4. Each fellow must have two months of clinical elective rotations related to the care of the cardiac patient, such as inpatient cardiology, invasive cardiology, medical (cardiology) critical care, pediatric cardiac anesthesiology, and extracorporeal perfusion.

- a. Elective rotations should be at least two weeks in duration.
- b. A research project in cardiothoracic anesthesiology may be substituted for one or two months of clinical elective rotations.

5. Fellows must perform and interpret TEE examinations such that they meet NBE requirements for certification in advanced perioperative TEE.

**g. Policy on Effect of Leave for Satisfying Completion of Program**

- i. A trainee can be absent from a program no more than 4 weeks per year. A Trainee who experiences an extended leave illness must extend his or her training program.

**B. Trainee Responsibilities and [Supervision](#)**

**a. Clinical Responsibilities**

- i. **Daily Expectations of the Fellow(s)**

1. Daily OR assignments will be made by anesthesia faculty.
2. Be dressed and ready at 6 am daily in your respective OR.
3. Assist and supervise the setup of the OR by the resident (or CRNA) and meet the patient in 3C by 6:15 am to introduce yourself to the patient.
4. Discuss last minute details of the case with anesthesia staff by 6:45am.
5. Place PIV in preop area by 6:45am (+/- arterial line as directed by faculty).
6. Accompany patient to OR 5-10 min earlier than the scheduled time (once OR room ready/yellow)
7. You are expected to:
  - a. supervise the resident (or CRNA) under Anesthesia staff supervision, or
  - b. work as a primary provider of the case under Anesthesia staff supervision.
8. Once the case is completed, assist with setup and preparation for the next case.
9. After assigned cases are finished for the day, the fellow and anesthesia staff will have a 1:1 discussion about the case(s) and daily feedback will be provided (see daily faculty-fellow interaction guideline list). Fellow should initiate this conversation by asking for feedback.
10. Review the following day's case details and discuss the case and management with the anesthesia staff and assigned resident as per rotation G&O. You are responsible for writing the preoperative anesthesia note (if working with a CRNA) or review and cosign the preanesthesia evaluation written by the resident.
11. Sign in on EPIC for every patient record you are involved with
12. TEE: you are expected to perform a pre-CPB and post-CPB TEE examination and complete the TEE note in EPIC. The TEE note should be under your login. You will keep a log of all TEE cases performed or reviewed (Google doc and personal database)
13. You are expected to finish all cases in your assigned OR unless otherwise indicated by cardiac faculty.
14. If there are no cardiac cases, you may be assigned to supervise/assist with the cath lab cases and/or thoracic cases.

**b. Call Responsibilities**

- i. UMN Cardiac OR:
  1. Call will be by week from Monday morning through Sunday evening at 19:00.
  2. Post-call Monday will be off.

3. In the event that a complex cardiac case ends between 18:00 and 21:00, the Fellow will have a full 10 hours uninterrupted hours without clinical responsibilities, and resume clinical responsibilities the following day at 07:00.
  4. In the event that a complex cardiac case ends after 21:00, the fellow will not be expected to have any clinical responsibilities the entire following day, and resume clinical responsibilities the following day after that at 07:00.
  5. You will work together to assign your calls. Once approved, the call calendar will be posted in the faculty workroom and on OpenTempo.
- ii. You will not be on call during your ICU or Regions rotations.
- c. Non-clinical and Administrative Responsibilities**
- i. Didactics Curriculum Adult Cardiothoracic Anesthesiology Fellowship
    1. The fellowship didactic curriculum will be available via drive and fellows will receive notification of activities via Google Calendar.
  - ii. Fellows will have three academic days per four weeks. One of those days will be a post call day. Fellows cannot take more than one academic day per week. Any academic day requests for a Friday or Monday need approval from the Program Director.
  - iii. Academic Expectations
    1. Attend all fellowship didactics unless on vacation or other excused absence.
    2. Attend all departmental educational activities, including Tuesday morning Grand Rounds.
    3. Attend monthly Cardiac M&M and bi-monthly Cardiac Research Meetings.
    4. Complete CITI training.
    5. Complete a QI project during the year.
    6. Complete one manuscript review per quarter.
    7. Orient residents to the cardiac service.
    8. Serve on University or hospital committee.
- d. Trainee Supervision**
- i. There must be sufficient institutional oversight to assure that trainees are appropriately supervised. Appropriate supervision means that a trainee is supervised by the teaching faculty in such a way that the trainees assume progressively increasing responsibility according to their level of education, proven ability, and experience. On-call schedules for teaching faculty must be structured to ensure that supervision is readily available to trainees on duty. The level of responsibility accorded to each trainee must be determined by the program director and the teaching faculty.
    1. Policy:
      - a. All patient care is supervised by qualified faculty

- b. The Program Director will ensure, direct, and document adequate supervision of residents and fellows at all times for their appropriate level
- c. There must be sufficient institutional oversight to assure that trainees are appropriately supervised
- d. Levels of Supervision
  - i. The fellowship program director and teaching faculty will determine the level of responsibility assigned to the fellow.
  - ii. The program director evaluates the fellow's abilities based on specific criteria (number of specific cases performed, directly observed performance by faculty, fellow review and evaluation, recommendations of CCC and per specific national standards-based criteria when available (such as SCA and ASA guidelines).
  - iii. Faculty supervision assignments will be of sufficient duration to assess the knowledge and skills of the fellow and delegate to him/her the appropriate level of patient care authority and responsibility.
  - iv. At the end of training, the fellow should have acquired the skills necessary to function as an independent consultant in Adult Cardiothoracic Anesthesiology.
  - v. Specifically:
    - 1. Each patient will have an identifiable, appropriately credentialed and privileged attending physician who is ultimately responsible for the patient's care. This information will be available to residents, fellows, faculty and patients. Fellows and faculty members will inform patients of the respective roles in each patient's care.
    - 2. It is the department's general policy that all anesthetics and procedures are supervised by the physical presence (direct supervision) of a faculty member.
    - 3. The supervising faculty will be clearly identified on the operating room and call schedule.
    - 4. Exceptions to this policy can only be made after consultation with and approval by the supervising faculty.

5. The fellow must contact the supervising faculty for this approval prior to each procedure.
  6. No anesthetic should proceed without the faculty's physical presence or clear communication between the faculty and fellow to proceed unless a life-threatening situation exists.
  7. For transfer of care to an intensive care unit or for end-of-life decisions the fellow must always communicate with the supervising faculty.
  8. At all times the faculty is fully responsible for all aspects of patient care.
  9. Under no circumstances should a fellow proceed with any procedure unless they have been well trained in performing that procedure and has received approval by their supervisory faculty or program director.
  10. The following procedures may be conducted under the faculty's indirect supervision as per our departmental policy: preoperative evaluation, consultation with surgical team, arterial line placement, central venous line placement, pulmonary artery line placement, transesophageal echocardiography probe insertion, postoperative pain control management.
  11. On-call schedules for teaching faculty will be structured to ensure that supervision is immediately and always readily available to fellows on duty.
  12. This policy applies to general anesthesia, regional anesthesia for surgical and diagnostic procedures, and monitored anesthesia care (local standby).
- vi. Direct: the supervising physician is physically present with the trainee and patient.
  - vii. Indirect: the supervising physician is physically within the hospital or other site of patient care and is immediately available to provide direct supervision. The supervising physician is not

physically present within the hospital or other site of patient care, but is immediately available by phone and/or other electronic modalities and is available to provide direct supervision

- viii. Oversight: the supervising physician is available to provide review of procedures/encounters with feedback provided after the care is delivered.

**e. Fellow Progress to a Supervisory Role**

- i. All anesthetic cases will be done with direct or indirect supervision per departmental policy (please see above).
- ii. The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to the fellow will be assigned by the program director and faculty members.
- iii. For specific procedures in which the fellow lacks experience, direct supervision will be provided.
- iv. Under indirect supervision, the faculty anesthesiologist may assign a supervisory role to the fellow in certain tasks of the perioperative anesthesia care. The goal is to allow the fellow appropriate levels of patient care, authority, and responsibility in decision making for all aspects of perioperative anesthesia care of the cardiothoracic surgical patients.

**f. Effective Fellow Behaviors**

- i. The fellow is expected to follow program policies with an understanding of their limits, scope of authority, and the circumstances under which he/she is permitted to act with conditional independence.
- ii. The resident supervised by the fellow must know the limits of his/her scope of authority, responsibility, and the circumstances under which varying levels of supervision applied by the fellow and faculty.
- iii. At any time the fellow may request the physical presence of an attending without refusal.

**g. Path of escalation for reporting concerns and conflicts of interest**

- i. Trainees should bring forward concerns of possible violations to their program (including but not limited to the Program Director, Associate Program Director, site director, Chief Resident, mentor, advisor, Vice Chair for Education, DIO, or Department Head)
- ii. If resolution is not achieved, the trainee should bring forward their concern to the Office of Graduate Medical Education (including but not limited to the Associate Dean for GME, Assistant DIO, Organizational Development Manager, or Vice Dean for Education). The trainee may complete a survey through this site.
- iii. Anonymous reporting to the institution can occur through a trainee survey or through the Office of Compliance (UReport).

- iv. Investigation of anonymous reports have been limited by the ability to collect detailed data around violations. Therefore, the DIO encourages confidential reporting to GME (to the DIO or to the Organizational Development Manager) over anonymous reporting to expedite investigation at [gme@umn.edu](mailto:gme@umn.edu).

**h. Monitoring of Fellow Well-Being**

- i. The Program Director is responsible for monitoring fellow stress, including mental or emotional conditions inhibiting performance or learning, and drug-related or alcohol-related dysfunction.
- ii. Both the Program Director and faculty should be sensitive to the need for timely provision of confidential counseling and psychological support services to fellows.
- iii. Situations that demand excessive service or that consistently produce undesirable stress on fellows will be evaluated and modified.
- iv. For more information, visit the UMN GME Health Task Force Resources: [Monitoring of Wellbeing](#)
- v. Fellows will participate in the online Wellbeing and Resilience for Physicians course through the Earl E. Bakken Center for Spirituality & Healing.

**i. Conference Attendance Requirements**

- i. The fellow is expected to attend the following conferences.
  - 1. Edwards LifeScience CT Anesthesia/CC Anesthesia Fellows Program
  - 2. SCA Annual Meeting (5 days, travel expenses covered by dept fellow fund)
    - a. Fellows are required to submit a complex case to the fellow/junior faculty program at the SCA Annual Meeting if they are going to attend
  - 3. Echo Week (5 days, travel expenses covered by dept fellow fund)
  - 4. Three local symposia (Bakken, RV Failure and Lillehei)
- ii. If the fellow does not choose to attend the aforementioned meetings then they have only 5 days to use on alternate meetings.

**C. Program Curriculum**

**a. Specialty-specific Curricula**

- i. Fellows must perform and interpret TEE examinations such that they meet National Board of Echocardiography requirements for certification in advanced perioperative TEE.



**b. Program Curriculum/Training Site Information**

**i. Clinical Training Sites and Block Schedule**

- 1.** University of Minnesota Medical Center is the main training site where the fellow will acquire the majority of the training and experience.
  - a.** For the main core rotation, the fellow will act as the primary anesthesia provider or will supervise the anesthesia resident under the direct supervision of a faculty anesthesiologist.
  - b.** The attending anesthesiologist will either be present or immediately available for induction of anesthesia, emergence from anesthesia, any procedures and any other critical portions of the anesthetic care of the patient.
  - c.** Over the course of training and as the fellow gains experience, he/she will eventually develop independence and will perform all aspects of the perioperative anesthesia care of the cardiothoracic patient. The progressive increase of autonomy will be based on the development of skills and also patient needs, and will be determined by the attending supervising anesthesiologist.
  - d.** The fellow will be evaluated on a regular basis and will also evaluate the rotation/attending anesthesiologist. The fellows will be responsible for the TEE studies performed in the cardiac operating rooms.
  - e.** Types of cases include: cardiac (pump, without CPB, CABG, valves, adult congenital, thoracic aortic surgery, thoracic aortic stents, LVADs, lung transplants, cardiac transplants). Thoracic (lobectomies, and a mix of surgeries of the esophagus, diaphragm, airway and mediastinum), peds congenital (some with CPB).
  - f.** During the Thoracic Anesthesia Rotation (4 weeks), the resident may be working with non-CV trained attendings. During this rotation, the fellow is expected to be proficient in arterial line and central line placement. Additionally, the fellow will become proficient in placing double lumen endotracheal tubes and bronchial blockers. The fellow is expected to become proficient in bronchoscopy and managing one lung ventilation.
  - g.** During the Structural Heart Rotation (4 weeks), the fellow will be expected to participate in TAVR, TMVR, MitraClip, Watchman, Amplatzer device and angiovac procedures.

h. The University of Minnesota (UMMC) Cardiothoracic Surgery program is a leader in cardiac surgery with the first successful open-heart surgery and the first implant of an artificial heart valve. It continues to be a top center for ventricular assist devices, heart and lung transplantation, and recently launched a total artificial heart program. The site is the main training site for the University of Minnesota Medical School and supports all the clinical and academic activities of the fellow's training. The fellow will have all of the standard academic support from this site including office space and support, medical library, access to electronic medical library and books, intra-departmental and cross-departmental conferences and seminars.

2. **Regions Hospital (NEW)**

- a. Fellows will be spending two 4-week rotations (total of 8 weeks) at Regions Hospital. This will be a private practice style experience working primarily with an attending and will act in a supervisory role with the CRNA.
- b. The expectations at Regions remain the same as at UMMC. They are expected to finish all cases prior to leaving for the day.
- c. The attending anesthesiologist will either be present or immediately available for induction of anesthesia, emergence from anesthesia, any procedures and any other critical portions of the anesthetic care of the patient.
- d. Over the course of training and as the fellow gains experience, he/she will eventually develop independence and will perform all aspects of the perioperative anesthesia care of the cardiothoracic patient. The progressive increase of autonomy will be based on the development of skills and also patient needs, and will be determined by the attending supervising anesthesiologist.
- e. The fellow will be evaluated on a regular basis and will also evaluate the rotation/attending anesthesiologist. The fellows will be responsible for the TEE studies performed in the cardiac operating rooms.
- f. Types of cases include: cardiac (pump, without CPB, CABG, valves, thoracic aortic surgery, thoracic aortic stents) and thoracic (lobectomies, and a mix of surgeries of the esophagus, diaphragm, airway and mediastinum).
- g. The fellows are expected to attend all remote teaching sessions via Zoom during the Regions rotation.

- h. The fellows will not be taking call of any kind during the Regions rotation. They cannot swap a call at UMMC while they are rotation at Regions hospital.
- i. The fellow is expected to attend and participate in all educational programming offered by the Regions anesthesia department during the rotation.

**c. Didactics**

- i. The program must demonstrate a judicious balance between didactic presentations and clinical care obligations.
- ii. Clinical responsibilities must not prevent the fellow from participating in the requisite didactic activities and formal instruction. The ultimate goal is to produce a consultant anesthesiologist who relates confidently and appropriately to other specialists in addition to being a competent clinical anesthesiologist.

**d. Clinical Education Requirements**

- i. Academic Expectations
  1. Attend all fellowship didactics unless on vacation or other excused absence.
  2. Attend all departmental educational activities, including Tuesday morning Grand Rounds.
  3. Attend Thursday afternoon ACTA schedule of lectures and echo rounds
  4. Attend and organize bi-monthly Journal Clubs
  5. Attend multidisciplinary conferences as directed by PD / APD / cardiac faculty.
  6. Complete a QI project during the year
  7. Prepare a Grand Rounds to present to the department. Options for Grand Rounds presentation:
    - a. QI project
    - b. Research project
    - c. M&M case
    - d. Review Topic
  8. Participation in a hospital committee is recommended.

**e. Research Requirements**

- i. **Quality Improvement Project Requirements**
  1. The fellow should be able to demonstrate the knowledge and skills necessary to effectively conduct or lead a CQI effort and demonstrate an appreciation for the need to improve quality in health care related to cardiothoracic anesthesia.
  2. The project should be collaborative and interdisciplinary in nature and should aim to build teamwork skills and foster a sense of inquiry and personal responsibility for overall healthcare for our cardiothoracic patient population. The fellow should do short (a few months) or long-term projects in groups with other residents,

faculty, or other health care providers. The project will be presented at the departmental grand rounds and might be considered for publication in peer reviewed journals.

### 3. Project proposal template

- a. Background Knowledge:
  - i. Provide a brief, nonselective summary of current knowledge of the care problem being addressed, and the characteristics of organizations in which it occurs
- b. Local Problem
  - i. Describe the nature and severity of the local specific problem or system dysfunction that was addressed
- c. Intended Improvement
  - i. Describe the specific aim of the proposed intervention (changes/improvements in care processes and patient outcomes)
  - ii. Specifies who (champions, supporters) and what (events, observations) triggered the decision to make changes
- d. Study Question
  - i. Specify specific AIM statement of the project
  - ii. Details precisely the primary improvement-related question and any secondary questions that the study of the intervention was designed to answer
- e. Implementation
  - i. Fellow should follow the Plan Do Study Act (PDSA) cycle approach
    1. Plan
      - a. Select the Opportunity for Improvement
      - b. Study the current situation
      - c. Define why improvement in this area is necessary
        - i. Health risk of the patient
        - ii. Inefficient delivery of health care
        - iii. Financial
      - d. Collect and/or review baseline data in the problem area and the current process
      - e. Analyze the causes and determine factors contributing to the problem

f. Develop a theory for improvement:

Aim statement

- i. Specific
- ii. Measurable
- iii. Processes for formulating ideas for change
- iv. Critical thinking about the current system
- v. Develop a theory for improvement: Methods
- vi. Qualitative data: Subjective
- vii. Quantitative: Objective
- viii. Form an effective team
- ix. Identify a QI mentor. Be sure to include members familiar with all the different parts of the process trying to improve.

2. Do

- a. Implement the QI plan and use it as a roadmap for implementing an integrated quality program system-wide. Identify and document problems and unexpected observations that you came across while implementing the plan.

3. Study

- a. Evaluate the QI plan and address the following questions: Did you do what you said you were going to do? Why? Why not? What were the results? How can next year be better? What modifications should be made?

4. Act

- a. On the lessons learned, revise the QI plan for next year, and monitor the plan regularly to determine whether it remains successful over time. Evaluate the QI plan annually.

**f. Evaluations and Outcomes Assessment**

- i. Evaluation Process

1. Fellows will receive regular discussion and feedback on a case by case or daily basis from faculty.
  2. There will be a written evaluation after each rotation completed individually by attending faculty or as a consensus evaluation by the faculty who worked with the fellow during that rotation.
    - a. This is an assessment of the Fellow's performance during any clinical rotation and will become part of the permanent file and the Program Director will review with the fellow.
- ii. Evaluation Tools
1. Evaluation tools used may also include:
    - a. Faculty evaluation of participant
    - b. Program director evaluation of participant
    - c. 360 degree evaluation of participant
    - d. Participant evaluation of rotation
    - e. Participant evaluation of faculty/program director
    - f. Participant evaluation of program
    - g. In-training exams
- iii. Evaluation methods:
1. Feedback and discussion during grand round presentation
  2. Discuss with QI mentor and team
  3. Feedback from peer review journal comments submission

#### **D. ACGME General Competencies**

- a. The ACGME competencies are tied to all Goals and Objectives in the various CNP fellowship training tracks and rotations defined below.
  - i. Patient Care (PC) 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.
  - ii. Medical Knowledge (MK) 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.
  - iii. Practice-Based Learning and Improvement (PBLI) Fellows are expected to develop skills and habits to be able to meet the following goals:
    1. Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; and,
    2. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems.
  - iv. Interpersonal and Communication Skills (ICS) Fellows must demonstrate interpersonal and communication skills that result in the effective

exchange of information and collaborations with patients, their families, and health professionals.

- v. Professionalism (Prof) Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.
- vi. Systems-based Practice (SBP) 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.

### E. Clinical Rotations and Block Schedule

	July 29-Aug 2	Aug 5-9	Aug 12-16	Aug 19-23	Aug 26-30	Sept 2-6	Sept 9-13	Sept 16-20
Fellow 1	Orientation	UMN	UMN (call)	Thoracic	Thoracic	Structural Heart	Structural Heart (call)	UMN
Fellow 2	Orientation	UMN	UMN	UMN (call)	UMN (echo)	UMN (echo)	UMN	Thoracic (call)
Fellow 3	Orientation	UMN	UMN	UMN	UMN (call)	UMN	UMN (echo)	UMN (echo)

	Sept 23-27	Sept 30 - Oct 4	Oct 7-11	Oct 14-18	Oct 21-25	Oct 28 – Nov 1	Nov 4-8	Nov 11-15
Fellow 1	UMN	Regions	Regions	Regions	Regions	UMN (call)	UMN (echo)	UMN (echo)
Fellow 2	Thoracic	Structural Heart	Structural Heart	UMN (call)	UMN	Regions	Regions	Regions
Fellow 3	UMN (call)	UMN	UMN	Thoracic	Thoracic (call)	Structural Heart	Structural Heart	UMN (call)

	Nov 18-22	Nov 25-29 (Thanksgiving)	Dec 2-6	Dec 9-13	Dec 16-20	Dec 23-27 (Christmas)	Dec 30-Jan 3 (New Years)	Jan 1-10
Fellow 1	UMN (call)	UMN	UMN (elective)	UMN (elective)	UMN (call)	UMN	UMN	UMN
Fellow 2	Regions	UMN (call)	UMN	UMN	UMN	UMN (call)	UMN	UMN
Fellow 3	UMN	Regions	Regions	Regions	Regions	UMN (elective)	UMN (elective)	UMN (call)

	Jan 13-17	Jan 20-24	Jan 27-31	Feb 3-7	Feb 10-14	Feb 17-21	Feb 24 - 28	Mar 3-7
Fellow 1	Thoracic (call)	Thoracic	Structural Heart	Structural Heart	UMN (call – this may be moved to the following week, pending)	UMN	Regions	Regions

					SCA Echo week date)			
Fellow 2	UMN ICU	UMN ICU	UMN ICU	UMN ICU	Thoracic	Thoracic	Structural Heart (call)	Structural Heart
Fellow 3	UMN	UMN	UMN (call)	UMN	UMN ICU	UMN ICU	UMN ICU	UMN ICU

	Mar 10-14	Mar 17-21	Mar 24-28	Mar 31 - Apr 4	Apr 7-11	Apr 14-18	Apr 21-25	Apr 28 - May 1 (SCA)
Fellow 1	Regions	Regions	UMN ICU	UMN ICU	UMN ICU	UMN ICU	UMN ()	UMN
Fellow 2	UMN	UMN (call)	Regions	Regions	Regions	Regions	UMN (call)	UMN
Fellow 3	UMN	UMN	UMN (call)	UMN	Thoracic	Thoracic (call)	Structural Heart	Structural Heart

	May 5-9	May 12-16	May 19-23	May 26-30	June 2-6 (Graduation)	June 9-13	June 16-20	Jun 23-27
Fellow 1	UMN (call)	UMN	UMN ()	UMN (call)	UMN (echo)	UMN (echo)	UMN	UMN
Fellow 2	UMN (elective)	UMN (elective)	UMN	UMN	UMN	UMN (call)	UMN (echo)	UMN (echo)
Fellow 3	UMN	UMN (call)	Regions	Regions	Regions	Regions	UMN	UMN (perfusion)

	Jun 30 – Jul 4 (4 <sup>th</sup> of July)	Jul 7-11, 2023	Jul 14-18, 2023	Jul 21-25 (PTE Exam)	Jul 28-Aug 1		
Fellow 1	UMN	UMN (perfusion)	UMN (perfusion)	UMN	UMN		
Fellow 2	UMN (call)	UMN	UMN	UMN (perfusion)	UMN (perfusion)		
Fellow 3	UMN (perfusion)	UMN (call)	UMN (echo)	UMN (echo)	UMN		

## F. Competency-based Goals & Objectives

- a. **Adult Cardiac Anesthesiology Rotation - UMMC:** by the end of the rotation, the fellow will be expected to:
  - i. Provide compassionate, appropriate, and effective medical care for adult patients presenting for cardiac surgery. (PC, PROF)



- ii. Communicate effectively to patients the risks and benefits of the anesthetic involved for their procedure/intervention. (PC, PROF, ICS)
- iii. Convey information and educate the patient and their families regarding the interventions. (PC, PROF, ICS)
- iv. Demonstrate sensitivity to patient's and their families' concerns and questions regarding the anesthetic plan and intervention and handle them in a caring and respectful demeanor. (PC, PROF, ICS)
- v. Gather essential and accurate information about the patient including relevant preoperative history and physical, laboratory workup, diagnostic tests, consultation services and other medical data. (MK, PBLI, SBP)
- vi. Synthesize patient information and formulate an anesthetic management plan for anesthetic induction, maintenance and emergence, perioperative hemodynamic monitoring, and postoperative care. (MK, PBLI)
- vii. Carry out the anesthetic plan for the patient under the direct supervision of an Attending Cardiac Anesthesiologist. (ICS, MK, PROF, PC)
- viii. Prepare in an orderly and efficient manner all equipment, supplies and medications needed to conduct safe anesthesia. (PROF, PC, MK)
- ix. Form a management plan for initiation, maintenance, and separation from cardiopulmonary bypass. (MK, PC)
- x. Anticipate, prevent, detect and manage common and uncommon perioperative problems and complications. (MK, PC)
- xi. Perform technical procedures indicated for the patient care in an appropriate, safe and efficient manner. Fellows should be able to expertly perform placement of:
  - 1. Arterial catheter (PC, MK)
  - 2. Central venous catheters (PC, MK)
  - 3. Pulmonary artery catheters (PC, MK)
  - 4. TEE probe (PC, MK)
  - 5. Epidural catheters (lumbar and thoracic) (PC, MK)
  - 6. Paravertebral catheters (PC, MK)
- xii. Acquire and interpret hemodynamic data and to utilize this information in the ongoing anesthetic management of the patient from the following monitoring devices:
  - 1. Invasive arterial blood pressure monitoring (MK, PC)
  - 2. Central venous pressure and Pulmonary artery monitoring and waveform analysis (MK, PC)
  - 3. Cardiac output and mixed venous oxygen saturation (MK, PC)
  - 4. Cerebral oximetry (MK, PC)
  - 5. Transesophageal echocardiography (MK, PC)
  - 6. Activating Clotting Time (MK, PC)
  - 7. Thromboelastography (MK, PC)

- xiii. Transport safely patients from the OR to the ICU or PACU and vice versa with attention given to the hemodynamic, sedative and pain control. (PC, MK)
- xiv. Perform patients' handoff of care that is complete, clear, and timely. (PC, ICS, PROF)
- xv. Manage patients with mechanical assist devices, including ECMO, intra-arterial balloon counterpulsation, left and right ventricular assist devices and biventricular assist devices. (MK, PC)
- xvi. Effectively communicate with the operating room staff including perfusionists, surgeons, nurses and critical care associates. (ICS, PROF, PC)
- xvii. Use information technology to optimize patient care. (MK, PC)

**b. Advanced Perioperative Echocardiography Rotation**

- i. During this rotation, time will be spent in the cardiology echocardiography lab and the cardiac operating rooms performing and reading transesophageal echocardiography studies.
- ii. The fellow will be supervised by an attending cardiologist while in the cardiology lab and by an attending cardiac anesthesiologist while in the cardiac operating rooms.
- iii. In addition, the fellow will spend time with the sonographers in the echocardiography laboratory to learn transthoracic echocardiography.
- iv. During the rotation the fellow is only focused on echocardiography and he/she is not to be used for other anesthesia related duties.
- v. By the end of the rotation, the fellow will be expected to:
  1. Operate ultrasonographs including the primary controls affecting the quality of the displayed data. (MK, PBLI)
  2. Insert a TEE probe safely in the anesthetized, endotracheally intubated patient. (MK, PBLI, PC)
  3. Perform a comprehensive TEE examination and differentiate normal from markedly abnormal cardiac structures and function. (MK, PBLI)
  4. Recognize marked changes in segmental ventricular contraction indicative of myocardial ischemia or infarction. (MK, PBLI)
  5. Recognize marked changes in global ventricular filling and ejection. (MK, PBLI)
  6. Recognize air embolization. (MK, PBLI)
  7. Recognize gross valvular lesions and dysfunction. (MK, PBLI)
  8. Recognize large intracardiac masses and thrombi. (MK, PBLI)
  9. Detect large pericardial effusions. (MK, PBLI)
  10. Recognize common echocardiographic artifacts. (MK, PBLI)
  11. Communicate echocardiographic results effectively to healthcare professionals, the medical record, and patients. (PROF, ICS, PC)
  12. Recognize complications of perioperative echocardiography. (MK)

13. Acquire or direct the acquisition of all necessary echocardiographic data, including epicardial and epiaortic imaging. (MK, PBLI)
  14. Recognize subtle changes in segmental ventricular contraction indicative of myocardial ischemia or infarction. (MK, PBLI)
  15. Ability to quantify systolic and diastolic ventricular function and to estimate other relevant hemodynamic parameters. (MK, PBLI)
  16. Quantify normal and abnormal native and prosthetic valvular function. (MK, PBLI)
  17. Assess the appropriateness of cardiac surgical plans in relation to the echocardiography study. (MK, PROF, PC)
  18. Identify inadequacies in cardiac surgical interventions and the underlying reasons for the inadequacies. (MK, PC)
  19. Perform real-time or live 3D echocardiography imaging (live 3D narrow volume, live 3D zoomed, and live 3D wide angled full volume, and live 3D color Doppler) and electrocardiographically triggered multiple-beat 3DE imaging. (MK, PBLI)
  20. Use the different controls for post-acquisition image processing such as gain optimization, cropping, and rotation in order to focus in the area of interest. (MK)
  21. Aid in clinical decision making in the operating room. (MK, PROF, PC)
- vi. The fellow will be expected to understand/recognize:
1. The physical principles of echocardiographic image formation and blood velocity measurement. (MK, PBLI)
  2. The operation of ultrasonography machines, including all controls that affect the quality of data displayed. (MK, PBLI)
  3. The equipment handling, infection control, and electrical safety associated with the techniques of perioperative echocardiography. (MK, PBLI)
  4. The indications, contraindications, and potential complications for perioperative echocardiography. (PC, MK, PBLI, SBP)
  5. Appropriate alternative diagnostic techniques. (MK, PC, SBP)
  6. The normal tomographic anatomy as revealed by perioperative echocardiographic techniques. (MK, PC)
  7. The commonly encountered blood flow velocity profiles as measured by Doppler echocardiography. (MK)
  8. The echocardiographic manifestations of native valvular lesions and dysfunction. (MK, PC)
  9. The echocardiographic manifestations of cardiac masses, thrombi, cardiomyopathies, pericardial effusions, and lesions of the great vessels. (MK, PC)

10. The echocardiographic presentations of myocardial ischemia and infarction. (MK, PC)
11. The echocardiographic presentations of normal and abnormal ventricular function. (MK, PC)
12. The echocardiographic presentations of air embolization. (MK, PC)
13. The principles and methodologies of qualitative and quantitative echocardiography (MK, PROF, SBP).
14. Native and prosthetic valvular function, including valvular lesions and dysfunction. (MK)
15. Basic echocardiographic features of congenital heart disease (MK, PC)
16. All other diseases of the heart and great vessels that are relevant in the perioperative period (if pediatric practice is planned, then this knowledge may be more general than detailed). (MK, PC)
17. The techniques, advantages, disadvantages, and potential complications of commonly used cardiac surgical procedures for treatment of acquired and congenital heart disease. (MK, PBLI, SBP)
18. Other diagnostic methods appropriate for correlation with perioperative echocardiography. (SBP, MK, PC)

**c. Adult ICU Rotation - UMMC**

- i. A minimum of one month will be spent in the Cardiac Intensive Care Unit. Additional time may be scheduled during the elective months.
- ii. The Cardiac ICU houses critically ill patients requiring either post-operative care following cardiac surgical procedures, lung transplantation or critical care for cardiac medicine patients.
- iii. The ICU managing team consists of attending cardiac surgeons, cardiologist, surgery and cardiology residents and fellows, nurse practitioners and consultation services from pulmonary and critical care medicine.
- iv. Close interaction is maintained with the cardiac surgical faculty, cardiologist and fellows, as well as the lung and heart transplant coordinators.
- v. Fellows will function as integral members of the ICU team. Responsibilities will include:
  1. Provide postoperative assessment and care for patients who have undergone major pulmonary and cardiac surgical procedures.
  2. Follow patients from initial ICU admission to discharge.
  3. The fellow will be the primary provider of care (with supervision by the attending physician) for these patients and will be expected to gather information, present the patient at morning rounds, write the notes, put in orders, insert/remove any lines necessary

and coordinate or execute any patient care activities necessary throughout the day.

4. The fellow will be responsible for supervising residents in the ICU.
5. During the ICU rotation, the fellow will take calls at-home (pager) call in the cardiothoracic OR from 6 PM to 7AM approximately every fourth night averaged over a four-week period. This will foster continuity of care of emergent cases from the intraoperative to postoperative period and enhance the fellow's learning experience. A 10-hour rest period will always be provided between clinical working hours. At no time will the fellow be permitted to work more than 80 hours per week including the call time.
6. Fellows should be aware of the protocols that are utilized in the ICU.
7. The fellows will be present M-F (not on weekends) in the ICU unless they have other scheduled didactic/clinical duties.
8. Evaluations will be carried out by the supervisor attendings and feedback will be provided daily.
9. By the end of the rotation, the fellow will be expected to:
  - a. Provide compassionate, appropriate, and effective medical care for postoperative patients admitted to the cardiac surgical ICU. (PC, PROF, ICS, SBP)
  - b. Communicate and update effectively to patients and families of their condition. (PC, PROF, ICS)
  - c. Convey information and educate the patient and their families regarding the interventions. (PC, PROF, ICS)
  - d. Demonstrate sensitivity to patient's and their families' concerns and questions regarding the patient's progress and handle them in a caring and respectful demeanor. (PC, PROF)
  - e. Evaluate and manage patients following routine cardiopulmonary bypass, including diagnosis and management of heart failure, valvular dysfunction, hypothermia, respiratory failure, acute renal failure, acid-base abnormality, postoperative bleeding/coagulopathy, and cerebrovascular events. (MK, PBLI)
  - f. Resuscitate patients presenting with cardiac arrest, hypotension, and/or shock. (MK, PBLI)
  - g. Diagnose and manage patients with ischemic heart disease, including the diagnosis of acute myocardial infarction, the interpretation of EKG and TTE findings, the appropriate use of vasoactive agents, indications for IABP,

- and the use of interventional cardiology vs. surgical management. (PC, MK, PBLI, SBP)
- h. Manage patients with valvular heart disease, including assessment of severity and determination of physiologic goals. (PC, MK, PBLI)
  - i. Evaluate and manage patients with systolic or diastolic dysfunction including the rational use of vasoactive and inotropic agents. (PC, MK, PBLI)
  - j. Evaluate and manage acute and chronic arrhythmias, symptomatic and asymptomatic, including the choice of antiarrhythmic agent, the indications and use of electrical cardioversion, and the management of transvenous, external and internal pacing. (PC, MK, PBLI)
  - k. Understand the appropriate placement of transvenous pacing wires, pace-port catheters. (MK)
  - l. Manage patients with pulmonary hypertension and/or right ventricular failure. (PC, MK, PBLI, SBP)
  - m. Manage patients with mechanical assist devices, including ECMO, intra-arterial balloon counterpulsation, left and right ventricular assist devices and biventricular assist devices. (PC, MK, PBLI, SBP)
  - n. Manage patients with heart, lung, or heart-lung transplant during the perioperative period, including management of immunosuppressive regimens. (PC, MK, PBLI, SBP)
  - o. Manage the patient with aortic or peripheral vascular disease, including aneurysm, dissection, and ischemia. (PC, MK, PBLI, SBP)
  - p. Manage adult patients with congenital heart disease, pre and post repair. (PC, MK, PBLI, SBP)
  - q. Evaluate and assess the post-sternotomy patient with fever, including appropriate evaluation for sternal wound infection. (PC, MK, PBLI)
  - r. Be proficient in the placement and monitoring of venous access devices, arterial monitoring lines, PA catheters, and chest tubes as indicated. (PC, MK, PBLI)
  - s. Manage common critical care problems including:
    - i. DVT prophylaxis (MK, PC, SBP)
    - ii. Stress ulcer prophylaxis (MK, PC, SBP)
    - iii. Pulmonary toilet / bronchodilators / VAP prophylaxis (MK, PC, SBP)
    - iv. Perioperative heart rate and blood pressure control (MK, PC, SBP)

- v. Renal protection prior to use of dyes for diagnostic procedures (MK, PC, SBP)
  - vi. Provide sedation and analgesia to postoperative CTICU patients (PC, MK, ICS, SBP)
  - t. Promote a safe handoff process of ICU patient care and a safe transport of critically ill patients. (PC, PROF, ICS, SBP)
10. By the end of the ICU rotation, the fellow should be able to:
- a. Demonstrate knowledge and manage appropriately postoperative problems of the major organ systems:
    - i. Cardiovascular system (MK, PBLI, SBP)
      - 1. Hemodynamic instability
      - 2. Fluid disturbances
      - 3. Arrhythmias
      - 4. Cardiac arrest
      - 5. Shock state
      - 6. Pulmonary embolism
    - ii. Pulmonary system (MK, PBLI, SBP)
      - 1. Hypoxemia, hypercapnia, ARDS
      - 2. Failed extubation
      - 3. Pulmonary failure using available ventilatory modes
      - 4. Need for surgical airway
    - iii. Neurologic system (MK, PBLI, SBP)
      - 1. Postoperative confusion and delirium
      - 2. Stroke
      - 3. Seizures
    - iv. Renal system (MK, PBLI, SBP)
      - 1. Oliguria
      - 2. Electrolyte abnormalities
      - 3. Worsening renal insufficiency
      - 4. Renal replacement therapy
    - v. Hepatic system (MK, PBLI, SBP)
      - 1. Jaundice
      - 2. Coagulopathy
      - 3. Hepatic failure
    - vi. Hematologic system (MK, PBLI, SBP)
      - 1. Bleeding and coagulopathy
      - 2. Anemia
      - 3. Thrombocytopenia
      - 4. Heparin induced thrombocytopenia
    - vii. Endocrine system (MK, PBLI, SBP)
      - 1. Glycemic control and diabetes mellitus management

- 2. Adrenal insufficiency
  - 3. SIADH
- viii. Immune System (MK, PBLI, SBP)
  - 1. Postoperative fever
  - 2. Appropriate selection of antibiotics and duration of therapy
  - 3. Prevention, evaluation, and treatment of common infections in the cardiac surgical patient such as wound infections, urinary tract infection, ventilator associated pneumonia, catheter-related infection, and sepsis.
- ix. Be aware of the indications for and appropriately utilize blood component therapy including packed red blood cells, platelets, fresh frozen plasma, cryoprecipitate, recombinant Factor VIIa (MK, PBLI, SBP)
- x. Understand the current AHA/ACC guidelines for CPR and resuscitation. (MK, PROF, PC)

**d. Adult Cardiac Catheterization Lab Rotation**

- i. This is an elective two weeks rotation in the Cardiac Catheterization and Electrophysiology Laboratory.
- ii. Supervision will be provided by the Attending Cardiologist.
- iii. The rotation will be primarily observational. It will depend on the fellow's motivation and interest and the willingness of the Attending Cardiologist to have the fellow participate in a hands-on manner.
- iv. By the end of the rotation, the fellow should be able to:
  - 1. Understand the indications, limitations, complications and medical and surgical implications of the findings at cardiac catheterization and angiography. (MK, PC)
  - 2. Understand the interventional procedures including angioplasty, stenting, and transcatheter laser and mechanical ablations. (MK, PC)
  - 3. Understand the pathophysiology of cardiovascular disease and the ability to interpret hemodynamic and angiographic data. (MK, PBLI, PC)
  - 4. Understand the fundamental principles of shunt detection, cardiac output determination (PC, MK)
  - 5. Understand arrhythmias as well as the indications for device placement versus medical therapy. (PC, MK)
  - 6. Be able to describe non-invasive cardiovascular evaluation: electrocardiography, transthoracic echocardiography, TEE, stress testing, cardiovascular imaging. (MK, PC, ICS)



7. Describe indications for and the process of pacemaker/automated implantable cardioverter defibrillator insertion and modes of action. (PC, MK)

**e. Extracorporeal Perfusion Rotation**

- i. This is an elective two-weeks rotation in the Cardiac Operating Rooms of the University of Minnesota Medical Center Fairview.
- ii. Supervision will be provided by the Chief Perfusionist, staff perfusionists and Attending Cardiac Anesthesiologists.
- iii. The overall goal of the rotation is to provide an in depth understanding of the mechanism of cardiopulmonary bypass, perfusion systems, mechanical support devices and manage emergencies related to these devices. (MK, PC, PBLI)
- iv. By the end of the rotation, the fellow should be able to:
  1. Describe the physiologic and pathologic consequences related to the use of extracorporeal circulation and cardiopulmonary bypass (CPB). (MK, PC, PBLI)
    - a. Endocrine and inflammatory/immune system effects
    - b. Neurologic effects
    - c. Renal effects
    - d. Lung effects
    - e. Gastrointestinal system effects
  2. Understand myocardial protection during CPB and the components of cardioplegia and delivery modes. (MK, PBLI)
    - a. Understand the physiology of membrane oxygenators, perfusion systems and systems of ventricular support. (MK, PBLI)
    - b. Understand the design and function of the cardiopulmonary bypass machine. (MK, PBLI)
    - c. Describe appropriate methods of cannulation. (MK, ICS)
    - d. Assess the adequacy of perfusion oxygenation/ventilation, basic hemodynamic monitoring, acid/base and electrolytes balance, temperature management, and fluid management during cardiopulmonary bypass. (MK, PBLI)
    - e. Understand the initiation, maintenance and separation from CPB. (MK, PBLI)
    - f. Describe common cause of CPB machine malfunctions and troubleshooting. (MK, PBLI, SBP)
    - g. Understand and manage common CPB emergencies including cannulae malposition, massive air embolism, air lock, and arterial dissection. (MK, PBLI, SBP)
    - h. Know how to manage electrical power failures while on CPB and use of battery back-up or hand crank systems to allow manual pumping. (MK, PBLI, PC)

- i. Understand and manage anticoagulation during CPB and its complications. Specifically: (MK, PBLI, PC)
  - i. Heparin resistance
  - ii. Heparin induced thrombocytopenia
  - iii. Alternatives to heparin
  - iv. Monitoring and reversal of anticoagulation
- j. Understand the components of cardioplegia and delivery systems. (PC, MK, PBLI)
- k. Define the different mechanical circulatory support devices and understand their indications and contraindications: (MK, PC, PBLI)
  - i. IABP
  - ii. ECMO
  - iii. Left and right ventricular assist devices (percutaneous, implantable, temporary)
  - iv. Biventricular assist devices
  - v. Total artificial heart

**f. Pediatric Congenital Heart Disease Rotation**

- i. This is a two-week or one-month elective rotation in the pediatric cardiothoracic operating rooms.
- ii. The rotation will be performed at the University of Minnesota Masonic Children's Hospital.
- iii. The Fellow will act as the primary anesthesia provider under the direct supervision of an Attending Pediatric Cardiac Anesthesiologist.
- iv. Over the course of training, and as the fellow gains experience he/she will eventually develop independence and will be performing all aspects of the perioperative anesthesia care of the pediatric cardiothoracic patient. The progressive increase of autonomy will be based on the development of skills and will be determined by the attending supervising anesthesiologist.
- v. The fellow will be evaluated on a regular basis and will also evaluate the rotation/attending anesthesiologist.
- vi. By the end of the rotation, the fellow should be able to:
  - 1. Provide compassionate, appropriate, and effective medical care for pediatric patients presenting for cardiac surgery. (PC, ICS)
  - 2. Communicate effectively to families/patients the risks and benefits of the anesthetic involved for their procedure/intervention. (PROF, PC, ICS)
  - 3. Demonstrate sensitivity to patient's and their families' concerns and questions regarding the anesthetic plan and intervention and handle them in a caring and respectful demeanor. (PC, ICS, PROF)technology

4. Gather essential and accurate information about the patient including relevant preoperative history and physical, laboratory workup, diagnostic tests, consultation services and other medical data. (PC, PBLI, SBP, MK)
5. Synthesize patient information and formulate an anesthetic management plan for anesthetic induction, maintenance and emergence, perioperative hemodynamic monitoring, and postoperative care of pediatric congenital heart disease patients. (MK, PBLI, PC)
6. Carry out the anesthetic plan for the patient under the direct supervision of the Pediatric Attending Cardiac Anesthesiologist. (PC, MK, PBLI)
7. Prepare in an orderly and efficient manner all equipment, supplies and medications needed to conduct safe anesthesia in pediatric patients with congenital heart disease. (PROF, PC)
8. Form a management plan for initiation, maintenance, and separation from cardiopulmonary bypass. (PC, MK, PBLI)
9. Anticipate, prevent, detect and manage common and uncommon perioperative problems and complications. (MK, PC, PBLI)
10. Perform technical procedures indicated for the pediatric patient in an appropriate, safe and efficient manner: (MK, PC, PBLI)
  - a. Arterial catheter
  - b. Central venous catheters
  - c. TEE probe
11. Safely transport pediatric patients from the OR to the ICU or PACU and vice versa with attention given to the hemodynamic management, sedation, and pain control. (PC, PROF, SBP, MK)
12. Perform patients' handoff of care that is complete, clear, and timely. (PROF, PC, ICS)
13. Manage pediatric patients with mechanical assist devices, including ECMO, Berlin heart or biventricular assist devices. (MK, PBLI, PC)
14. Effectively communicate with the operating room staff including perfusionists, surgeons, nurses, and critical care associates. (PC, PROF, ICS)
15. Use information technology to optimize patient care. (PC, MK, PBLI)
16. By the end of the rotation, the fellow should be able to:
  - a. Understand the anatomic and physiologic differences in children as compared to adults. (MK, PBLI)
  - b. Understand the pediatric and congenital cardiac physiology. (MK, PBLI)

- c. Understand pediatric critical care pharmacology: inotropes and vasoactive agents, basic antibiotic therapy, common sedatives and analgesics, drug pharmacokinetics and monitoring of side effects. (MK, PBLI)
- d. Understand the pathophysiology of cyanotic and non-cyanotic pediatric congenital heart lesions and interpret cardiac catheterization and echocardiographic data. (MK, PBLI)
- e. Appreciate the natural history, medical management and surgical repair of pediatric congenital heart lesions. (MK, PBLI)
- f. To demonstrate safe placement and use of invasive lines: arterial and central venous catheters and insertion of the TEE probe. (MK, PBLI, PC)
- g. Understand the indications, utility, interpretation, and complications of the various transthoracic intracardiac lines (left and right atrial lines, pulmonary arterial lines). (MK, PBLI, PC)
- h. Learn the principles of cardiopulmonary bypass in children. (PC, MK, PBLI)
- i. Appreciate and learn the different anesthesia techniques for the different types of congenital heart surgery. (MK, PC, PBLI)
- j. Understand the various cannulation and perfusion techniques that are used in congenital cardiac repairs (deep hypothermic cardiac arrest, regional low-flow perfusion, bicaval cannulation, temperature adjusted cardiopulmonary bypass flows) (MK, PC, PBLI)
- k. Learn various strategies to ensure adequate myocardial protection (PC, MK, PBLI)
- l. Recognize the anatomy for most common congenital heart defect and understand the surgical repair/palliation: (MK, PC, PBLI)
  - i. Atrial septal defect
  - ii. Ventricular septal defect
  - iii. Patent ductus arteriosus
  - iv. Complete A-V canal defect
  - v. Tetralogy of Fallot
  - vi. Hypoplastic left heart syndrome
  - vii. Single Ventricle other than above
- m. Understand the management of arterial blood gases. (PC, MK)

- n. Know the strategies for altering systemic and pulmonary vascular resistances to manipulate shunt blood flow. (MK, PC, PBLI)
- o. Know the indications for and antibiotic choice for subacute bacterial endocarditis prophylaxis. (MK, PC, PBLI)
- p. Become familiar with intraoperative TEE in pediatric congenital heart disease. (MK, PC, PBLI)
- q. Become familiar with the anesthetic management of pediatric cardiac catheterization procedures including hybrid procedures. (PC, MK, PBLI)
- r. Understand the principles of the postoperative management of pediatric cardiac surgery patients. (MK, PC)
- s. Understand and implement the current ACC/AHA guidelines for acute resuscitation of pediatric patients using the PALS and APLS algorithms. (PROF, PC, MK, PBLI)
- t. Understand the psychosocial impact of congenital heart disease on patients and their families. (PC, SBP, MK)

**g. Regions Hospital Rotation (NEW)**

- i. Fellows will be spending two 4-week rotations (total of 8 weeks) at Regions Hospital. This will be a private practice style experience working primarily with an attending and will act in a supervisory role with the CRNA.
- ii. The expectations at Regions remain the same as at UMMC. They are expected to finish all cases prior to leaving for the day.
- iii. The attending anesthesiologist will either be present or immediately available for induction of anesthesia, emergence from anesthesia, any procedures and any other critical portions of the anesthetic care of the patient.
- iv. Over the course of training and as the fellow gains experience, he/she will eventually develop independence and will perform all aspects of the perioperative anesthesia care of the cardiothoracic patient. The progressive increase of autonomy will be based on the development of skills and also patient needs, and will be determined by the attending supervising anesthesiologist.
- v. The fellow will be evaluated on a regular basis and will also evaluate the rotation/attending anesthesiologist. The fellows will be responsible for the TEE studies performed in the cardiac operating rooms.
- vi. Types of cases include: cardiac (pump, without CPB, CABG, valves, thoracic aortic surgery, thoracic aortic stents) and thoracic (lobectomies, and a mix of surgeries of the esophagus, diaphragm, airway and mediastinum).
- vii. The fellows are expected to attend all remote teaching sessions via Zoom during the Regions rotation.

- viii. The fellows will not be taking call of any kind during the Regions rotation. They cannot swap a call at UMMC while they are rotation at Regions hospital.
- ix. The fellow is expected to attend and participate in all educational programming offered by the Regions anesthesia department during the rotation.

#### **h. Structural Heart Rotation**

- i. The fellow will have two 2-week rotations (total of 4 weeks) in the performing structural heart procedures with the interventional cardiology and structural heart team.
- ii. Supervision will be provided by the Attending Anesthesiologist but will have a lot of interaction with the cardiologists..
- iii. The fellow is expected to participate with the cardiologist in the echo (TTE and TEE) for structural heart procedures, including but not limited to TAVR, TMVR, MitraClip, Tricuspid clips, Watchman, Amplatzer and angiovac procedures.
- iv. By the end of the rotation, the fellow should be able to:
  - 1. Understand the indications, limitations, complications and medical and surgical implications of the findings at cardiac catheterization and angiography. (MK, PC)
  - 2. Understand the pathophysiology of cardiovascular disease and the ability to interpret hemodynamic and angiographic data. (MK, PBLI, PC)
  - 3. Understand the fundamental principles of shunt detection, cardiac output determination (PC, MK)
  - 4. Understand arrhythmias as well as the indications for device placement versus medical therapy. (PC, MK)
  - 5. Be able to describe non-invasive cardiovascular evaluation: electrocardiography, transthoracic echocardiography, TEE, stress testing, cardiovascular imaging. (MK, PC, ICS)

#### **v. Thoracic Anesthesia Rotation**

- 1. The fellow will have two 2-week thoracic anesthesia rotations (total of 4 weeks). They will be supervised by an attending anesthesiologist during this rotation.
- 2. The case types during this rotation include, but are not limited to procedures involving airway/lung repair, lung resection (open and/or video-assisted segmentectomy, lobectomy, and pneumonectomy), and esophageal resection/repair
- 3. During this rotation, the fellow is expected to be proficient in arterial line and central line placement. Additionally, the fellow will become proficient in placing double lumen endotracheal tubes and bronchial blockers. The fellow is also expected to become proficient in bronchoscopy and managing one lung ventilation.

#### **i. Research Rotation**

- i. This is an elective one-month rotation in research.
- ii. By the end of this month, the fellows should have developed an understanding of research methodology and principles and will be expected to publish in peer-reviewed journals or present their work at local, regional or national professional meetings.
- iii. The fellow will be apprenticed to an experienced mentor who has the time and experience to work with the fellow.
- iv. The rotation will be performed at the University of Minnesota Medical Center Fairview.
- v. The fellow will be evaluated by the mentor and will also evaluate the rotation/attending anesthesiologist.

j.

#### **G. Life Support Certification Requirements**

- a. Fellows are required to have current certification in BLS and ACLS.

#### **H. Annual evaluation of program goals and objectives**

- a. The Program Evaluation committee (PEC) including fellows meets annually and plays an active role in:
  - i. Planning, developing, implementing and evaluating educational activities of the Program.
  - ii. Reviewing and making recommendations for revision of competency-based curriculum goals and objectives.
  - iii. Addressing areas of non-compliance with ACGME standards.
  - iv. Reviewing the program annually using evaluations of faculty, residents, and others.
  - v. Actively ensuring a continual quality improvement process regarding program outcomes

#### **I. Semi-Annual Evaluation**

- a. The Clinical Competency Committee (CCC) will meet twice yearly to discuss fellow performance and complete the Milestone evaluation.
- b. Each Fellow will meet with the Program Director or Associate Program Director semi-annually to discuss his or her performance.
- c. The purpose of these meetings is to provide feedback to the Fellow, discuss areas of deficiency requiring special attention, and provide counseling on career development.

## PROGRAM PROCEDURES

### A. Attendance

- a. Fellows are expected to report for duty per the rotation specific instructions given above. In case of sickness or unexpected absence, fellows should notify attending staff at the rotation site as soon as possible.

### B. Clinical and Educational Work Hours

- a. Work hours are defined as all clinical and academic activities related to the program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care; time spent in-house during call activities, and scheduled activities, such as conferences. Work hours do *not* include reading and preparation time spent away from the work site.
  - i. Max Hours per Week
    1. Work hours must not exceed 80 hours per week averaged over a four week period inclusive of call and moonlighting activities
  - ii. Continuous Work Hours
    1. Fellows must not exceed 24 hours. Trainees may spend an additional 4 hours to hours to complete transitions in care. Trainees must have at least 14 hours free after 24 hours of in-house duty.

### C. Work Hours Policy

- a. The purpose of this policy is to outline ACGME work hour requirements and the responsibilities of the fellows, the program, and the sponsoring institution.
- b. Policy Statement: all programs are required to adhere to and monitor compliance of their trainees with the ACGME duty hour standards as outlined in the revised ACGME Common Program Requirements. Programs must also follow the program-specific guidelines as outlined by their individual Review Committees (RCs). The sponsoring institution monitors program's adherence to the duty hour requirements through regular review of work hour violations in RMS, the Internal Review process as well as annual review of program manuals to ensure the proper policies are in place. Concerns about continuous work hour violations not adequately addressed by their program can be reported to the Designated Institutional Official at [gme@umn.edu](mailto:gme@umn.edu). Anonymous reporting of work hour violations can occur via a [Qualtrics form](#). Trainees may also report violations directly to the ACGME.
- c. Principles:
  - i. The program must be committed to, and be responsible for promoting, patient safety, fellow well-being, and to providing a supportive educational environment
  - ii. The learning objectives of the program must not be compromised by excessive reliance on fellows to fulfill service obligations



- iii. Didactic and clinical education must have priority in the allotment of fellows' time and energy
- iv. Work hour assignments must recognize that faculty and fellows collectively have responsibility for the safety and welfare of patients
- v. Responsibilities of Program:
  - 1. Programs must ensure that appropriate levels of supervision are provided to each trainee based on their level of training. Programs must enhance their current supervision policies to include the new ACGME requirements.

**D. Work Hours (formerly known as Duty Hours)**

- a. Work hours are defined as all clinical and academic activities related to the program, including patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities such as conferences.
- b. Work hours do *not* include reading and preparation time spent away from the work site.
- c. Providing trainees with a sound academic and clinical education must be carefully planned and balanced with concerns for patient safety and trainees' well-being.
- d. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on residents/fellows to fulfill service obligations.
- e. Didactic and clinical education must have priority in the allotment of trainees' time and energies.
- f. Work hour assignments must recognize that faculty and trainees collectively have responsibility for the safety and welfare of patients.

**E. Maximum hours per week**

- a. Work hours must not exceed 80 hours per week, when averaged over a four week period and inclusive of call and moonlighting activities; this will be taken very seriously
- b. Fellows who are at risk of violating work hour rules have an obligation to inform program leadership so that coverage can be arranged to avoid violation
- c. In the event that there is a pattern of persistent violations, corrective action will be taken by the Program Director and Chair
  - i. In rare instances in which the fellow feels the violation relates to patient safety, unusual patient condition, or specific resident interest, the work hour violation will be tolerated only to a strictly limited extent and must be documented accordingly
  - ii. Fellows no longer need to record their own duty hours as the GME will ask the Program Director/Program Coordinator to attest to any duty hours violations quarterly

- iii. Please notify the Program Director or Program Coordinator of any impending or possible violations so they can be resolved immediately

#### **F. Work Hour Exceptions**

- a. Work hour exceptions of 88 hours per week averaged over a four week period for select programs with sound educational rationale are permissible
- b. Programs must obtain permission from the Designated Institution Official and Graduate Medical Education Committee prior to submission to their Review Committee

#### **G. Mandatory Time Free of Duty**

- a. Trainees must have a minimum of one day free of duty every week, when averaged over four weeks. At home call cannot be assigned during this time.
- b. Fellows should have 10 hours and must have eight hours free between work periods. There must be at least 14 hours free of work after 24 hours of in-house work.

#### **H. Institutional [Leave Policies](#)**

##### **a. [Administrative Leave of Absence](#)**

- b. **Bereavement Leave:** Policy details can be found at <http://policy.umn.edu/hr/fmla>.

##### **c. [Earned Sick and Safe Time \(ESST\)](#)**

##### **d. Family Medical Leave (FMLA)**

- i. Per federal law, Family Medical Leave (FML) is only available to trainees who have worked at the institution for at least 12 months and who have worked 1,250 hours in the previous 12 months before the leave begins.
- ii. The Family Medical Leave Act, or FMLA is a federal law that allows trainees, who are eligible, up to 12 weeks of protected leave per academic year.
- iii. Trainees must consult with their program to determine if they are eligible.
- iv. With the proper medical documentation and supervisor approval, FML can be used for:
  - 1. Your own serious health condition
  - 2. The serious health condition of an immediate family member
  - 3. Caring for a newborn or newly-placed adopted child or foster child
  - 4. The urgent need of an immediate family member who is on active duty in the military services
- v. Leave shall not exceed 12 weeks in any 12-month period. The 12-month period is based on an academic year (ex: 07/31-07/30). The trainee may be eligible for Short Term and Long Term Disability benefits. Department Human Resources staff will determine FMLA eligibility and will provide the trainee with the appropriate paperwork.

##### **e. [Medical & Caregiver Leave](#)**

##### **f. Holiday Leave**

- i. Holiday leave is dependent on the requirements of the rotation to which the trainee is assigned.

- ii. The educational requirements and the 24-hour operational needs of the hospital are taken into consideration when scheduling holiday time off.
  - iii. Fellows are responsible to check with rotation/site directors for requirements reporting on holidays.
  - iv. Fellows are not eligible to receive an annual University of Minnesota issued personal holiday.
- g. Military, Court Appearance, or Civic Duty Leave**
- i. <http://policy.umn.edu/hr/milcourtcivicleave>
- h. Parental Leave**
- i. Please contact the Program Coordinator and Program Director when scheduling Parental Leave.
  - ii. Compliance with the [GME Leave of Absence](#) is also required.
- i. Personal Leave**
- i. Please contact the Program Director and Program Coordinator regarding scheduling a Personal Leave of Absence or a Professional Leave of Absence
  - ii. See <http://policy.umn.edu/> for required compliance details
- j. [Professional Leave](#)**
- k. Vacation Leave**
- i. Anticipated days away from clinical duties MUST be requested in advance.
  - ii. Only after the Program Director has signed off on a request and confirmed with the Program Coordinator is it considered approved.
  - iii. All fellows are entitled to twenty days (excluding weekends and holidays) free of Departmental duties each academic year. Of these 20 days, 15 are normally used as vacation and five are available for sick leave. Sick leave exceeding beyond these five days *must* be made up either by use of vacation days or additional assignments beyond the normal completion of the program.
- l. Other Program Leave Time**
- i. Academic / Educational Leave**
    - 1. Fellows are expected to attend:
      - a. SCA Annual Meeting (5 days) (covered by the dept fellow fund)
        - i. Fellows are required to submit a complex case to the fellow/junior faculty program at the SCA Annual Meeting if they are going to attend.
      - b. Echo Week (5 days) (covered by the dept fellow fund)
      - c. Two local symposia (Bakken and Lillehei).
      - d. If a fellow does not choose to attend the four aforementioned meetings then they have only 5 days to use on an alternate meeting.
  - ii. Sick Days**

1. All sick days must be reported by the FELLOW. Email the program director, associate program director and program coordinator to report any unanticipated absences.
2. Single sick days require no proof of illness. Sick leave of two days or more may require a physician's statement of legitimate illness

**iii. Departmental Disaster Plan**

1. Initially fellows are expected to report to their originally assigned hospital/clinic location. In the event the hospital/clinic is affected by the disaster and unable to operate in the usual fashion or if the patient load is skewed by the disaster, some or all of the trainees may need to be reassigned by the DIO after discussion with the Program Director and approval of the DIO with the hospital officials.

**I. Moonlighting**

- a. Per ACGME and Departmental policy Adult Cardiothoracic Anesthesiology Fellows are permitted to Moonlight with approval from the program director and GME office.

**J. [Impairment/Fitness for Duty Policy](#)**

**K. [Inclement Weather](#)**

**L. Grievance/Due Process**

- a. The following describes the general process for resolving grievances within the residency/fellowship program at the departmental level. If a grievance cannot be settled at the department level, the program leadership or trainee can appeal to the GME office as explained in [“GME Policy: Discipline, Dismissal, Failure to Advance”](#).
  - i. This protocol calls for notice before the action is taken, an opportunity for the resident to appear, and an appeals mechanism.
  - ii. Possible areas of grievance to be resolved can include evaluation of resident/fellow performance, resident/fellow duties, resident/fellow assignments/schedules, resident/fellow conflicts with peers or faculty. It is understood that many potential areas of conflict can be avoided via discussions with mentors and/or faculty advisors.
    1. The quarterly program meetings, and mentor meetings or meetings with the Program Director also provide opportunities for problem resolution.
      - a. If these usual and customary means of resolving issues do not suffice, the chair of the department may assemble a grievance committee from appropriate membership.
      - b. Membership can include the parties to the complaint, representatives from the resident/fellow class, administrative chief residents, faculty from services or sites concerned, mentors, and the Program Director.

2. If an outcome acceptable to principals in the complaint is achieved, no further action is necessary. If parties fail to achieve an acceptable resolution, the matter is carried forward to the Medical School grievance procedure.
3. Our program also encourages residents/fellows to directly address any issue or concern they may have with faculty or staff as it occurs, or within the appropriate space of time. However, in cases when this is not possible or not resolvable, the resident/fellow may bring their concerns to the Program Director for guidance and intervention as necessary.
4. If a grievance cannot be settled at the department level, the program leadership or trainee can appeal to the GME office as explained in "[GME Policy: Discipline, Dismissal, Failure to Advance](#)". There is also a Student Conflict Resolution Center which offers online tools or personal assistance through an ombudsman.
5. The Office of Equal Opportunity and Affirmative Action (EOAA) is also available to help resolve issues or concerns involving discrimination, harassment, sexual misconduct, nepotism and retaliation.
  - a. Staff members of the EOAA are available to consult directly with fellows or supervisors/administrators.
6. Reporting of discrimination or harassment may be done through UReport anonymous online reporting system.
7. Residents & fellows may also review the program faculty yearly through an anonymous evaluation which is then reviewed by the Program Director(s).
8. Any concerns are then addressed with the PD, site directors and/or faculty members and can also be escalated as indicated.

iii. [Disciplinary & Corrective Action Policy](#)

1. Discipline/Dismissal for Academic Reasons
  - a. Grounds

- i. As students, fellows are required to maintain satisfactory academic performance. Academic performance that is below satisfactory is grounds for discipline and/or dismissal. Below satisfactory academic performance is defined as a failed rotation; relevant exam scores below program requirements; and/or marginal or unsatisfactory performance, as evidenced by faculty evaluations, in the areas of clinical diagnosis and judgment, medical knowledge, technical abilities, interpretation of data, patient management, communication skills, interactions with patients and other healthcare professionals, professionalism, and/or motivation and initiative.
  - ii. To maintain satisfactory academic performance, fellows also must meet all eligibility requirements throughout the training program. Failure or inability to satisfy licensure, registration, fitness/availability for work, visa, immunizations, or other program-specific eligibility requirements are grounds for dismissal or contract non-renewal.
- b. Procedures
- i. Before dismissing a fellow for academic reasons, the program must give the trainee:
    - 1. Notice of performance deficiencies;
    - 2. An opportunity to remedy the deficiencies;
    - and
    - 3. Notice of the possibility of dismissal or non-renewal if the deficiencies are not corrected.
  - ii. Trainees disciplined and/or dismissed for academic reasons may be able to grieve the action through the Conflict Resolution Process for Student Academic Complaints Policy. This grievance process is not intended as a substitute for the academic judgments of the faculty who have evaluated the performance of the trainee, but rather is based on a claimed violation of a rule, policy or established practice of the University or its programs.

## 2. Academic Probation

- a. Trainees who demonstrate a pattern of unsatisfactory or marginal academic performance will undergo a probationary period.
  - i. The purpose of probation is to give the trainees specific notice of performance deficiencies and an opportunity to correct those deficiencies.
  - ii. The length of the probationary period may vary but it must be specified at the outset and be of sufficient duration to give the trainee a meaningful opportunity to remedy the identified performance problems.
  - iii. Depending on the trainee's performance during probation, the possible outcomes of the probationary period are:
    - 1. Removal from probation with a return to good academic standing;
    - 2. Continued probation with new or remaining deficiencies cited;
    - 3. Non-promotion to the next training level with further probationary training required; contract non-renewal; or dismissal.
- 3. Discipline/Dismissal for Non-Academic Reasons
  - a. Grounds
    - i. Grounds for discipline and/or dismissal of a trainee for non-academic reasons include, but are not limited to, the following:
      - 1. Failure to comply with the bylaws, policies, rules, or regulations of the University of Minnesota, affiliated hospital, medical staff, department, or with the terms and conditions of this document.
      - 2. Commission by the trainee of an offense under federal, state, or local laws or ordinances, which impacts upon the abilities of the trainee to appropriately perform his/her normal duties in the fellowship program.
      - 3. Conduct, which violates professional and/or ethical standards; disrupts the operations of the University, its departments, or affiliated hospitals; or disregards the rights or welfare of patients, visitors, or hospital/clinical staff.
    - ii. Procedures

1. Prior to the imposition of any discipline for non-academic reasons, including, but not limited to, written warnings, probation, suspension, or termination from the program, a fellow shall be afforded:
  - a. Clear and actual notice by the appropriate University or hospital representative of charges that may result in discipline, including where appropriate, the identification of persons who have made allegations against the trainee and the specific nature of the allegations; and,
  - b. An opportunity for the trainee to appear in person to respond to the allegations.
2. Following the appearance by the trainee, a determination should be made as to whether reasonable grounds exist to validate the proposed discipline. The determination as to whether discipline would be imposed will be made by the respective Medical School department head or his or her designee. A written statement of the discipline and the reasons for imposition, including specific charges, witnesses, and applicable evidence shall be presented to the trainee.
3. After the imposition of any discipline for non-academic reasons, a trainee may avail himself or herself of the following procedure:
  - a. If within thirty (30) calendar days following the effective date of the discipline, the trainee requests in writing to the Dean of the Medical School a hearing to challenge the discipline, a prompt hearing shall be scheduled. If the trainee fails to request a hearing within the thirty (30) day time period, his/her rights pursuant to this procedure shall be deemed to be waived.



- b. The hearing panel shall be comprised of three persons not from the residency/fellowship program involved: a chief resident; a designee of the Dean of the University of Minnesota Medical School; and an individual recommended by the Chair of the Graduate Medical Education Committee. The panel will be named by the Dean of the Medical School or his or her designee and will elect its own chair. The hearing panel shall have the right to adopt, reject or modify the discipline that has been imposed.
4. At the hearing, a fellow shall have the following rights:
  - a. Right to have an advisor appear at the hearing. The advisor may be a faculty member, fellow, attorney, or any other person. The fellow must identify his or her advisor at least five (5) days prior to the hearing;
  - b. Right to hear all adverse evidence, present his/her defense, present written evidence, call and cross-examine witnesses; and,
  - c. Right to examine the individual's fellowship files prior to or at the hearing.
  - d. The proceedings of the hearing shall be recorded.
  - e. After the hearing, the panel members shall reach a decision by a simple majority vote based on the record at the hearing.
  - f. The fellowship program must establish the appropriateness of the discipline by a preponderance of the evidence.

- g. The panel shall notify the fellow in writing of its decision and provide the trainee with a statement of the reasons for the decision.
  - h. Although the discipline will be implemented on the effective date, the stipend of the trainee shall be continued until his or her thirty (30) day period of appeal expires, the hearing panel issues its written decision, or the termination date of the agreement, whichever occurs first.
  - i. The decision of the panel in these matters is final, subject to the right of the trainee to appeal the determination to the fellow's Student Behavior Review Panel.
5. The University of Minnesota, an affiliated hospital, and the department of the fellow each has a right to impose immediate summary suspension upon a trainee if his or her alleged conduct is reasonably likely to threaten the safety or welfare of patients, visitors or hospital/clinical staff. In those cases, the trainee may avail he or she of the hearing procedures described above.
  6. The foregoing procedures shall constitute the sole and exclusive remedy by which a trainee may challenge the imposition of discipline based on non-academic reasons.

**M. [State Medical Board Licensure Requirements](#)**

**N. Needlestick Procedures - Infection Control**

- i. All needle sticks must be reported via this [GME site/form](#) within the first 24 hours.
- ii. Blood borne pathogens are serious business; please treat them as such for your own safety.
- iii. Please encourage peer residents to report any incidents using the same site/form.

**O. Patient Safety Procedures**

- a. Fellows should refer to patient safety procedures at each rotation site.
- b. Information is available via the UMP Resources intranet.

**P. Institutional Committees**

- a. [Graduate Medical Education Committee](#)

#### **Q. Social Networking Policy**

1. While it is recognized that social networking websites and applications are an effective and timely means of communication, fellows must be aware of the importance of maintaining the confidentiality of all patient information and identifiers as well as not compromising the image of their profession and the institutions connected with them.
2. Please be aware of the [Social Networking and Media Policy](#); fellows who violate University policies may be subject to adverse academic actions that could include a letter of reprimand, probation or dismissal from the program.

### **BENEFITS, INFORMATION AND RESOURCES**

#### **A. Insurance**

- a. Please see the [Office of Student Health Benefits](#) website with descriptors of the following insurance coverage:
  - i. Health & Dental
    1. [New academic year rates](#) update on website end of April
  - ii. Short and Long Term Disability Coverage
  - iii. Professional Liability Insurance/Medical Malpractice Insurance
    1. Please visit [this site](#) for Professional Liability Insurance information, including policy numbers and coverage details.
  - iv. Life Insurance
  - v. Voluntary Life Insurance
  - vi. Insurance Coverage Changes
  - vii. [Worker's Compensation](#)

#### **B. Systems and Communication**

##### **a. Email Accounts**

- i. Email accounts are available for each fellow. Fellows are required to maintain a University of Minnesota email account which *must be checked* on a 24-hour basis (except in rare instances – travel, etc.), as this is the Department's preferred method of communication.
- ii. Due to HIPAA laws ALL transfers of possible restricted patient information must take place on an @umn.edu account that is encrypted. Fellows should not forward their @umn.edu account to other unsecure mail services for this same reason.

##### **b. Internet Access**

- i. Computers are available for the fellows to use in the Anesthesiology Fellow Lounge and throughout the medical center facility.

- ii. Internet access for personal computers can be obtained by logging in with your x.500/password to the secure campus Wi-Fi or by plugging directly into a physical jack, logging in with your x.500 at this [link](#), clicking on the register new address button, and then entering your hardware MAC address.

**c. Pagers**

- i. Personal pagers are provided for each fellow.
- ii. Pagers for call and code pagers are also provided on certain rotations.
- iii. You will receive your personal pager in your orientation from the Program Coordinator. Thereafter, damaged or lost pagers can be reported at the front desk of the UMMC East Campus (directly in front of the Main Entrance on the 2<sup>nd</sup> floor). The fee for lost or damaged pagers (currently \$65, subject to change at any time) will come out of any remaining educational funds, or withheld from bi-weekly stipend, if educational funds are not available.

**d. Campus Mail**

- i. Individual mailboxes are available for fellows in the Fellow Lounge.
- ii. Mail is distributed on a daily basis.
- iii. Please note that fellows are responsible for checking their mailboxes weekly.
- iv. Mailboxes should not be used as a storage area.

**Department mail address:**

Department of Anesthesiology  
University of Minnesota  
420 Delaware Street S.E.  
MMC Box 294  
Minneapolis, MN 55455

**C. Stipends**

- a. Stipends paid to residents and fellows in Anesthesiology will be dependent on the range of remuneration negotiated between the Association of Teaching Hospitals and the University of Minnesota.
- b. For the current stipend rates, please see the Stipend/Pay section [here](#).
- c. ACTA fellows are paid at the Step 5 level.

**D. [Employee Assistance Program \(EAP\)](#)**

- a. The Employee Assistance Program (EAP) provides confidential professional consultation and referral services to address any personal or work concern that may be affecting your wellbeing. You can receive up to eight sessions per issue at no cost.

**E. Medical Records Procedures**

- a. Fellows are expected to use Epic to record all cases/procedures.

**F. Medical Records**

- a. Fellows use the ACGME Case Logs to log all procedures conducted during their training. Complete, accurate and up to date record keeping is not only an essential part of their professional duties, but also for comprehensive patient care. In recognition of this case logs are reviewed regularly by the coordinator and Program Director for the above as well as progress. towards completion of the minimum clinical experience level required by the ACGME.
- b. Comprehensive, timely and legible medical records are an element of their rotational and quarterly evaluations and are reviewed by the coordinator and Program Director and at regular Clinical Competency Meetings.
- c. A medical records system that documents the course of each patient's illness and care must be available at all times and must be adequate to support quality patient care, the education of fellows, quality assurance activities, and provide a resource for scholarly activity.

#### **G. Pharmacy Procedures**

- a. Fellows should follow all pharmacy and drug procedures as required at the site.

#### **H. Payroll Information**

- a. Fellows are paid bi-weekly (every other Wednesday. If you have direct deposit (encouraged) your statement will be accessible on-line only.
  - i. To access go to [www.umn.edu/ohr/hrss](http://www.umn.edu/ohr/hrss). You will need your x.500 number (the beginning of your email address) and your own password.

#### **I. Laundry Services**

- a. Fellows should use scrubs available in locker rooms on the outside East or West OR.

#### **J. Parking**

- a. Fellows will be provided with parking cards for access to University lots. Parking will be paid by the department and access will be provided to the Oak Street Ramp.

#### **K. Professional Education Fund Policy ("Book Fund")**

- a. Fellows will receive an allocation of \$2,000 per year to be used for educational materials and education-related travel expenses. Unspent funds will carry forward each year and be available for use.
- b. Fellows may be required to make purchases from their Education Funds for things such as a missing/lost pager. If Education funds are not available, fellows should understand they will be invoiced for these fees and will need to cover the expense out of pocket.
- c. All purchases must show a clear benefit to supporting the educational growth of the resident/fellow, and therefore be in the interest of the University of Minnesota
- d. All purchases/fees must be made/submitted 1 month prior to leaving the University (by 5/31 if graduating on schedule), to ensure appropriate accounting and use of funds; any remaining funds will revert back to the department

- e. Please note that this fund can be temporarily suspended or permanently lost for becoming non-compliant with department requirements, regulations and/or policies (for example noncompliance with completion of training, completion of mandatory surveys, etc).
- f. Examples of allowable\* Education Fund expenses:
  - i. Books and published materials
  - ii. Equipment (electronic equipment purchases are the property of the University of Minnesota and must stay at the University once the trainee leaves)
  - iii. Conference registration and attendance (requires pre-approval; details below)
- g. Examples of unallowable\* Education Fund expenses:
  - i. Apparel (exceptions: stethoscope holder)
  - ii. Gift cards
  - iii. Professional licenses
- h. Check with your Program Coordinator or ALRT accountant on allowability of items not listed above

#### **L. Meal Cards**

- a. Each fellow involved in clinical duties at Fairview sites will receive a Fairview meal card at the start of the academic year. The dollar amount on each card will be determined by the number of on-call days the department designates to the resident and/or fellow. The following restrictions apply:
  - i. On-call meals (dinner & breakfast): provided for residents and fellows who work *24 consecutive hours on site or are pre-scheduled for 5, but no more than 6, 12 hour night shifts (night float)*.
  - ii. ID badge requirement: residents and fellows are required to have a Fairview ID badge visible and present in order to obtain on-call meals.
  - iii. Bulk purchase limitation: bulk purchases are not allowed. A limit of 3 bottles and one-half pound of candy or snacks may be purchased at one time.
  - iv. Sharing restriction: this privilege is for the resident and/or fellow use in the hospital and may not be shared with medical students, families, or other hospital staff.
  - v. Non-compliance with this policy may result in short-term suspension of meal card privileges or termination of privileges. The Vice President of Medical Affairs at UMMC-F reserves the right to suspend or terminate meal card privileges at any time, without notice.

#### **M. ID Badges**

- a. You are required to wear both a University and University of Minnesota Medical Center badge at all times. Wearing of the University ID badge is a *condition of employment*, so do not be caught without it due to possible consequences of noncompliance-termination. Additional ID badges may be assigned by hospital sites. ID policies at those hospitals are also to be followed.

## **N. Fatigue**

- a. Once a patient care jeopardizing level of fatigue has been identified, the affected resident and/or identifying peer/staff should contact the Officer of the Day immediately (or, if after hours, the available attending or the senior resident on call) to arrange for an immediate transfer of care to another provider. Cab vouchers for residents too fatigued to drive will be provided by University of Minnesota Medical Center-Fairview and distributed in the following way:
  - i. **Monday-Friday Daytime Hours**  
Contact Officer of the Day on OR floor or call numbers below  
University East Campus - contact the Anesthesia Control Room - (612) 273-2926  
University West Campus - (612) 273-4097 or (612) 273-2629
  - ii. **Evenings and Weekends**  
University East Campus - Anesthesia Control Room - (612) 273-2926  
University West Campus - (612) 273-4097 or (612) 273-2629

## **O. PWC PeerConnect**

- a. PWC PeerConnect is a joint project between Minnesota Metro Council on Graduate Medical Education and the Physicians Wellness Collaborative and provides a confidential space for you to connect with a supportive colleague who understands what it's like to be a resident.
- b. Download the PWC PeerConnect app and update your contact information and contact preferences.
- c. Select who you want to be part of your Peer Support Team. All Peer Support Mentors are recent residency graduates and/or practicing physicians who are passionate about supporting resident's wellbeing.
- d. You're ready to use the app! Anytime you want to talk with someone who has walked a similar path, click the "Connect" button and your Peer Support Team will be notified. You will receive a call or text (however you indicated you'd like to be contacted) within 24 hours.
- e. NOTE: The Peer Support Mentors are not therapists, but if you would like additional support, there are extensive resources in the app with therapists and clinicians who specialize in providing care to healthcare workers. You can find more info and filter by location under the Resources tab.
- f. If you have questions or are having any trouble accessing PWC PeerConnect, Please reach out to Amber Kerrigan at [kerrigan@metrodoctors.com](mailto:kerrigan@metrodoctors.com), Phone: 612-362-3706

## **P. Vital Worklife**

- a. Vital worklife offers 6 free confidential counseling sessions.
  - i. Call Vital Worklife at 1-877-731-3949
  - ii. Identify yourself as a University of Minnesota Fellow
  - iii. [More information on Vital Worklife services](#)

## **Q. State Medical Board Licensure Requirements**

- a. Fellows are required to obtain either a Residency/Fellowship Permit or a full Minnesota Medical License from the Minnesota Board of Medical Practice prior to starting the fellowship year.

## **Confirmation of Receipt of your Program Policy Manual**

By signing this document you are confirming that you have received and reviewed your Program Policy Manual and Fellowship addendum, if applicable, for this academic year. This policy manual contains policies and procedures pertinent to your training program. This receipt will be kept in your personnel file.



**Fill out the form online:**

<https://forms.gle/UrHbwWPeBdGmdAmu5>

OR

**Scan the QR code below:**

