Duke Cardiac Care Unit Rotation Description - PGY 1-3

http://cardiology.medicine.duke.edu/

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OVERVIEW:
The Cardiac Care Unit at Duke is a busy clinical teaching service. The work is challenging, but offers tremendous learning opportunities from your patients and co-workers. There is structured teaching on the rotation, but patient-based independent learning is also critical.

Daily Schedule:
• **Morning Rounds with the CCU Attending:** Rounds begin at 7:30 each morning except on the 4th Thursday of the month when you are expected to attend CCU M&M at 7 AM; rounds will begin immediately afterwards.
• **The structure of the call-schedule for interns is:**
  Rounds begin on the intern side (A side) at 7:30 AM. The off going (night) intern delivers a succinct presentation of each patient to the entire team, including all the residents. The goal will be to complete side A by 9:30 AM. There may be times when a patient on the B side is going to early cath, surgery, etc. and will need to be seen first. The off going resident will present patients on B side. The goal will be to complete these presentations by 11 AM. There may be times when rounds last somewhat longer, sometimes they will be shorter. The goal is an average time of 24+4 for residents and 12 + 2 for the interns. Residents and interns are expected to manage their own duty hours. If they need to leave before rounds are completed, they should do so, but will not be prompted to do so by faculty or staff. The remaining team members will carry on with rounds until all patients are seen.

The daytime intern will leave at approximately 9-9:30 PM (i,e., 12+2 assuming that he arrives at 7-7:30 AM). The night intern is expected to arrive in the CCU by 8:00 PM to allow for overlap in care and handoff of care between the departing daytime intern and the arriving nighttime intern.

A teaching resident will be paired with the daytime intern. This resident will arrive for morning rounds by 7:30 each day and leave at 6 PM. Teaching resident responsibilities include but are not limited to:
  • Teach the intern and review the plan for each new case work up with the intern
  • Prepare an educational presentation on a subject related to a current patient on A side that can be presented to the entire CCU team post-rounds
  • Carry the intern code pager during morning rounds
  • Assist the CCU fellow with DCCVs

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• Take care of any intern admissions on side A that arrive during rounds so the oncoming intern can participate in ALL (sides A and B) of rounds
• The short resident should do workups on side A that arrive during the intern presentations so that the resident assigned to the intern can stay on rounds.

ALL Interns and Residents who are not immediately involved in rounds leave at noon to attend Noon Conference

• **Noon Conference** - 12-1 PM

**Admissions:**
• House officers will admit patients on their sides of the unit. If one team has an unusually large number of admissions, the admission work-ups will be alternated between the intern and resident. The short call team will admit patients during rounds and is expected to stay until approximately 3:00 – 5:00 PM to help with procedures, calling consults, following up on test results admissions and teaching.

**Patient Transfers into the CCU:**
• All transfer medications must be reviewed, the patient evaluated and medications adjusted as appropriate
• Complete the ICU Consent form
• Complete the problem and procedure summary.
• Complete a CCU Clinical Trial Screening form for every pt. admitted to the CCU (this includes readmissions and patients who are obviously not cardiac).
• Place transfer note into chart as soon as it is completed for review by consults teams, PRM, nursing, etc.

**Patient Transfers from the CCU:**
1. When a patient is up for transfer, include the following in the transfer order:
   a. Cancel heparin, potassium, magnesium and tube feeding protocols
   b. Indicate the level of care - intermediate or step-down
   c. Order telemetry if indicated
   d. Identify the POD the patient will be transferring to as well as the attending physician (if known)
   e. Page the functional pager for the POD.
   f. Document the transfer of care from physician to physician
   g. Document the updated plan for the day of transfer
2. All other orders will transfer with the patient and do not have to be entered.
3. CCU transferring physician calls report to the accepting house officer or PA/NP when the transfer occurs.
4. When patients transfer to GM, call 970-1010 to give report. The charge nurse will then obtain a bed from bed control.

**Discharges:**
• Discharges are uncommon, but do occur.
• Dictate a discharge summary the day of discharge (or transfer to an outside care facility).
• Discharge before 11 AM whenever possible.
• Discharge dictation to an outside facility is “STAT” so that it can be taken with the patient. To ensure timely dictation, complete the dictation as soon as the decision to transfer the patient to another facility is made. An addendum can always be dictated later.
• When a patient is discharged to home, the dictation is to be completed by the off-going house officer on the day that the discharge occurs.
• When a patient is transferred from the CCU and is discharged to home from the intermediate unit within 24 hours of transfer, the CCU house officer who was on call at the time of the transfer is responsible for the discharge summary.
• Dictation is completed by interns as well as residents on the CCU

Deaths:
Whenever a death occurs:
• Ask the family if they wish an autopsy
• Notify Carolina Donor Services (1-800-252-2672) within an hour of patient death for all deaths regardless of age or diagnosis. Let the Carolina Organ Donor representative approach the family. This separates the health care team from the organ harvesting team.
• Decedent care representative will bring you a death certificate to complete and will obtain forms for autopsy.
• Complete an entry in the progress note stating the date and time of death.
• Ask decedent care to leave the chart so you can dictate the death note (an abbreviated discharge summary) – Death note must be dictated within 24 hours of the patient death.

Be sure to notify the CCU attending physician when a death occurs.

Miscellaneous Information:
TCH 970-9947
CHF 970-9952
PAC 970-9946
TRN 970-9955
DHP 970-3470

*After 4:00 PM the pager is rolled over to: 4CAD
• If a patient has been on the unit for 1 week or greater, the house officer needs to dictate an interim summary before leaving the CCU rotation. If there are several patients in this category, please distribute the work evenly throughout the team.

General Information for Discharge Summary and Death Notes:
Documentation:

• A Duke History and Physical Admission database (handwritten or typed on template) must be completed on every patient by the intern or resident. **Every section of the database must be completed** and should be on the chart as soon as it is completed for reference by consult teams and other healthcare team members. All med student admission notes go into the chart and are reviewed and signed by the resident.
• All H&P’s must be signed, dated and timed by an attending within 24 hours of admission.
• The H&P must be complete (including pain score and functional status).
• The daily progress note begins at 7:00 AM the day of call and goes until 7:00 AM the next day. The note is written on the standard MO2 hospital progress form and placed in the chart as soon as they are completed. Any events that occur after the note is written should be added later with the date/time.

DNR and Withdrawal of Life Support Orders:
1. Orders not to resuscitate or to limit resuscitation efforts to specifically defined measures may be written only by an attending physician.
2. Withdrawal of life support orders may be issued by an attending. In addition, a second attending physician must support them. *(See “Red Book” located on CareDoc cart for details)*

Typical day in the CCU
Presentation format for rounds:
1. Identifying statement for each patient i.e. 57 y.o. male with history of CABG presents with anterior STEMI
2. Articulate timeline of presenting event
3. When episode began, 1st EKG, time pt. lysed, subsequent EKGs, whether or not ST’s were resolved, was chest pain relieved, etc.
4. Pertinent PMH only (for the most part this will be presented in the H&P)
5. List allergies and whether they are true allergies or sensitivities
6. List home meds (dose not necessary)
7. Review of systems – pertinents only
8. Go over physical exam, vital signs and pertinent admission labs i.e. CK/MB, troponin, EKG, Hct, Cr, CXR, then overnight events
9. Run through CareDoc information and meds (from MAR) – list data, do not express plan while running board/meds. The goal is not to recite all laboratories. Please only provide the results of laboratory studies that...
you believe are pertinent to delivery of care for the patient you are presenting. Be prepared to explain your rationale for labs presented as part of the daily teaching rounds.

10. Assessment and plan – be specific! - titrated βB/ ace, cath today, etc.

**NOTE:** It is imperative that all Admission databases and progress notes remain in the chart at ALL times. Presentations will be made from memory (with the assistance of jotted notes if desired), but will not be read directly from the chart or photocopied admission databases or progress notes.

**Daily House Officer Responsibilities:**
1. Rounds: Present patients on your side
2. Work up all new patients on your side.
3. Complete a daily progress note for each patient on your side. This note will include events and information from 7:00 AM forward of the day you are on call. Do not report labs or events from the previous day.
4. Assess your patients throughout the day. If a major event occurs after you have written your daily progress note, you must document that event in writing in the progress notes section of the patient’s chart. For the night-shift intern, any events happening during that shift must be documented in writing in the chart at the time they occur.
5. Keep the fellow aware of all critical issues.
6. House staff are responsible for triage of patients on central surveillance monitors (located on the 7th floor)
7. Residents will assume responsibility for being familiar with all patients and being the first line resource for interns. During the daytime, this responsibility will fall to the teaching resident. The long call resident will assume this role for the night-shift intern.
8. “Short” = resident (or teaching resident on the intern’s side) insert and change invasive lines and assist as needed during the daytime.

**Orders:**
1. **Inform the care nurse when an order is written** so it can be implemented in a timely manner.
2. No verbal orders are allowed except during a code (the code sheet needs to be signed by the H.O. as it is the order).
3. There are protocols for heparin, magnesium and potassium for cardiac patients.
4. There is NO chest pain protocol

**Restraint Orders**
Every patient who has a restraint must have an order entered into CPOE every day between 6AM and 8 AM.
1. Always use the medical/surgical justification (behavioral restraints are for psych patients and require an order renewal by the H.O. q 2 hours)
2. A progress note must be entered every 24 hours reflecting the fact that the patient has a restraint and why.

**Codes:**
1. The CCU code team responds to adult codes in Duke North, 2nd – 9th floors.
2. The code team responds to all adult codes on floors 2 – 9 and consists of the:
   a. **Resident (teaching resident during the day and long call resident at night)** - directs the code, reviews and signs the code sheet and brings any completed data collection forms back to the CCU (place in the nurse manager’s door)
   b. **Intern** - carries and operates the defibrillator and makes certain it is cleaned and returned to the CCU (note-during intern morning rounds presentations, the teaching resident will carry the intern code pager and be responsible for the defibrillator),
c. **CCU charge nurse** - helps with drug administration, documentation, etc.
d. **CCU respiratory therapist** - manages the airway
e. **Pharmacist**

3. During rounds, the intern and resident responsible for the opposite side responds to off unit codes.
4. Lab note: The Blood Gas Laboratory offers a Code Five Blood Gas Panel to include an ABG, sodium, potassium, ionized calcium, and glucose. Collect the sample in a blood gas syringe and send to the Blood Gas Lab via the pneumatic tube (station 306) or hand carry to room 3264

NOTE: presentations are expected to be concise and focused to information that is relevant to the presenting illness or that may affect care related to that illness.

**Bed Control:**
1. Patients for admission or transfer are listed on the dry erase board
2. Triage is done by the CCU fellow, charge nurse and attending.

**Line Insertion and Procedures** (performed by medical residents and interns)
1. Use the ICU consent form to obtain informed consent on all central lines and procedures.
2. Inform care nurse of procedures, tests or lines planned for the day so the patient is ready and the lines can be set up.
3. In fairness to the patient, **3 attempts at line insertion is the limit** – after that ask another MD for help.
4. **DO NOT** insert a new line through a Cordis that has been in place for over 24 hours (to prevent infection).
5. A procedure note, including type and reason for procedure, for swans, temporary pacing wires and IABPs must be written in the chart. **Please include the lot number of temporary pacing wires and pulmonary artery catheters in all procedure notes.** This number is necessary for reporting to the FDA whenever there is an equipment malfunction.
6. Arterial lines are changed on day 7; triple lumens and swans may be left in indefinitely; pacers may remain in indefinitely if the Cordis is not used and the site is not compromised.
7. A CCU fellow must supervise and be scrubbed for all intern insertions of pacers and pulmonary artery catheters.
8. A fellow must supervise (not necessarily be scrubbed) for all resident insertions.
9. Use flouro to insert all swans, pacers, and enteral feeding tubes; documentation of placement must by an x-ray.
10. The respiratory therapists are available as back up to place arterial lines. (Make certain that consent has been obtained.)
11. Write a procedure note for not only successful, but also unsuccessful procedures.
12. Please enter your electronic request for attending verification of procedures within one week of actually performing the procedure to have it verified by the attending.

**Nutrition and the Ventilated Patient:**
1. Unless contraindicated, tube feedings should be initiated on intubated patients within 24 hours of intubation.
2. Write an order for “tube feeding protocol” (posted on substations A and B)
3. The tube feeding protocol consists of
   a. Isosource 1.5 @ 10 ml per hour
   b. Flush with 40 ml water every 4 hours
   c. A nutrition consult is automatically obtained within 24 hours
d. Advance tube feeding volume by 10 cc per hours every 6 hours to a goal of 45 ml per hour (until Dietician recommendation received)

**Full Disclosure Monitor:**
A full disclosure monitor is located near the unit secretary’s desk. It records each patient’s cardiac rhythms for the previous 24 hours.

**Families:**
1. Families must be informed when any significance event or change in patient status occurs.
2. Rebecca Johnson will be a liaison with families, patients, and staff to provide communication, support, and education.
3. To promote consistency, MDs and nurses must keep each other informed of information they give or receive to or from patients and families for consistency.

**Evaluations:**
1. Informal feedback is provided throughout your rotation. Please take the initiative to see the fellow for feedback when you have completed 2 weeks of your orientation. This will allow you time to make improvements. If you have any questions regarding your process, please do not hesitate to ask either the fellow or attending with whom you are currently working.
2. Your feedback, problems or concerns regarding the unit, nursing staff, etc is encouraged and should be discussed with Joyce Fullwood, or Sherri Edwards, the CCU Nurse Managers.

**Care Doc Bedside Monitors:**
1. You will need a password to gain access to the 7200 bedside monitors. To obtain a password call: 684-2243

**Cath Films:**
1. Use Phillips Inturis computers on substations A and B and use the following sequence
   2. Start
   3. Clinical department system
   4. Inturis Cardio view

**Tracemaster Access (old EKG’s):**
1. E-mail Kimberly Starkey with your request for access: stark001@mc.duke.edu

**Quality Measures for AMI**
Duke Hospital must comply with the JCAHO Quality Measures for acute myocardial infarction. These quality measures include the following:
1. Aspirin received within 24 hours before or after hospital arrival and at discharge
2. Beta Blocker initiated early in admission and prescribed on discharge
3. ACEI or ARB prescribed at discharge
4. Smoking cessation counseling for all patients who have used a tobacco product within the 12 months prior to admission
If there is a legitimate reason not to comply with any one of the above measures, clearly document that reason in the patient chart.

**Clinical Research** At any given time on the CCU a number of clinical trial protocols are being carried out, enrolling patients in research that will establish the evidence for future care of our patients. We feel it is a critical part of patient care and house officer education to integrate these trials into daily care on the CCU. During the CCU rotation, the house officer will actively participate in screening patients for clinical trials and
will develop a basic understanding of clinical trials methodology through active discussion on rounds and less formally with the CCU fellows during the course of patient care.

CORE COMPETENCIES

Patient Care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health
- The resident and intern on the team should work together as advocates for each patient on the CCU. Cardiac patients frequently have complex histories and medical problems. Take ownership for the care of your patients and strive to provide them the best possible care. This will often involve coordinating consultations, diagnostic tests and therapy.
- In addition to cardiology, you will see a broad variety of problems while on the CCU. There is an appendix at the end of this document that includes some (but not nearly all) of the problems that you will encounter on CCU.
- Unless the patient is unstable or coding, wait until the nursing staff admits the patient into the room and gets the initial vital signs to obtain the bedside history and physical. You will need to assess acutely how ill the patient is and begin upon a course of diagnosis and therapy. Do not rely upon the history or diagnosis given by the ED! Never cut and paste into your admission or daily notes – these notes should reflect your own assessment and exam.
- Important diagnostic tests and urgent therapy (IV fluids, antibiotics etc) should be ordered promptly carried out expeditiously.
- The CCU team will assess each patient daily with daily examination and documentation of daily notes. Because this is a critical care area the patients will need to be assessed more than once per day. Any changes in patient status will need an addendum with date and time added to the daily progress note.
- When a patient becomes critically ill, the patient’s family will need to be notified.
- The resident and intern must work together with the CCU fellow to manage the new results that as they return, following up conscientiously and systematically on important studies.
- House staff should spend as much time as possible at the patient’s bedside. Exams should be careful and accurate. A sick patient deserves a doctor close-at-hand – Do NOT deliver patient care from the computer!
- Care should be delivered with sensitivity and caring. Treat all patients with the utmost respect – they are our greatest teachers.

Medical Knowledge House staff are to use the CCU experience to review pertinent parts of the established and evolving biomedical, clinical, and sciences as pertinent in the care of cardiac patients.
- The CCU rotation is a time for patient-focused learning. Reading should be primarily based around the problems your patients have (although house staff should read broadly on topics as their schedule allows). Textbooks of medicine (Harrison’s), systematic reviews from key journals (NEJM), ACP journal club reviews, guidelines from national organizations (particularly pertinent from the cardiology perspective are the ACC/AHA guidelines for STEMI, NSTE ACS, and heart failure; and the JNC IV and NCEP ATP III reports) are all reasonable sources of information. We encourage the house officers to be familiar with the main clinical research and clinical trials pertinent to acute cardiac care that have established the evidence for care of acute cardiac patients. House staff will be provided with links to relevant journal articles at the beginning of their rotation.
- Please enlist the expertise of the librarians from the Medical Center Library to assist you in enhancing your search strategies and reviewing the myriad of web-based tools that are available.
- Noon conferences should be attended as these provide a source of core-curriculum.
**Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care

• If there are systems improvements that the house staff discover, particularly in the realm of safety, these should be shared with the fellow or attending.

• Application of medical knowledge should be an active pursuit while on the CCU. Critical appraisal behind the medical evidence (or lack-thereof) should be an important part of the rotation.

• When errors are noted, these should be reported through the error-reporting systems in place (VRS). When in doubt, the fellow should be notified.

**Interpersonal and Communication Skills** House staff on the CCU service should always practice the most respectful and clear communication with colleagues, staff, patients and families. The goal is effective information exchange for the betterment of patient care.

• There may be times on the CCU when one’s patience will be tried either by co-workers or families. Always take the high road when communicating with others.

• Do your best to remain empathetic. Listening is often the best tool you can use. Echo the emotion of the person with whom you are communicating. Take a deep breath and try to learn why the other person is so worried, frustrated, scared etc.

• If communicating with others is a skill where you need to improve, talk with the chief resident (sooner rather than later). These skills can be learned. There are many helpful books that teach communication skills (Getting to Yes, Difficult Conversations: How to Discuss What Matters Most, Crucial Conversations are three resources that may be helpful).

• Effective communication and hand-offs with other house staff are critical for patient care and safety. On the CCU, interns and residents should be able to provide a concise, clear presentation of each patient. This is a skill that should be practiced over the course of the rotation. Residents should help their students learn to give excellent oral presentations of their patients.

• Questions to consultants should be clearly articulated with pertinent history provided. Think in advance about why you are calling (for a second opinion, for a procedure, to help make the diagnosis, for expert opinion, for a therapy that needs approval...)

• The written medical record is an important part of the CCU experience as previously articulated in the documentation section.

**Professionalism** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

• Professional attire and demeanor are expected. Names tags should be placed above the waist. Dress in a manner that includes clean, neat professional attire. Scrubs are appropriate for the CCU. White coats must be CLEAN and pressed. Refrain from wearing apparel considered unprofessional. Examples include: any clothing that is excessively tight or reveals the midriff. Please see the dress code for additional specifics.

• Always introduce yourself and refer to patients respectfully by their last names (Mrs. Smith).

• Treat all patient confidential medical information in accordance with HIPAA. Patient records and outside documents should be maintained in the chart outside the patient room. Documents should not be left in workrooms, call rooms, or any conference rooms used for rounds.

• Learn the names of the nurses with whom you work and always treat them as colleagues and members of the care team— it goes a long way.

• Be respectful of your colleagues. If one of your peers is overwhelmed, ask what you can do to help.
**Systems Based Practice** as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value

- Resident teams will partner with Patient Resource Managers, Social Workers, nurses, physical and occupational therapists, pharmacists and other health professionals to provide comprehensive and effective care for patients on Duke General Medicine.
- The CCU team is expected to communicate and partner with referring physicians within and outside of Duke University Health System, and work with community health agencies to ensure safe and effective transitions of care for our patients.

**Appendix:**

**Diseases You May See on CCU:**

Although focused primarily on acute cardiac care, patients with cardiac disease frequently have numerous comorbidities that overlap other subspecialties and general medicine and surgery. In addition, when other intensive care units are full, overflow from these units will be assigned to the CCU. Therefore, the diversity of patient illnesses seen on the CCU may be quite broad.

Cardiac: Acute myocardial infarction (STEMI and non-STEMI) and its hemodynamic, arrhythmic and mechanical complications; high risk unstable angina; decompensated heart failure (systolic, diastolic, left and right sided, pre-transplant); cardiogenic shock; transplant rejection; complicated arrhythmias (a fib with RVR, VT/VF, ICD patients with multiple shocks, post-arrest patients, heart block of varying degrees); complicated cocaine chest pain; hypertensive urgency and emergency; post-procedural complications; advanced support devices; endocarditis and its mechanical and electrical complications; adult congenital heart disease; valvular heart disease

Pulmonary: Acute management of respiratory failure of many etiologies, COPD, PE, pneumonia, new dx ILD, new dx lung cancer

Gastroenterology: GI bleeding, acute pancreatitis, cholecystitis, bowel ischemia

Renal: Acute and acute on chronic renal failure, hyperkalemia

Hematology: Anemia, TTP, ITP, HIT and HITT

Endocrine: DKA, adrenal insufficiency

General: Management of sepsis, electrolyte disorders (K, Na, Ca), Failure to thrive, falls, syncope, decubitus ulcer, PVD, delirium, hip fx, peri-operative risk management (pulm and cardiac risk stratification), overdose, ETOH withdrawal, CO toxicity

Infectious: Endocarditis, sepsis, cellulitis, MRSA/VRE, UTI (including complicated UTI), pneumonia (including ventilator associated pneumonia), diabetic foot ulcer, meningitis (bacterial, viral)