East Carolina University
Department of Internal Medicine
Division of Nephrology and Hypertension

Nephrology Fellowship Program

Educational Program Description
2013-2014

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Program Leadership

DIO

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Non Key Clinical Faculty

- **Wafa Badwan, M.D.**
- **Pankaj Jawa, M.D. (future)**

Other Faculty

- **Carl Haisch, M.D.**
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Table of Contents

This manual is designed to provide the ECU Nephrology Fellow and Faculty with a comprehensive overview and description of the program. Specific contents are as outlined:

ECU Nephrology
I. The Core Competencies

The ACGME Core Competencies
Beginning in July 2001, the Accreditation Council for Graduate Medical Education (ACGME) has introduced six newly defined areas of competency which residents/fellows must obtain over the course of their training. The competencies and working definitions are as follows:

1. Patient Care: Residents are expected to provide patient care that is compassionate, appropriate and effective for the promotion of health, prevention of illness, treatment of disease and care at the end of life.

- Gather accurate, essential information from all sources, including medical interviews, physical examination, records, and diagnostic/therapeutic procedures.
  Make informed recommendations about preventive, diagnostic, and therapeutic options and interventions that are based on clinical judgment, scientific evidence, and patient preferences.
- Develop, negotiate and implement patient management plans.
- Perform competently the diagnostic procedures considered essential to the practice of general internal medicine.

2. Medical Knowledge: Residents are expected to demonstrate knowledge of established and evolving biomedical, clinical and social sciences, and demonstrate the application of their knowledge to patient care and education of others.

- Apply an open-minded and analytical approach to acquiring new knowledge.
- Develop clinically applicable knowledge of the basic and clinical sciences that underlie the practice of internal medicine.
- Apply this knowledge in developing critical thinking, clinical problem solving, and clinical decision-making skills.
- Access and critically evaluate current medical information and scientific evidence and modify knowledge base accordingly.

3. Practice-Based Learning and Improvement: Residents are expected to be able to use scientific methods and evidence to investigate, evaluate, and improve their patient care practices.

- Identify areas for improvement and implement strategies to improve their knowledge, skills, attitudes, and processes of care.
- Analyze and evaluate their practice experiences and implement strategies to continually improve their quality of patient practice.
- Develop and maintain a willingness to learn from errors and use errors to improve the system or processes of care.
- Use information technology or other available methodologies to access and manage information and support patient care decisions and their own education.

4. Interpersonal Skills and Communication: Residents are expected to demonstrate interpersonal and communication skills that enable them to establish and maintain professional relationships with patients, families, and other members of health care teams.

- Provide effective and professional consultation to other physicians and health care professionals and sustain therapeutic and ethically sound professional relationships with patients, their families, and colleagues.
- Use effective listening, nonverbal, questioning, and narrative skills to communicate with patients and families.
- Interact with consultants in a respectful and appropriate fashion.
- Maintain comprehensive, timely, and legible medical records.

5. Professionalism: Residents are expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, an understanding and sensitivity to diversity and a responsible attitude toward their patients, their profession, and society.

- Demonstrate respect, compassion, integrity, and altruism in their relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to patients and colleagues, including gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
- Adhere to principles of confidentiality, scientific/academic integrity, and informed consent.
- Recognize and identify deficiencies in peer performance.

6. Systems-Based Practice: Residents are expected to demonstrate an understanding of the contexts and systems in which health care is provided, and demonstrate the ability to apply this knowledge to improve and optimize health care.

- Understand, access, and utilize the resources and providers necessary to provide optimal care.
- Understand the limitations and opportunities inherent in various practice types and delivery systems, and develop strategies to optimize care for the individual patient.
- Apply evidence-based, cost-conscious strategies to prevention, diagnosis, and disease management.
- Collaborate with other members of the health care team to assist patients in dealing effectively with complex systems and to improve systematic processes of care.

ECU Nephrology
II. Overall Program Goals and Objectives

OVERALL GOALS AND OBJECTIVES

The overall goal of the East Carolina University Nephrology Fellowship Program is to develop competent nephrologists in the pathophysiology, diagnosis, and treatment of kidney related disorders across a socioeconomically and culturally diverse spectrum of patients, treatment settings, and levels of care. Fellows will focus on several broad areas of clinical, educational and research areas to develop the needed skills to practice state of the art nephrology in the broadest settings. During the training period and upon completion of the program, nephrology fellows will gain clinical experience in all the components delineated in the Program Requirements for Fellowship Education in Nephrology Specific Program Content, and be competent in these areas upon completion of the program. In addition, fellows will specifically:

1. Gain experience with longitudinal care for nephrology patients with complex medical conditions.
2. Achieve proficiency in the recognition and management of acute problems commonly encountered in the dialysis and transplant patient.
3. Develop the cognitive skills necessary to provide optimal care to patients with chronic kidney disease, patients requiring dialysis, those who have received kidney transplants and other nephrology patients admitted to the hospital.
4. Provide expert consultation and training to other physicians and professionals involved in managing nephrology patients in a variety of clinical settings; ie an ICU, step-down unit, medical floor (3S), surgical floor, rehabilitation unit, emergency department.
5. Develop proficiency with hemodialysis, peritoneal dialysis, continuous renal replacement therapy and plasmapheresis.
6. Gain experience in the administrative processes required to manage an outpatient dialysis unit.
7. Gain experience with the supervision of a team of health care providers; ie medical students, interns, senior residents, nurses, dietician, social worker, etc.
8. Be provided opportunities to develop teaching and research skills.

The following overall objectives, **arranged by general competencies**, apply to all nephrology fellows during all rotations. Methods used to assess those competencies are listed in parentheses after item.

A. Medical knowledge. Medical knowledge is obtained by participating in direct patient care on the consult and service rotations at the hospital. Medical knowledge is also obtained through the care of outpatients including continuity clinic, hemodialysis cohort, peritoneal dialysis clinic, acute transplant clinic and chronic transplant clinic. Fellows will gain medical knowledge through attendance at nephrology core curriculum lectures, nephrology grand rounds, nephrology journal club and renal biopsy conference. Fellows are expected to read as they progress through their training. In the spring of each year, all fellows will take the NBME an in-training exam. During one month of their 2nd year each fellow will have a focused independent study month to enhance their medical knowledge in one of the key components outlined in the ABIM blueprint.

The study topic is selected by the fellow based on suboptimal scores on the in-training exam or in an area they feel requires further study. (*Medical knowledge is assessed by direct clinical supervision, discussion during didactics, during feedback for each monthly rotation, during semi-annual evaluations, by scores on the annual in-training exam, and ultimately by passing the nephrology boards*.)

Specific objectives:

1. To be familiar with the epidemiology, risk factors and treatment for commonly encountered conditions affecting patients with end-stage renal disease including vascular access related complications and sepsis, metabolic complications including disturbances of mineral metabolism, metabolic acidosis and electrolyte disturbances, anemia and malnutrition.
2. To be familiar with the epidemiology and risk factors for commonly encountered conditions affecting patients following kidney transplantation including acute and chronic rejection, infection, metabolic complications, urinary tract obstruction and cardiovascular disease.
3. General ESRD statistics including morbidity, mortality, costs to society and the healthcare system.
4. Advanced management of specialized patient populations including acute renal failure requiring continuous renal replacement therapy (CRRT), and patients with conditions requiring therapy with plasmapheresis.
5. To have a comprehensive understanding of the pharmacology of all commonly used medications in chronic kidney disease and ESRD patient including:
    - Antihypertensive agents
    - Antibiotics and antiviral agents
    - Anticoagulation agents
    - Erythrocyte stimulating agents (ESA's) and Iron preparations
    - Phosphate binders and vitamin D therapies
    - Immunosuppression including induction, maintenance and anti-rejection therapies
6. To understand the role, principles and limitations of invasive procedures, diagnostic laboratory & radiological tests commonly used in nephrology including;
    - Indications, techniques for placement, complication recognition & management of non-tunneled and tunneled dialysis catheters
    - Indications, techniques and complications of vascular access management including declot, thrombolysis, and thrombectomy.
    - Indications, techniques for placement, complication recognition & management of peritoneal dialysis catheters.
    - Indications, techniques, and complication for native and transplant kidney biopsies
    - Knowledge of common laboratory tests including blood chemistries, hematology and microbiology interpretation.

B. Patient Care Patient Care experiences occur in a variety of settings. Fellows will provide care for patients in the hospital on 2 rotations: service and consults. They will provide patient care for transplant patients in a variety of hospital and nonhospital settings including service, consults, acute transplant clinic and chronic transplant clinic. They will participate in the evaluation of transplant recipients and donors during transplant rotations and outpatient rotations (recipient evaluations). Care of dialysis patients also occurs in both inpatient and outpatient

settings: service, consults, outpatient hemodialysis cohort every other month and monthly peritoneal dialysis clinic. **(***Patient care is assessed by direct clinical supervision, competency-based monthly evaluations, multisource evaluations, Chart-stimulated recall, review of patient and procedure logs quarterly and semi-annual evaluations.*)

Specific objectives:

1. Fellows will gather essential and accurate information by performing complete and clinically-relevant history and physical exams.
2. Fellows will understand how to order and interpret appropriate diagnostic tests.
3. Fellows will make informed diagnostic and treatment decisions by analyzing and synthesizing information.
4. Fellows will understand the limits of their knowledge and expertise and will use consultants and referrals appropriately.
5. Fellows will develop and carry out care plans as well as develop superb communication abilities.
6. Fellows will perform a variety of invasive procedures competently including the ability to correct complications resulting from these procedures.
7. Fellows will routinely participate in conversations with family members to gather other clinical information, understand patient's and families wishes.
8. Fellows will become competent in palliative care and end of life discussions

C. Practice-Based Learning and Improvement Fellows have the opportunity to participate in learning and improving through their practices in a variety of clinical settings. This includes nephrology patients on the service, patients seen as part of the fellow's continuity clinic, patients on the fellow's hemodialysis cohort and their peritoneal dialysis patients. Transplant care occurs through a longitudinal process as patients progress through 4 months in acute transplant clinic and then transition into chronic transplant clinic. Through the Dialysis Crosscut project, fellows critically assess longitudinal monthly indicators, intervene on these indicators, assess outcomes and then annually revise indicators in terms of those they feel should be ongoing versus those that are replaced. Additional opportunities for practice-based learned include the outpatient dialysis setting during Continuous Quality Improvement (CQI) meetings and Care Plan Meetings. (*Assessed by direct clinical supervision, review of patient and procedure logs, follow-through on questions posed during supervision, attendance at core curriculum lectures, through Journal Club and other presentations, review of clinical practice during case conference, through participation and assessments of outcomes in the Dialysis Crosscut Performance Improvement Project*.)

Specific objectives:

1. To keep logs of all major procedures including non-tunneled (vascath) dialysis catheter placement, native and transplant biopsies.
2. To use current evidence-based practice guidelines, and to obtain supervision when existing guidelines require supplementation with experience-based practices for individual cases.
3. To access and use on-line medical information as pertains to patients' diagnosis and treatment in the form of reference texts, searches, electronic journals such as Ovid, PubMed, UpToDate, MD Consult and other networked resources as made available

through the East Carolina University Health Sciences Library (http://www.hsl.ecu.edu) or the Vidant Medical Center intranet homepage http://www.myvidanthealth.com.

4. To critically read and discuss the relevant scientific literature presented in Journal Club, (for example) while seeking application to actual practice.
5. To participate in the Dialysis Crosscut Project: ongoing follow-up of chronic hemodialysis cohort patients every other month, assessment of designated monthly quality indicator parameters and to follow-up outcomes and changes in practice based upon these outcomes.

D. Interpersonal and Communication Skills Fellows participate and refine their ability to communicate through interactions with each other, with supervising faculty, with staff, and with patients and families. They must be able to communicate with a variety of staff in a supportive role including physician extenders, social workers, dieticians, dialysis nurses, ICU nurses, and clinic nurses. Communication with referring nephrologists, with colleagues during conferences and electronically through flags, routed documents and clinical notes are part of becoming proficient in this competency. (*Assessed by direct clinical observation, competency-based monthly evaluations during all rotations, multisource evaluations, developing competency in effective communication exercise, presentation and rounding skills, participation and response to questioning during case conference, review of healthspan schedule for completion of timely medical records.*)

Specific objectives:

1. Fellows will exhibit communication that is characterized by socio-cultural effectiveness.
2. Fellows will demonstrate the ability to develop highly effective therapeutic relationships with patients and families.
3. To establish collaborative and effective working relationships with other staff members involved in patient care including supervising nephrology faculty, nurses, physician extender (PA), social worker, dietician, pharmacists, fellow colleagues, other physicians and trainees.
4. To complete the competency in effective communication exercise in the discharge of one or more service patients.
5. To function effectively as a team member and leader such as in 2nd year where each fellow will lead the service team on management-teaching rounds.
6. Fellows will communicate respectfully and effectively with other health professionals.
7. Fellows will be able to act in a consultative role to other physicians and health professionals.
8. Fellows will maintain comprehensive, timely, effective, and legible medical records.

E. Professionalism Professionalism will be taught in didactic sessions, through role-modeling and through behavior feedback. Nephrology fellows will be expected to promote and strive for professional attitudes and behavior in the interactions among each other, with faculty and staff, with patients. (*Assessed by direct clinical observation, competency-based monthly evaluations during all rotations, multisource evaluations, presentation skills, attendance & contributions during conferences and other meetings such as care plan and CQI, timely completion of quarterly patient and procedure logs, review of healthspan schedule for completion of timely medical records.*)

Specific objectives:

1. Fellows will document all relevant diagnostic and treatment encounters with patients through effective medical record keeping.
2. Fellows will demonstrate accountability, reliability, and punctuality during performance of all responsibilities and duties.
3. Fellows will maintain a healthspan continuity clinic patient list as well as log key procedures and turn these into the program director quarterly for review.
4. Fellows will demonstrate a balance between independence and recognition of limits of competence/experience.
5. Fellows will conduct him/herselves in an ethically and legally sound manner with respect to issues such as maintenance of treatment boundaries, patient confidentiality, informed consent, provision or withholding of clinical care, and good business practices.
6. Fellows will strive to provide the best care possible to their patients, to be a patient advocate, and to promote patient safety at all times.

F. Systems-Based Practice Nephrology fellows must realize the larger system within which they perform their daily duties. As a discipline, nephrology in and of itself is an excellent example of systems-based practice. Fellows will utilize the expertise and teamwork of many individuals to care for their patients. These include but are not limited to fellows, faculty, referring nephrologists/physicians, clinic nurses, hemodialysis nurses, peritoneal dialysis nurses, ICU nurses, 3 South nurses, social workers, discharge planners, dieticians, pharmacists, renal pathologist, radiologist, interventional radiologist, schedulers, administrative assistants, physician extenders, and consultants. (*Assessed by direct clinical supervision, by competency-based monthly evaluations, multisource evaluations, attendance and participation in dialysis care plans and CQI meetings.*)

Specific objectives:

1. To understand the management of complex nephrology patients with multiple comorbid conditions, and how one tailors a patient's treatment to the resources available without compromising quality care.
2. To understand the quality improvement process for CKD and dialysis patients and how to partner with health care managers and providers to assess, coordinate and improve care.
3. To develop awareness of cost-effectiveness issues with the care of CKD, dialysis and transplant patients.
4. To act as a patient advocate for helping patients and families navigate through sometimes complex and bureaucratic systems related to their health-care needs, patient wishes and resources available.
5. To appreciate the necessity and rationale for various program policies and procedures.

III. Competency-Based Advancement Criteria

For advancement to the 2nd year of training:

Patient Care

- Obtain a comprehensive nephrologic history from patients with renal disorders.
- Perform a thorough and appropriate physical examination specific for patients with renal disorders.
- Demonstrate proficiency with temporary dialysis catheter placement.

Medical Knowledge

- Achieve > 40% on in-service examination in the spring of the 1st year.
- Attend no less than 80% of required conferences.
- At minimum, based on each fellow's research project, submit an abstract for a national nephrology meeting such as American Society of Nephrology, American Society of Hypertension or American Society of Transplantation.

Practice-Based Learning and Improvement

- Demonstrate ongoing involvement in the planning, assessment and evaluation of patients in the Crosscut Project.
- Demonstrate an improvement project that is in the planning stages or underway that will improve the care of patients or improve the educational aspect of the Nephrology training program.

Interpersonal Skills and Communication

- Maintain an overall score of 5 or greater in the area of interpersonal skills and communication on faculty evaluation of fellows and 360 degree (multisource) evaluations.
- Maintain comprehensive, timely, and legible patient and procedure logs and medical records.

Professionalism

- Demonstrate respect, compassion, integrity, and altruism in their relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to patients and colleagues, including gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
- Be familiar with and follow all aspects of the Nephrology Fellow Manual.

Systems-Based Practice

- Continue developing a working relationship with outpatient hemodialysis shift and the systems in place to provide the best possible care for our patients: attend CQI, Care Plan, consult with the dialysis dietician and social worker as needed, take advantage of the afternoon shift "team" approach for mentoring, oversight and support.

For completion of training:

Patient Care

- Independently obtain a comprehensive nephrologic history and perform a thorough and appropriate physical examination specific for patients with renal disorders.
- Continued demonstration of proficiency with temporary dialysis catheter placement.
- Demonstrate proficiency with percutaneous biopsy of the kidney.

Medical Knowledge

- Achieve > 50% on in-service examination in the spring of the 2nd year.
- Have formal board review study plan underway.
- Attend no less than 80% of required conferences.
- Complete research project and publication of abstract, case report, case series, or review article.

Practice-Based Learning and Improvement

- Complete assessment and evaluation of patients in the Crosscut Project.
- Demonstrate evidence of a completed improvement project that will improve the care of patients or improve the educational aspect of the Nephrology training program.

Interpersonal Skills and Communication

- Maintain an overall score of 6 or greater in the area of interpersonal skills and communication on faculty evaluation of fellows and 360 degree (multisource) evaluations.
- Maintain comprehensive, timely, and legible patient and procedure logs and medical records.

Professionalism

- Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues.
- Demonstrate sensitivity and responsiveness to patients and colleagues, including gender, age, culture, religion, sexual preference, socioeconomic status, beliefs, behaviors and disabilities.
- Be familiar with and follow all aspects of the Nephrology Fellow Manual.

Systems-Based Practice

- Demonstrate a working relationship with outpatient hemodialysis shift and the ability to actively participate in CQI, run Care Plan, and utilize support staff as needed.
- Understand the limitations and opportunities inherent in the care of nephrology patients and develop strategies to optimize care for the individual patient.

ECU Nephrology Fellowship
IV. Curriculum

1. **Conferences**

2. **Curricular Components by Competency**

3. **Clinical Experiences**
   - **Goals and Objectives of Major Rotations**
   - **Outpatient Experiences**

Conferences

The division of Nephrology at East Carolina University School of Medicine maintains an active educational conference program. Fellows should consider these conferences to be mandatory unless patient related emergency takes precedence.

Case Conference

General Description: occurs weekly and is attended by the nephrology consult team and the service team as well as all other faculty and fellows not away or out of the office. The nephrology fellow is responsible for presenting cases at this conference or in assisting other team members in the preparation of their case. This conference also serves as a morbidity and mortality conference as issues of quality of care and complications of treatment may arise.

Goal: To provide a formal forum for weekly discussion of interesting cases (either from a diagnostic or treatment perspective), morbidities and mortalities.

Objectives:
1) The fellows will demonstrate knowledge and communication skills in providing succinct overviews of patient care and complications.
2) The fellows will develop skill in responding to faculty questions about patient issues and accepting responsibility for errors made.

Core Curriculum

General Description: occurs on average once per week and includes orientation lectures, board review lectures and relevant basic science topics. This series is designed to provide a didactic supplement to the nephrology fellow's clinical training and encompasses a spectrum of topics appropriate for meeting curriculum requirements. Nephrology fellows are expected to attend this conference. This series is repeated every year and a growing collection of electronic powerpoint presentations from these lectures is available at \\Piratedrive\ecukidney\PowerpointTalks\FellowsLectureSeries and on www.nephrologyondemand.org

Goal: To provide a didactic supplement to the fellow's clinical training throught a spectrum of topics delineated in the curriculum.

Objectives:
1) At the beginning of the academic year (first 6 weeks) through faculty-led conferences, fellows will develop fundamental knowledge and skills in key nephrology topics such as: dialysis, transplantation, procedures and electrolyte disturbances.
2) At the end of the academic year (last 12 weeks) through faculty-led conferences, fellows will focus their studies and discussion on Board Review topics to better prepare them for their specialty board exam.
3) During the bulk of the academic year the core curriculum conference will focus on topics reflecting necessary knowledge and skill in the study and practice of nephrology.

Journal Club

General Description: occurs monthly. Each nephrology fellow is responsible for presenting up to 6 journal articles per year at this conference. Additionally, journal articles may be presented by attending physicians.

Goal: To enhance fellow's knowledge through a review and discussion of selected journal articles.

Objectives:
1) To expand fellow's knowledge as they use evidence-based medicine to critically assess peer-reviewed scientific articles.
2) Through discussion with faculty, assist fellows in understanding how to apply concepts from current literature to patient care.

Nephrology Grand Rounds

General Description: occurs once monthly and includes an extensive review of a topic within nephrology. Speakers include nephrology fellows, faculty, and invited guests. The nephrology fellow is expected to present at least once per year at this conference.

Goal: To extensively review interesting and pertinent topics in Nephrology.

Objectives:
1) To utilize the expertise of nationally known specialists to review and discuss special topics in nephrology.
2) To enhance fellows' exposure to topics and experts in the field of nephrology
3) To expand fellows' knowledge and experience in specific areas by having them research and present a topic of interest.

Fellow's Pathology Conference

General Description: occurs once monthly as part of the core curriculum and is a didactic conference for nephrology fellows given by the ECU renal pathologist. This conference educates fellows in various areas of renal pathology and prepares them to present at Renal Biopsy Conference.

Goal: To expose and educate fellows in various areas of renal pathology.

Objectives:
1) To expand fellows' knowledge about various areas of renal pathology through lectures by, and discussions with, a renal pathologist.
2) To assist fellows in their understanding of renal pathology, thus preparing them to present at Renal Biopsy Conference.

Renal Biopsy Conference

General Description: occurs once monthly and is a review of 4-7 recent biopsy cases. Fellows present any patients they have biopsied, and are called upon to describe pathology findings on presented tissue slides.

Goal: To review recent biopsy cases and discuss the pathology

Objective:
1) To increase fellows' knowledge about their patients' diseases by having them describe pathology finding from biopsies on presented tissue slides.

Dialysis Care Plan Conference

General Description: a monthly multidisciplinary conference which stresses system improvement issues and individual patient data trending.

Goal: To discuss system improvement issues and individual patient data trending

Objective:
1) To increase fellows' knowledge and awareness of system improvement issues and individual patient data trending through discussion involving a multidisciplinary team of healthcare professionals.

Continuous Quality Improvement (CQI) Conference

General Description: a multidisciplinary conference where ECU Dialysis shift and global trends are reviewed and quality improvement measures are implemented and monitored.

Goal: To review and discuss ECU Dialysis shift and global trends

Objectives:
1) To expose fellows to the magnitude of quality improvement issues that exist within the operations of a dialysis unit
2) To expose fellow to the multi-disciplinary approach to solving system issues.
3) To engage residents in the process of individual patient data trending

Divisional Research Conference

General Description: conducted on the 4th Monday of each month from 12:30-1:30 pm in the ECU Nephrology Conference Room. Participants include all fellows, Dr. Hames, Dr. Christiano, interested faculty, and members of ECU Nephrology Research team (Karen Parker, Connie Manning, Winifred Bryant, Ashley Allsbrook). This conference allows discussion by fellows and faculty of ongoing research ideas and projects along with specific topics in research design and methodology.

Goal: For fellows and faculty to discuss ongoing research ideas and projects within the division

Objectives: 1) To develop fellows' knowledge about research design and methodology.

2) Fellows will engage in discussions of ongoing research projects in a multidisciplinary format thus improving their knowledge and awareness of fundamental design and implementation issues

2) Fellows will have the opportunity to receive feedback about research ideas thus improving the design and ultimate success of their projects

Internal Medicine Grand Rounds

General Description: occurs weekly and all nephrology fellows are expected to attend and on rare occasion may be involved in supplementary fashion in a presentation.

Goal: To provide an in-depth discussion of a topic within the realm of Internal Medicine

Objective: 1) To maintain fellows' awareness of and knowledge in Internal Medicine topics.

CURRICULAR COMPONENTS

Legend:

CC = Case Conference **JC = Journal Club** **FPC = Fellow's Pathology Conference**
FL = Fellow Lecture **NGR = Nephrology Grand Rounds** **RC = Research Conference**
ASNCC = ASN Core Curriculum

	TOPIC	Lecturer	Date	Learning Environment	PC	MK	PBL I	IS&C	P	SBP
	ANATOMY AND PHYSIOLOGY									
1	Renal Anatomy	KHL		FPC	X	X				
2	Glomerular Physiology	MJB		FL	X	X				
3	Tubular Physiology	MJB		FL	X	X				
4	Renal Pathology (12 lectures)	KHL	See sched	FPC	X	X				
	GERIATRIC NEPHROLOGY									
5	Geriatric aspects of nephrology including disorders of aging kidney and urinary tract			ASNCC	X	X				X
6	Drug dosing and renal toxicity in elderly patients			ASNCC	X	X				X
	FLUID, ELECTROLYTE, ACID-BASE									
7	Sodium emergencies	PB		FL (orientation)	X	X				
8	Hypo/hypernatremia	TD		FL	X	X				
9	Hypo/hyperkalemia	MJB		FL (orientation)	X	X				
10	Metabolic Acidosis: AG/nonAG	TD		FL	X	X				
11	Metabolic Alkalosis: +/- HTN	WB		FL	X	X				
	ACUTE RENAL FAILURE									
12	ARF	WB		FL	X	X				
13	CRRT workshop	RB		FL (orientation)	X	X				
14	CRRT lecture	MJB		FL	X	X				
	CHRONIC KIDNEY DISEASE									
15	Early CKD (stages 1-3) and DM	MH		FL	X	X				
16	Late CKD (stages 4-5) and preparation for dialysis	CC		FL	X	X				
	METABOLIC BONE DISEASE									
17	Normal mineral metabolism, secondary hyperparathyroidism and divalent cations (1-2 lect)	CC		FL	X	X				

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18	Nephrolithiasis	TD		FL	X	X				
19	Lithotripsy	JT		FL		X				
	HYPERTENSION									
20	Normal and abnl BP regulation			FL	X	X				
21	Hypertension: Key trials and JNC VII guidelines			FL	X	X				
22	Hypertension Syndromes: endocrine, RAS	MJB		FL	X	X				
	PREGNANCY									
23	Renal Disorders of Pregnancy	HL		FL	X	X				
	GLOMERULAR DISEASE									
24	Lupus Nephritis	MJB		FL	X	X				
25	Vasculitis	KHL		FPC	X	X				
26	Immunologic mechanisms of renal dz and diagnostic laboratory immunology relevant to renal diseases	LR		HLA lab	X	X				
	INHERITED AND TUBULOINTERSTITIAL DZ									
27	Tubular syndromes and inherited dzs of transport	MJB		FL(board review)	X	X				
28	Cystic Diseases and AIN	MH		FL(board review)	X	X				
29	Genetic/inherited renal disorders and cystic diseases	MH		FL (board review)	X	X				
	URINARY TRACT INFECTION									
30	UTI Pathogenesis/Management			FL	X	X				
	HEMODIALYSIS									
31	Introduction to HD: (1)kinetic principles of dialysis, (2)indication for HD, (3)artificial membranes used in HD and biocompatibility	CC		FL	X	X				
32	Water talk: (1)Dialysis water tx, (2)delivery systems, (3)reuse of artifical kidneys	CC		FL	X	X				
33	Complications in HD: (1)Pathogenesis, (2)Prevention, (3)Evaluation and (4)Management of complications during and between dialysis txs	CC		FL	X	X				
34	Bone Biopsy	MH		FL		X				
	PERITONEAL DIALYSIS									
35	PD Workshop	SC		FL (orientation)	X	X				
36	Intro to PD: (1)Principles and practice of PD, (2)Indications for PD	HL		FL	X	X				

Legend:

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37	Physiology and kinetic principles of PD	HL		FL	X	X				
38	PD technique: (1)Principles of PD catheters and how to choose appropriate catheters, (2)Management of PD catheters, (3)Complications of PD catheters, (4)Technology of CAPD and CCPD/use of automated cyclers	HL		FL	X	X				
39	Assessment of PD: (1)How to assess PD adequacy and efficiency, (2)PET test, (3)Writing a PD prescription	HL		FL	X	X				
40	Infectious Complications of PD	HL		FL	X	X				
41	Noninfectious Complications of PD	HL		FL	X	X				
42	Establishment of peritoneal access, the principles of dialysis catheters, how to choose appropriate catheters, principles of peritoneal biopsy			FL	X	X				
	PSYCHOSOCIAL/ETHICAL ISSUES OF DIALYSIS									
43	Psychosocial and ethical issues of dialysis: end of life care and pain management in the care of pts undergoing chronic dialysis	SR		NGR	X	X	X	X	X	
	NUTRITION									
44	Nutrition in CKD: (1) nutritional requirements of pts undergoing HD and PD, (2) Nutritional aspects of renal disorders, (3) Nutritional management of dialysis pts, (4) urea kinetics and protein catabolic rate	LM		NGR	X	X				
	PROCEDURES									
45	Urinalysis	MJB		FL	X	X				
46	Principles and radiology of vascular access, balloon angioplasty of vascular access, or other procedures utilized in the maintenance of chronic vascular access patency	RH		FL	X	X				X
47	Procedural instruction: temporary vascular access and kidney biopsy	MJB		FL (orientation)	X	X				
48	Therapeutic plasmapheresis	MH		FL	X	X				
	IMAGING									
49	Indications for and interpretations of radiologic tests of the kidney and urinary tract	TD		FL	X	X				
	TRANSPLANT									
50	Immunology of transplantation	LR		FL, AST curricu	X	X				
51	Metabolic and Infectious Complications of transplantation	KLJ		FL, AST curricu	X	X				

Legend:

CC = Case Conference **JC = Journal Club** **FPC = Fellow's Pathology Conference**
FL = Fellow Lecture **NGR = Nephrology Grand Rounds** **RC = Research Conference**

52	Donor and Recipient Issues	CH		FL, AST curricu	X	X				
53	Postoperative Management including Acute Graft Dysfunction	KLJ		FL, AST curricu	X	X				
54	Pharmacology of Immunosupp	SE		FL, AST curricu	X	X				
	PHARMACOLOGY									
55	Disorders of drug metabolism, pharmacokinetics and nephrotoxicity			FL	X	X				
56	Clinical pharmacology, including drug metabolism and pharmacokinetics and the effects of drugs on renal structure and function			FL	X	X				
57	Modification of drug dosage during dialysis and other extracorporeal therapies			FL	X	X				
58	The pharmacology of commonly used medications and their kinetic and dosage alteration with peritoneal dialysis			FL	X	X				
	OTHER									
59	OSHA regulations and universal precautions and protection of health care workers		orientation	FL		X	X			X
60	Quality assessment and improvement	CC	monthly	FL			X	X		X
61	Cost effectiveness			FL	X		X			X
62	Health Care Policy			JC			X			X
63	Evaluation of medical literature		monthly	JC	X	X	X			
64	Clinical study design		monthly	RC		X				
65	Medical decision-making			FL	X	X	X			
66	Principles of palliative care for terminally ill patients	SR		NGR	X	X		X		
67	Patient Counseling skills and community education	SR		NGR				X		
68	Clinical ethics	LK		FL					X	
69	Medical Genetics			FL		X				
70	Patient Safety	GA		NGR	X		X		X	X
71	Risk Management	JC		FL	X		X	X		X
72	Preventive Medicine			FL	X	X	X			
73	Pain Management			FL	X	X				
74	Physician Impairment		orientation	FL			X		X	

Revised 7/1/13

Clinical Experiences:
Goals and Objectives by year of training with Integration of Core Competencies

1. **Consult Rotation**
2. **Service Rotation**
3. **Outpatient Rotation**
4. **Dialysis Rotation**
5. **Transplant Rotation**
6. **Research Rotation**
7. **Independent Study Rotation**
8. **Urology Rotation (elective)**
9. **Interventional Nephrology Rotation (elective)**
10. **Pediatric Nephrology Rotation (elective)**
11. **ENA Outpatient Rotation (elective)**
12. **Dialysis Medical Director Rotation (elective)**
13. **Radiology Rotation (elective)**

Consult Rotation (1st year)

Length of Rotation: 4 weeks
Type of Rotation: required

Overview:

Fellows will complete three months on the nephrology consult rotation at Vidant Medical Center in the 1st year. Fellows will work closely with the Consult Attending and any housestaff or students who are assigned to the rotation.

Principle Teaching/Learning Activities:

- **(IC) Initial Consultation:** Fellows will perform all initial evaluations on new consults and will direct the initial plan of management. The fellow will discuss each new consult in detail with the Consult Attending and they will see the patient together.
- **(DPC) Daily Patient Care:** The fellow will coordinate daily follow-up as needed by him/herself or other resident/student members of the consult team.
- **(AR) Attending Rounds:** The Consult Attending makes daily teaching and management Attending Rounds with the team.
- **(DT) Diagnostic tests**: Urinalysis, 24 hour urine studies, renal ultrasound, CAT scans, and other diagnostic tests are reviewed with the Consult Attending
- **(DSP) Directly Supervised Procedures:** Fellows will place temporary dialysis catheters when needed for consultative patients. Until deemed proficient, these procedures are directly supervised by the Consult Attending. Fellows may perform kidney biopsies as needed on consultative patients under the direct supervision of the Consult Attending.
- **(HDR) Hemodialysis Rounds:** Fellows will round on patients undergoing hemodialysis in the dialysis unit or "off-unit" at the patient's bedside.
- **(CRRT) Continuous Renal Replacement Therapy:** Fellows will round at least once per day on patients undergoing continuous renal replacement therapy in the intensive care unit.
- **(CC) Case Conference:** Fellows on the consult rotation present patients at weekly case conference on Thursday 12:30-1:30pm in the ECU Dialysis Conference Room.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Consult Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Evaluate and manage, with attending assistance, patients with acute renal failure, fluid/electrolyte imbalance and acid/base problems.	IC, DPC, AR, DT, HDR, CRRT
Evaluate and manage, with attending assistance, consultative patients with end-stage renal disease.	IC, DPC, AR, DT, HDR, CRRT
Evaluate and manage, with attending assistance, patients with pregnancy related disorders: pre-eclampsia, chronic hypertension in pregnancy.	IC, DPC, AR, DT, HDR, CRRT
With attending assistance, evaluate patients on hemodialysis and write hemodialysis orders.	DPC, AR, HDR
With attending assistance, evaluate patients on peritoneal dialysis and write peritoneal dialysis orders.	IC, DPC, AR
With attending assistance, evaluate patients on plasmapheresis and write plasmapheresis orders.	IC, DPC, AR
With attending and pharmacy assistance, ensure proper drug dosing in all patients to avoid nephrotoxic agents and dose-adjust for kidney function as needed.	IC, DPC, AR, DT, HDR, CRRT

With attending assistance, learn how to insert temporary dialysis catheters with proper technique	DSP
Perform kidney biopsies with attending assistance utilizing proper technique	DSP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Build a clinically applicable knowledge base of the basic and clinical sciences underlying the care of patients with acute and chronic kidney disease.	IC, DPC, AR, CC
Access and critically evaluate current medical information and scientific evidence relevant to care of patients with renal failure.	IC, DPC, AR, CC
Discuss interesting cases from the consult service at weekly case conference	CC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify, acknowledge and correct gaps in personal knowledge and skills in the care of patients with acute and chronic kidney disease.	IC, DPC, AR, CC
Analyze rounding patterns and identify areas for improvement to optimize and balance quality care of acute and chronically ill kidney patients.	DPC, AR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
With attending assistance, educate and update patients and their families as to the nature of the patient's kidney problem and concurrent illness.	IC, DPC, AR
With attending assistance, thoroughly explain to patients and their family necessary procedures and tests in terms that the patient can understand to allow for true informed consent as well as strengthening of patient-physician relationships.	DPC, AR, DSP, HDR, CRRT
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	IC, DPC, AR, HDR, CRRT
Communicate effectively with colleagues when signing out patients or turning care over to the Renal Service.	DPC, AR
Communicate effectively with dialysis social worker, outpatient physician extender, outpatient dialysis nurses and primary nephrologist when making discharge arrangements.	DPC, AR, HDR

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Professional conduct toward patients, families, colleagues, dialysis nurses and staff, floor nurses and staff and all other members of the health care team is expected.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Become familiar with and begin to utilize the multidisciplinary resources necessary to care optimally for patients with acute and chronic kidney disease: primary nephrologist, dialysis nurse, floor nurse, social worker, rehabilitation unit, outpatient physician extender, outpatient dialysis nurse, discharge planner, dietician, case manager	IC, DPC, AR, HDR, CRRT
Collaborate with other members of the health care team to assure comprehensive care for patients with kidney disease.	IC, DPC, AR, HDR, CRRT
Develop awareness of the limitations and opportunities inherent in the care of patients on dialysis and develop strategies to optimize individual patient care.	DPC, AR, HDR

Recommended Resources:

TEXTBOOK: Clinical Nephrology
Brenner and Rector
Burton Rose "Acid – Base"
Daugirdas dialysis handbook
Kaplan's HTN book

www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate

MDConsult via Vidant Medical Center homepage

www.hdcn.org (logon/password = ecukidney/library)

http://svch.blogspot.com/2004/07/procedure-skills-and-acls-refresher.html

http://content.nejm.org/cgi/reprint/334/22/1448.pdf

http://www.kidney.org/professionals/kdoqi/guidelines.cfm

http://ispd.org/lang-en/treatmentguidelines/guidelines

http://crrtonline.com/

ECU Plasmapheresis Manual

AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods

Fellows are formally evaluated by the ECU Consult Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Revised 3/15/11

Consult Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: required

Overview:

Fellows will complete three months in the second year. Fellows will work closely with the Consult Attending and any housestaff or students who are assigned to the rotation.

Principle Teaching/Learning Activities:

- **(IC) Initial Consultation:** Fellows will perform all initial evaluations on new consults and will direct the initial plan of management. The fellow will discuss each new consult in detail with the Consult Attending and they will see the patient together.
- **(DPC) Daily Patient Care:** The fellow will coordinate daily follow-up as needed by him/herself or other resident/student members of the consult team.
- **(AR) Attending Rounds:** The Consult Attending makes daily teaching and management Attending Rounds with the team.
- **(DT) Diagnostic tests**: Urinalysis, 24 hour urine studies, renal ultrasound, CAT scans, and other diagnostic tests are reviewed with the Consult Attending
- **(DSP) Directly Supervised Procedures:** Fellows will place temporary dialysis catheters when needed for consultative patients. Until deemed proficient, these procedures are directly supervised by the Consult Attending. Fellows may perform kidney biopsies as needed on consultative patients under the direct supervision of the Consult Attending.
- **(HDR) Hemodialysis Rounds:** Fellows will round on patients undergoing hemodialysis in the dialysis unit or "off-unit" at the patient's bedside.
- **(CRRT) Continuous Renal Replacement Therapy:** Fellows will round at least once per day on patients undergoing continuous renal replacement therapy in the intensive care unit.
- **(CC) Case Conference:** Fellows on the consult rotation present patients at weekly case conference on Thursday 12:30-1:30pm in the ECU Dialysis Conference Room.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Consult Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Evaluate and manage patients with acute renal failure, fluid/electrolyte imbalance and acid/base problems.	IC, DPC, AR, DT, HDR, CRRT
Evaluate and manage consultative patients with end-stage renal disease.	IC, DPC, AR, DT, HDR, CRRT
Evaluate and manage patients with pregnancy related disorders: pre-eclampsia, chronic hypertension in pregnancy.	IC, DPC, AR, DT, HDR, CRRT
Evaluate patients on hemodialysis and write hemodialysis orders.	DPC, AR, HDR
Evaluate patients on peritoneal dialysis and write peritoneal dialysis orders.	IC, DPC, AR
Evaluate patients on plasmapheresis and write plasmapheresis orders.	IC, DPC, AR
Ensure proper drug dosing in all patients to avoid nephrotoxic agents and dose-adjust for kidney function as needed.	IC, DPC, AR, DT, HDR, CRRT
Insert temporary dialysis catheters with proper technique	DSP

Perform kidney biopsies when indicated with proper technique	DSP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of patients with acute and chronic kidney disease.	IC, DPC, AR, CC
Access and critically evaluate current medical information and scientific evidence relevant to care of patients with renal failure.	IC, DPC, AR, CC
Discuss interesting cases from the consult service at weekly case conference	CC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify, acknowledge and correct gaps in personal knowledge and skills in the care of patients with acute and chronic kidney disease.	IC, DPC, AR, CC
Analyze rounding patterns and identify areas for improvement to optimize and balance quality care of acute and chronically ill kidney patients.	DPC, AR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Educate and update patients and their families as to the nature of the patient's kidney problem and concurrent illness.	IC, DPC, AR
Thoroughly explain to patients and their family necessary procedures and tests in terms that the patient can understand to allow for true informed consent as well as strengthening of patient-physician relationships.	DPC, AR, DSP, HDR, CRRT
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	IC, DPC, AR, HDR, CRRT
Communicate effectively with colleagues when signing out patients or turning care over to the Renal Service.	DPC, AR
Communicate effectively with dialysis social worker, outpatient physician extender, outpatient dialysis nurses and primary nephrologist when making discharge arrangements.	DPC, AR, HDR

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Professional conduct toward patients, families, colleagues, dialysis nurses and staff, floor nurses and staff and all other members of the health care team is expected.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Demonstrate understanding and utilize the multidisciplinary resources necessary to care optimally for patients with acute and chronic kidney disease: primary nephrologist, dialysis nurse, floor nurse, social worker, rehabilitation unit, outpatient physician extender, outpatient dialysis nurse, discharge planner, dietician, case manager	IC, DPC, AR, HDR, CRRT
Collaborate with other members of the health care team to assure comprehensive care for patients with kidney disease.	IC, DPC, AR, HDR, CRRT
Demonstrate understanding of the limitations and opportunities inherent in the care of patients on dialysis and develop strategies to optimize individual patient care.	DPC, AR, HDR

Recommended Resources:

TEXTBOOK: Clinical Nephrology
Brenner and Rector
Burton Rose "Acid – Base"
Daugirdas dialysis handbook
Kaplan's HTN book

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http://www.kidney.org/professionals/kdoqi/guidelines.cfm

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Approved by Governing Body 7/9/07; 5/7/10

Revised 3/15/11

Service Rotation (1st year)

Length of Rotation: 4 weeks
Type of Rotation: required

Overview:

Fellows will complete three months on the nephrology service rotation at Vidant Medical Center in the 1st year. Fellows will work closely with the Service Attending and any housestaff or students who are assigned to the rotation.

Principle Teaching/Learning Activities:

- **(IA) Inpatient Admission:** Fellows will evaluate and supervise (when appropriate) all initial evaluations on newly admitted patients and will direct the initial plan of management. The fellow will discuss each new admission in detail with the Service Attending.
- **(DPC) Daily Patient Care:** The fellow will coordinate daily follow-up as needed by him/herself or other resident/student members of the service team.
- **(AR) Attending Rounds:** The Service Attending makes daily teaching and management Attending Rounds with the team.
- **(DT) Diagnostic Tests:** Urinalysis, 24 hour urine studies, renal ultrasound, CAT scans and other diagnostic tests are reviewed with the Service Attending.
- **(DSP) Directly Supervised Procedures:** Fellows will place temporary dialysis catheters when needed for service patients. Until deemed proficient, these procedures are directly supervised by the Service Attending. Fellows may perform kidney biopsies as needed on service patients under the direct supervision of the Service Attending.
- **(HDR) Hemodialysis Rounds:** Fellows will round on patients undergoing hemodialysis in the dialysis unit or "off-unit" at the patient's bedside.
- **(CC) Case Conference:** Fellows on the service rotation present patients at weekly case conference on Thursday 12:30-1:30pm in the ECU Dialysis Conference Room.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Service Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Effectively evaluate and manage, with attending assistance, patients with end-stage renal disease (ESRD) including those who have received a kidney transplant.	IA, DPC, AR, DT, HDR
Evaluate and manage, with attending assistance, the medical complications of ESRD patients including cardiovascular disease, hypertension, peripheral vascular disease, disorders of mineral metabolism, fluid/electrolyte balance and acid/base disturbances.	IA, DPC, AR, DT, HDR
Evaluate and manage, with attending assistance, complications related to vascular access including line sepsis and access thrombosis.	IA, DPC, AR, DT, HDR
With attending assistance, evaluate patients on hemodialysis to include: writing of hemodialysis orders, management of intradialytic complications such as hypotension, disequilibrium syndrome and seizures.	DPC, AR, HDR
With attending assistance, evaluate patients on peritoneal dialysis to include: writing of peritoneal dialysis orders, management of infectious and noninfectious complications of peritoneal dialysis.	IA, DPC, AR, DT

Evaluate and manage, with attending assistance, kidney transplant patients with acute and chronic rejection, chronic allograft nephropathy, calcineurin inhibitor toxicity, and infection.	IA, DPC, AR, DT
With attending assistance, evaluate patients on plasmapheresis and write plasmapheresis orders.	DPC, AR
With attending and pharmacy assistance, ensure proper drug dosing in all patients to avoid nephrotoxic agents and dose-adjust for kidney function as needed.	IA, DPC, AR, DT, HDR
With attending assistance, learn how to insert temporary dialysis catheters with proper technique	DSP
Perform kidney biopsies with attending assistance utilizing proper technique	DSP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Build a clinically applicable knowledge base of the basic and clinical sciences underlying the care of patients with ESRD including those who have received a kidney transplant.	IA, DPC, AR, CC
Access and critically evaluate current medical information and scientific evidence relevant to care of patients with ESRD.	IA, DPC, AR, CC
Discuss interesting cases from the consult service at weekly case conference	CC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify and acknowledge gaps in personal knowledge and skills in the care of patients with ESRD.	IA, DPC, AR, CC
Analyze rounding patterns and identify areas for improvement to optimize and balance quality care of ESRD patients.	DPC, AR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
With attending assistance, educate and update patients and their families as to the nature of the patient's kidney problem and concurrent illness.	IA, DPC, AR
With attending assistance, thoroughly explain to patients and their family necessary procedures and tests in terms that the patient can understand to allow for true informed consent as well as strengthening of patient-physician relationships.	DPC, AR, DSP, HDR
With attending assistance, provide ongoing education and feedback to the service patients regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	DPC, AR
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	IA, DPC, AR, HDR
Communicate effectively with colleagues when signing out patients or turning care over to the Consult Service.	DPC, AR

Communicate effectively with dialysis social worker, outpatient PA, outpatient dialysis nurses and primary nephrologist when making discharge arrangements.	DPC, AR, HDR

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients, families, colleagues, dialysis nurses and staff, floor nurses and staff and all other members of the health care team.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Become familiar with and begin to utilize the multidisciplinary resources necessary to care optimally for patients with ESRD: primary nephrologist, dialysis nurse, floor nurse, social worker, rehabilitation unit, outpatient PA, outpatient dialysis nurse, discharge planner, dietician, case manager	IA, DPC, AR, HDR
Collaborate with other members of the health care team to assure comprehensive care for patients with ESRD.	IA, DPC, AR, HDR
Develop awareness of the limitations and opportunities inherent in the care of patients on dialysis and develop strategies to optimize individual patient care.	DPC, AR, HDR

Recommended Resources:

TEXTBOOK: Clinical Nephrology
Brenner and Rector
Burton Rose "Acid – Base"
Daugirdas dialysis handbook
Kaplan's HTN book

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www.hdcn.org (logon/password = ecukidney/library)
http://svch.blogspot.com/2004/07/procedure-skills-and-acls-refresher.html
http://content.nejm.org/cgi/reprint/334/22/1448.pdf
http://www.kidney.org/professionals/kdoqi/guidelines.cfm
http://ispd.org/lang-en/treatmentguidelines/guidelines
http://crrtonline.com/
ECU Plasmapheresis Manual
AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods

Fellows are formally evaluated by the ECU Service Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Service Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: required

Overview:

Fellows will complete two months on the nephrology service rotation at Vidant Medical Center in the second year. Fellows will work closely with the Service Attending and any housestaff or students who are assigned to the rotation.

Principle Teaching/Learning Activities:

- **(IA) Inpatient Admission:** Fellows will evaluate and supervise (when appropriate) all initial evaluations on newly admitted patients and will direct the initial plan of management. The fellow will discuss each new admission in detail with the Service Attending.
- **(DPC) Daily Patient Care:** The fellow will coordinate daily follow-up as needed by him/herself or other resident/student members of the service team.
- **(AR) Attending Rounds:** The Service Attending makes daily teaching and management Attending Rounds with the team.
- **(DT) Diagnostic Tests:** Urinalysis, 24 hour urine studies, renal ultrasound, CAT scans and other diagnostic tests are reviewed with the Service Attending.
- **(DSP) Directly Supervised Procedures:** Fellows will place temporary dialysis catheters when needed for service patients. Until deemed proficient, these procedures are directly supervised by the Service Attending. Fellows may perform kidney biopsies as needed on service patients under the direct supervision of the Service Attending.
- **(HDR) Hemodialysis Rounds:** Fellows will round on patients undergoing hemodialysis in the dialysis unit or "off-unit" at the patient's bedside.
- **(CC) Case Conference:** Fellows on the service rotation present patients at weekly case conference on Thursday 12:30-1:30pm in the ECU Dialysis Conference Room.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Service Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Effectively evaluate and manage patients with end-stage renal disease (ESRD) including those who have received a kidney transplant.	IA, DPC, AR, DT, HDR
Evaluate and manage the medical complications of ESRD patients including cardiovascular disease, hypertension, peripheral vascular disease, disorders of mineral metabolism, fluid/electrolyte balance and acid/base disturbances.	IA, DPC, AR, DT, HDR
Evaluate and manage complications related to vascular access including line sepsis and access thrombosis.	IA, DPC, AR, DT, HDR
Evaluate patients on hemodialysis to include: writing of hemodialysis orders, management of intradialytic complications such as hypotension, disequilibrium syndrome and seizures.	DPC, AR, HDR
Evaluate patients on peritoneal dialysis to include: writing of peritoneal dialysis orders, management of infectious and noninfectious complications of peritoneal dialysis.	IA, DPC, AR, DT
Evaluate and manage kidney transplant patients with acute and chronic rejection, chronic allograft nephropathy, calcineurin inhibitor toxicity,	IA, DPC, AR, DT

and infection.	
Evaluate patients on plasmapheresis and write plasmapheresis orders.	DPC, AR
Ensure proper drug dosing in all patients to avoid nephrotoxic agents and dose-adjust for kidney function as needed.	IA, DPC, AR, DT, HDR
Insert temporary dialysis catheters with proper technique	DSP
Perform kidney biopsies when indicated with proper technique	DSP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of patients with ESRD including those who have received a kidney transplant.	IA, DPC, AR, CC
Access and critically evaluate current medical information and scientific evidence relevant to care of patients with ESRD.	IA, DPC, AR, CC
Discuss interesting cases from the consult service at weekly case conference	CC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify and acknowledge gaps in personal knowledge and skills in the care of patients with ESRD.	IA, DPC, AR, CC
Analyze rounding patterns and identify areas for improvement to optimize and balance quality care of ESRD patients.	DPC, AR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Educate and update patients and their families as to the nature of the patient's kidney problem and concurrent illness.	IA, DPC, AR
Thoroughly explain to patients and their family necessary procedures and tests in terms that the patient can understand to allow for true informed consent as well as strengthening of patient-physician relationships.	DPC, AR, DSP, HDR
Provide ongoing education and feedback to the service patients regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	DPC, AR
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	IA, DPC, AR, HDR
Communicate effectively with colleagues when signing out patients or turning care over to the Consult Service.	DPC, AR
Communicate effectively with dialysis social worker, outpatient PA, outpatient dialysis nurses and primary nephrologist when making discharge arrangements.	DPC, AR, HDR

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients, families, colleagues, dialysis nurses and staff, floor nurses and staff and all other members of the health care team.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Demonstrate understanding and utilize the multidisciplinary resources necessary to care optimally for patients with ESRD: primary nephrologist, dialysis nurse, floor nurse, social worker, rehabilitation unit, outpatient PA, outpatient dialysis nurse, discharge planner, dietician, case manager	IA, DPC, AR, HDR
Collaborate with other members of the health care team to assure comprehensive care for patients with ESRD.	IA, DPC, AR, HDR
Demonstrate understanding of the limitations and opportunities inherent in the care of patients on dialysis and develop strategies to optimize individual patient care.	DPC, AR, HDR

Recommended Resources:

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Burton Rose "Acid – Base"
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Kaplan's HTN book

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http://ispd.org/lang-en/treatmentguidelines/guidelines
http://crrtonline.com/
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Approved by Governing Body 7/9/07; 5/7/10 *Revised 3/15/11*

Dialysis Rotation

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Fellows will complete one month on the Dialysis rotation in the 1st year. Fellows will work closely with Dr. Christiano, Medical Director of ECU Dialysis and the supervising Outpatient Attending who is assigned to the fellow's dialysis shift. This will occur at the ECU Nephrology and Hypertension office site.

Principle Teaching/Learning Activities:

- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient hemodialysis shift and once during the month with the hemodialysis shift teaching attending.
- **(CP) Care Plan:** Fellows and their supervising dialysis attending will attend and participate in the monthly care plan meeting for the fellow's shift.
- **(CQI) Continuous Quality Improvement Meeting:** Fellows will attend the monthly CQI meeting with Dr. Christiano.
- **(FSO) Fellow Sign-Out:** Fellow sign-out will occur at the end of each month to communicate with the junior or senior fellow partner about ongoing issues involving their shared hemodialysis shift and acute transplant patients.
- **(WT) Water Treatment Module:** This module designed by Dr. Christiano is to be completed during this rotation and includes tour of ECU Dialysis Water Treatment area, Water treatment lecture, fellow sketch of water treatment plan and awareness of AAMI standards through discussions, reading and lectures.
- **(AS) Access Surgeries:** Fellows will attend and/or scrub in on as many access surgeries as possible during this month. This is for observation purposes only.
- **(FL) Fellow Lectures:** Series of core curriculum lectures pertaining to dialysis topics.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Specifically refer to "ECU Dialysis Notebook" provided at the beginning of the rotation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Dialysis Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Round and document the patient's progress in the dialysis medical record at least twice monthly.	HDR
Examine vascular access if indicated.	HDR, AS
Utilize hemodialysis access monitoring tools in the care of patients.	HDR, AS

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Explain how to appropriately prepare a patient for long-term dialysis	FL, RL

Explain the physiologic principles of urea kinetic modeling.	FL, RL
Write a dialysis prescription and describe how to troubleshoot when adequacy is not achieved.	FL, RL, HDR, CP, FSO
Describe the acute and long-term complications of dialysis.	FL, RL, HDR, CP, FSO
Explain the importance of appropriate water treatment.	WT, HDR, CQI
Tour ECU Dialysis water treatment area and describe components	WT
Organize and sketch a water treatment plan	WT
Review and discuss articles related to AAMI standards and water-related emergencies	WT
Gain experience in the assessment, selection, and management of dialysis access: - observe placement of arteriovenous fistulas, grafts and tunneled hemodialysis catheters. - observe placement of tenchkoff catheters.	HDR, CP, FL, RL, AS
Review K/DOQI guidelines relating to the care of patients preparing for or initiating dialysis.	RL
Read NephSAP – ESRD and Dialysis (Nov 2012) and be prepared to answer and discuss the 25 accompanying questions with Dr. Christiano	RL
Read and be prepared to discuss with Dr. Christiano related articles in the fellows dialysis notebook	RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Analyze fellow (yourself) and attending rounding patterns and identify areas for improvement to optimize and balance quality care of acute and chronically ill kidney patients.	HDR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Provide ongoing education and feedback to the patients on your dialysis shift regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	HDR, CP
Develop vascular access communication skills by discussing follow-up care with dialysis nurses and supervising nephrologists.	HDR, CP, CQI
Prior to the beginning of the month, obtain sign-out from your junior or senior fellow partner regarding ongoing issues. Likewise, provide updated information back to your fellow partner at the end of the month.	FSO

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Provide care to the dialysis patient population with the highest ethical standards in mind and approach patients and families with the utmost respect and compassion.	HDR, CP

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Gain understanding of the role of the medical director in the management of a dialysis center by: - Attending monthly Continuous Quality Improvement (CQI) meetings - Attending meetings concerning drug formulary and protocols	CQI
Attend and participate in the monthly care plan meetings for the fellow's hemodialysis shift.	CP
OPTIONAL: You may travel with Drs. Christiano to observe rounds and/or CQI meetings at the Ayden and/or Snow Hill Dialysis Center.	HDR, CQI

Recommended Resources:

ECU Dialysis Rotation Notebook
TEXTBOOK: Clinical Nephrology
Brenner and Rector
Daugirdas dialysis handbook
www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate
MDConsult via Vidant Medical Center homepage
www.hdcn.org (logon/password = ecukidney/library)
http://www.kidney.org/professionals/kdoqi/guidelines.cfm
http://ispd.org/lang-en/treatmentguidelines/guidelines
ECU Nephrology Orientation presentation
AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods:

Fellows are formally evaluated by Dr. Christiano using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Revised 3/15/11

Outpatient Rotation (1st year)

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Fellows will complete two months on the outpatient nephrology rotation in the 1st year and three months in the second year. Fellows will work closely with the Outpatient Attending who is assigned to the rotation. This will occur at the ECU Nephrology and Hypertension office site.

Principle Teaching/Learning Activities:

- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient shift and once during the month with the hemodialysis shift teaching attending.
- **(CP) Care Plan:** Fellows and their supervising dialysis attending will attend and participate in the monthly care plan meeting for the fellow's shift.
- **(CQI) Continuous Quality Improvement Meeting:** Fellows will attend the monthly CQI meeting with Dr. Christiano.
- **(FSO) Fellow Sign-Out:** Fellow sign-out will occur at the end of each month to communicate with the senior fellow partner about ongoing issues involving their shared hemodialysis shift and acute transplant patients.
- **(FL) Fellow Lectures:** Series of core curriculum lectures pertaining to dialysis topics.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Also may refer to "ECU Dialysis Notebook" that was provided at the beginning of the Dialysis rotation.
- **(PD) PD Clinic:** Fellows and their supervising attending nephrologist will see peritoneal dialysis patients with urgent problems in the PD clinic at ECU Nephrology office. Fellows will shadow attendings in the majority of the attending PD clinics in order to learn the various management styles of caring for the PD patient.
- **(UC) Urgent Clinic:** Fellows and their supervising attending nephrologist will see urgent pre-dialysis and transplant patients in the ECU Nephrology clinic.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Outpatient Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Round and document the patient's progress in the dialysis medical record at least twice monthly.	HDR
With the assistance of the supervising attending, evaluate patients on hemodialysis to include: writing of hemodialysis orders, assessment of hemodialysis and ultrafiltration adequacy, management of intradialytic complications such as hypotension, disequilibrium syndrome and seizures.	HDR, FL, RL
With the assistance of the supervising attending, evaluate and manage the medical complications of dialysis patients including cardiovascular disease, hypertension, peripheral vascular disease, disorders of mineral metabolism, fluid/electrolyte balance and acid/base disturbances.	HDR, CP, FL, RL
With the assistance of the supervising attending, evaluate and manage complications related to vascular access including line sepsis and access thrombosis.	HDR, CP, FL, RL
Evaluate pre-dialysis and transplant patients requiring urgent attention with attending outpatient nephrologist.	UC

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Learn how to ppropriately evaluate and select patients for hemodialysis and peritoneal dialysis.	FL, RL
Learn how to assess hemodialysis adequacy and adjust hemodialysis prescription as needed.	HDR, CP, FL, RL
Learn how to assess peritoneal dialysis adequacy, PET testing and adjust peritoneal dialysis prescription as needed.	CP, PD, FL, RL
Become familiar with the various disorders of mineral metabolism including secondary hyperparathyroidism and renal osteodystrophy	HDR, CP, FL, RL
Review the K/DOQI guidelines and protocols for management of anemia	HDR, CP, FL, RL
Become familiar with the nutritional issues in the management of dialysis patients.	HDR, CP, FL, RL
Become familiar with the complications of hemodialysis including vascular access thrombosis and infection, intradialytic hypotension, seizures, cardiac arrest, drug reactions, hemolytic reactions, technical disasters	HDR, CP, FL, RL
Learn the infectious and noninfectious complications of peritoneal dialysis.	CP, PD, FL, RL
Become aware for the need to manage and monitor drug metabolism in end-stage renal disease.	HDR, PD, FL, RL
With attending assistance, evaluate pre-dialysis and transplant patients with acute problems to determine the need for: - inpatient vs. outpatient management - medical therapy vs. observation - referral for ongoing evaluation	UC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Utilizing supervising attending input, identify and review errors in management and self-reflect upon ways to eliminate errors.	HDR, PD, CP, CQI, FSO
Apply scientific evidence from the literature to one's own patients and distinguish evidence-based medicine from opinion.	HDR, FL, RL
Shadow with an ECU Nephrology faculty during as many of the faculty PD clinics as possible while the 1st year fellow is on the outpatient rotation.	PD
The fellow should initiate work on his/her ongoing Performance Improvement Project (PIP) during this rotation.	

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Learn how to provide ongoing education and feedback to the dialysis patients regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	HDR, CP

Communicate effectively with physician colleagues, outpatient PA, nursing and other staff to assure timely, comprehensive patient care.	HDR, CP, CQI, FSO, UC, PD
Prior to the beginning of the month, obtain sign-out from your senior fellow partner regarding ongoing issues. Likewise, provide updated information back to your fellow partner at the end of the month.	FSO
Senior fellows will serve as a resource for junior fellows, providing them with appropriate advice regarding the management of hemodialysis patients	FSO

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Provide care to the dialysis patient population with the highest ethical standards in mind and approach patients and families with the utmost respect and compassion.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Attend and participate in the monthly care plan meetings for the fellow's hemodialysis shift.	CP
Gain understanding of the role of the medical director in the management of a dialysis center by: - Attending monthly Continuous Quality Improvement (CQI) meetings	CQI
Through daily interactions, develop understanding of how nephrologists coordinate care with general internal medicine, cardiology, radiology, and infectious disease.	HDR, UC, PD
Become familiar with ways to report dialysis data (medical evidence forms, death forms) to ESRD networks and CMS when required	HDR, CP, CQI

Recommended Resources:

TEXTBOOK: Clinical Nephrology — Brenner and Rector
Burton Rose "Acid – Base" — Daugirdas dialysis handbook
Nissenson and Fine Dialysis Handbook — Kaplan's HTN book

www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate
MDConsult via Vidant Medical Center homepage
www.hdcn.org (logon/password = ecukidney/library)
http://www.kidney.org/professionals/kdoqi/guidelines.cfm
http://ispd.org/lang-en/treatmentguidelines/guidelines
ECU Nephrology Orientation presentation
AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods:

Fellows are formally evaluated by the ECU Outpatient Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 6/21/07; 5/7/10 *Revised 3/15/11*

Outpatient Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Fellows will complete two months on the outpatient nephrology rotation in the 1st year and three months in the second year. Fellows will work closely with the Outpatient Attending who is assigned to the rotation. This will occur at the ECU Nephrology and Hypertension office site.

Principle Teaching/Learning Activities:

- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient shift and once during the month with the hemodialysis shift teaching attending.
- **(CP) Care Plan:** Fellows and their supervising dialysis attending will attend and participate in the monthly care plan meeting for the fellow's shift.
- **(CQI) Continuous Quality Improvement Meeting:** Fellows will attend the monthly CQI meeting with Dr. Christiano.
- **(FSO) Fellow Sign-Out:** Fellow sign-out will occur at the end of each month to communicate with the junior fellow partner about ongoing issues involving their shared hemodialysis shift and acute transplant patients.
- **(FL) Fellow Lectures:** Series of core curriculum lectures pertaining to dialysis topics.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Also may refer to "ECU Dialysis Notebook" that was provided at the beginning of the Dialysis rotation.
- **(PD) PD Clinic:** Fellows and their supervising attending nephrologist will see peritoneal dialysis patients with urgent problems in the PD clinic at ECU Nephrology office. 2nd year fellows are welcome to shadow attendings in their PD clinics.
- **(UC) Urgent Clinic:** Fellows and their supervising attending nephrologist will see urgent pre-dialysis and transplant patients in the ECU Nephrology clinic.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Outpatient Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Round and document the patient's progress in the dialysis medical record at least twice monthly.	HDR
Evaluate patients on hemodialysis to include: writing of hemodialysis orders, assessment of hemodialysis and ultrafiltration adequacy, management of intradialytic complications such as hypotension, disequilibrium syndrome and seizures.	HDR, FL, RL
Evaluate and manage the medical complications of dialysis patients including cardiovascular disease, hypertension, peripheral vascular disease, disorders of mineral metabolism, fluid/electrolyte balance and acid/base disturbances.	HDR, CP, FL, RL
Evaluate and manage complications related to vascular access including line sepsis and access thrombosis.	HDR, CP, FL, RL
Evaluate pre-dialysis and transplant patients requiring urgent attention with attending outpatient nephrologist.	UC

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Appropriately evaluate and select patients for hemodialysis and peritoneal dialysis.	FL, RL
Assess hemodialysis adequacy and adjust hemodialysis prescription as needed.	HDR, CP, FL, RL
Assess peritoneal dialysis adequacy, PET testing and adjust peritoneal dialysis prescription as needed.	CP, PD, FL, RL
Develop expertise in the management of disorders of mineral metabolism including secondary hyperparathyroidism and renal osteodystrophy	HDR, CP, FL, RL
Utilize the K/DOQI guidelines and protocols for management of anemia	HDR, CP, FL, RL
Understand the managment of nutritional issues in dialysis patients.	HDR, CP, FL, RL
Recognize and treat the complications of hemodialysis including vascular access thrombosis and infection, intradialytic hypotension, seizures, cardiac arrest, drug reactions, hemolytic reactions, technical disasters	HDR, CP, FL, RL
Recognize and treat the infectious and noninfectious complications of peritoneal dialysis.	CP, PD, FL, RL
Manage and monitor drug metabolism in end-stage renal disease.	HDR, PD, FL, RL
Evaluate pre-dialysis and transplant patients with acute problems to determine the need for: - inpatient vs. outpatient management - medical therapy vs. observation - referral for ongoing evaluation	UC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify and review errors in management and self-reflect upon ways to eliminate errors.	HDR, PD, CP, CQI, FSO
Apply scientific evidence from the literature to one's own patients and distinguish evidence-based medicine from opinion.	HDR, FL, RL
2nd year fellows may continue to shadow with an ECU Nephrology faculty during faculty PD clinics while the fellow is on the outpatient rotation.	PD
The fellow should continue work on his/her ongoing Performance Improvement Project (PIP) during this rotation.	

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Provide ongoing education and feedback to the dialysis patients regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	HDR, CP

Communicate effectively with physician colleagues, outpatient PA, nursing and other staff to assure timely, comprehensive patient care.	HDR, CP, CQI, FSO, UC, PD
Prior to the beginning of the month, obtain sign-out from your junior fellow partner regarding ongoing issues. Likewise, provide updated information back to your fellow partner at the end of the month.	FSO
Senior fellows will serve as a resource for junior fellows, providing them with appropriate advice regarding the management of hemodialysis patients	FSO

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Provide care to the dialysis patient population with the highest ethical standards in mind and approach patients and families with the utmost respect and compassion.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Attend and participate in the monthly care plan meetings for the fellow's hemodialysis shift.	CP
Understand the role of the medical director in the management of a dialysis center by: - Attending monthly Continuous Quality Improvement (CQI) meetings	CQI
Through daily interactions, develop understanding of how nephrologists coordinate care with general internal medicine, cardiology, radiology, and infectious disease.	HDR, UC, PD
Report dialysis data (medical evidence forms, death forms) to ESRD networks and CMS when required	HDR, CP, CQI

Recommended Resources:

TEXTBOOK: Clinical Nephrology — Brenner and Rector
Burton Rose "Acid – Base" — Daugirdas dialysis handbook
Nissenson and Fine Dialysis Handbook — Kaplan's HTN book

www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate
MDConsult via Vidant Medical Center homepage
www.hdcn.org (logon/password = ecukidney/library)
http://www.kidney.org/professionals/kdoqi/guidelines.cfm
http://ispd.org/lang-en/treatmentguidelines/guidelines
ECU Nephrology Orientation presentation
AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods:

Fellows are formally evaluated by the ECU Outpatient Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Revised 3/15/11

Approved by Governing Body 6/21/07; 5/7/10

Transplant Rotation (1st year)

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Each fellow will participate in an intensive transplant rotation for one month in the 1st year and one month in the 2nd year of training. The fellow will become experienced in the management of transplant patients in both inpatient and outpatient settings. The fellow will be supervised in the management of preoperative evaluation, perioperative care and acute and chronic post-transplant management.

Principle Teaching/Learning Activities:

- **(ATC) Acute Transplant Clinic:** Fellows will attend acute transplant clinic in the Moye Medical II Building. They will be involved in the management of immunosuppression and medical management of their continuity transplant patients.
- **(CTC) Chronic Transplant Clinic:** Fellows will attend chronic transplant clinic at ECU Nephrology. They will see 2-5 patients each Tuesday morning half-day clinic and be supervised directly by a transplant attending.
- **(TRE) Transplant Recipient Evaluation:** Fellows will perform all inpatient and outpatient transplant recipient evaluations during this rotation. They will be supervised by the consult attending for inpatient evaluations and by the office or transplant attending for outpatient evaluations. In addition, fellows will attend at least one family conference and social worker evaluation at the ECU Transplant Clinic in Moye Medical II.
- **(ITR) Inpatient Transplant Rounds:** Fellows will coordinate daily follow-up of transplant patients on the transplant surgery service as needed by him/herself and this daily care will be directly supervised by the consult attending.
- **(TDE) Transplant Donor Evaluation:** Fellows will attend outpatient transplant donor evaluations at Moye Medical II during this rotation. They will be directly supervised by an ECU Nephrology Transplant attending or an Eastern Nephrology attending who is experienced in donor evaluation.
- **(HLA) HLA lab:** Fellows will spend 1-2 hours with Lorita Rebellato, PhD reviewing HLA methodology and techniques.
- **(L) Lectures:** Fellows will attend 6 core transplant lectures during the month.
- **(TM) Transplant Meetings:** Fellows will attend the monthly transplant business meeting, recipient selection committee meeting, and donor selection committee meeting.
- **(TS) Transplant Surgeries:** Each fellow will attend as many scheduled living donor transplant surgeries as possible. The fellows will complete training in proper sterile technique so they can scrub in on transplant surgeries. Each fellow is responsible for participating in one deceased donor transplant surgery.
- **(AS) Access Surgeries:** Fellows will also utilize this month as an opportunity to scrub in on as many access surgeries as possible.
- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient hemodialysis shift and once during the month with the hemodialysis shift teaching attending.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Specifically refer to the "ECU Transplant Manual" provided at the beginning of the rotation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Transplant Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care

Principle Educational Goals	Learning Activity
Lear now to evaluate and select transplant candidates.	TRE, RL, TM
Learn how to conduct preoperative evaluation and preparation of transplant recipients and donors.	TRE, HLA, TM
Observe living and deceased donor transplant surgeries.	TS
With attending assistance, learn the immediate postoperative management of transplant recipients.	TS, ITR, ATC, TM
Become familiar with the administration immunosuppressive medications.	TS, ITR, ATC, CTC, TM, L
Become familiar with the medical management of transplant rejection in patients.	ITR, ATC, CTC, TM, L
Provide long-term management of transplant recipients in the ambulatory setting.	CTC
Observe vascular access surgeries utilized in the maintenance of chronic vascular access patency.	AS

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Become familiar with the basic principles of immunology.	L, HLA
Begin to understand the biology of transplant rejection.	L, HLA
Learn the indications and contraindications to renal transplantation.	TRE, L
Become familiar with the principles of transplant recipient evaluation and selection.	TRE, RL
Become familiar with the principles of transplant donor evaluation and selection (both deceased donor and living donor).	TDE, RL
Become aware of the principles of organ harvesting, preservation, and sharing.	L
Describe the pathogenesis and management of acute renal failure in the transplant setting.	ATC, ITR, CTC, L, RL
Become familiar with the infectious complications of transplantation.	ATC, ITR, CTC, L, RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Become familiar with the peri-transplant process.	TRE, ITR, ATC, CTC
Using your transplant notebook as a reference, review current guidelines pertaining to the care of the transplant recipient.	ATC, RL
Review your outpatient hemodialysis shift to ensure that appropriate referral for transplantation has occurred.	HDR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Participate in discussions with patients and their families as they are educated about transplantation.	TRE
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	TRE, ITR, ATC, TM
Communicate effectively with fellow colleagues when signing out patients or following post-transplant patients who would normally be seen by the consult fellow.	TRE, ITR, ATC
Communicate effectively with the consult attending while managing patients hospitalized on the transplant service.	ITR, ATC

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Professional conduct toward patients, families, colleagues, transplant coordinators and staff, floor nurses and staff and all other members of the health care team is expected.	All
Provide individualized care of both donors and recipients that provides the best possible care independent of the impact this may have on the patient's respective donor or recipient.	TDE, TRE

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Develop understanding of the multidisciplinary resources necessary to provide optimal care to the transplant patient: transplant surgeon, transplant nursing coordinator, transplant administrative staff, transplant social worker, pharmacist, inpatient nursing staff, referring nephrologist.	TRE, TDE, ITR, ATC, CTC, TM, TS
Collaborate with other members of the transplant team to insure comprehensive care for patients who are undergoing or have received a kidney transplant.	TRE, TDE, ITR, ATC, CTC, TM, TS

Recommended Resources:

- The fellow will be given a packet of **reading material** that includes articles/handouts on: immunology, immunosuppression, donor evaluation, recipient evaluation, preoperative cardiac clearance and guidelines on the longterm management of renal transplant recipients.
- Other useful internet resources include:

http://www.unos.org/
http://www.ustransplant.org/index.php
http://www.optn.org
http://www.a-s-t.org/
http://www.transplantation-soc.org/

Evaluation Methods:

Fellows are formally evaluated by the ECU Transplant Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Transplant Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Each fellow will participate in an intensive transplant rotation for one month in the 1st year and one month in the 2nd year of training. The fellow will become experienced in the management of transplant patients in both inpatient and outpatient settings. The fellow will be supervised in the management of preoperative evaluation, perioperative care and acute and chronic post-transplant management.

Principle Teaching/Learning Activities:

- **(ATC) Acute Transplant Clinic:** Fellows will attend acute transplant clinic in the Moye Medical II Building. They will be involved in the management of immunosuppression and medical management of their continuity transplant patients.
- **(CTC) Chronic Transplant Clinic:** Fellows will attend chronic transplant clinic at ECU Nephrology. They will see 2-5 patients each Tuesday morning half-day clinic and be supervised directly by a transplant attending.
- **(TRE) Transplant Recipient Evaluation:** Fellows will perform all inpatient and outpatient transplant recipient evaluations during this rotation. They will be supervised by the consult attending for inpatient evaluations and by the office attending for outpatient evaluations. In addition, fellows will attend at least one family conference and social worker evaluation at the ECU Transplant Clinic in Moye Medical II.
- **(ITR) Inpatient Transplant Rounds:** Fellows will coordinate daily follow-up of transplant patients on the transplant surgery service as needed by him/herself and this daily care will be directly supervised by the consult attending.
- **(TDE) Transplant Donor Evaluation:** Fellows will attend outpatient transplant donor evaluations at the Eastern Nephrology office during this rotation. They will be directly supervised by an Eastern Nephrology attending who is experienced in donor evaluation.
- **(HLA) HLA lab:** Fellows will spend 1-2 hours with Lorita Rebellato, PhD reviewing HLA methodology and techniques.
- **(L) Lectures:** Fellows will attend 6 core transplant lectures during the month.
- **(TM) Transplant Meetings:** Fellows will attend the monthly transplant business meeting, recipient selection committee meeting, and donor selection committee meeting.
- **(TS) Transplant Surgeries:** Each fellow will attend as many scheduled living donor transplant surgeries as possible. The fellows will complete training in proper sterile technique so they can scrub in on transplant surgeries. Each fellow is responsible for participating in one deceased donor transplant surgery.
- **(AS) Access Surgeries:** Fellows will also utilize this month as an opportunity to scrub in on as many access surgeries as possible.
- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient hemodialysis shift and once during the month with the hemodialysis shift teaching attending.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Specifically refer to the "ECU Transplant Manual" provided at the beginning of the rotation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Transplant Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care

Principle Educational Goals	Learning Activity
Evaluate and select transplant candidates.	TRE, RL, TM
Conduct preoperative evaluation and preparation of transplant recipients and donors.	TRE, HLA, TM
Observe living and deceased donor transplant surgeries.	TS
Perform immediate postoperative management of transplant recipients.	TS, ITR, ATC, TM
Administer immunosuppressive medications.	TS, ITR, ATC, CTC, TM, L
Medically manage transplant rejection in patients.	ITR, ATC, CTC, TM, L
Provide long-term management of transplant recipients in the ambulatory setting.	CTC
Participate in vascular access surgeries utilized in the maintenance of chronic vascular access patency.	AS

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Describe the basic principles of immunology.	L, HLA
Explain the biology of transplant rejection.	L, HLA
Describe the indications and contraindications to renal transplantation.	TRE, L
Demonstrate understanding of the principles of transplant recipient evaluation and selection.	TRE, RL
Demonstrate understanding of the principles of transplant donor evaluation and selection (both deceased donor and living donor).	TDE, RL
Demonstrate understanding of the principles of organ harvesting, preservation, and sharing.	L
Know the pathogenesis and management of acute renal failure in the transplant setting.	ATC, ITR, CTC, L, RL
Recognize and manage the infectious complications of transplantation.	ATC, ITR, CTC, L, RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Become familiar with the peri-transplant process and develop understanding of where common pitfalls in continuity of care occur.	TRE, ITR, ATC, CTC
Develop understanding about ways to optimize co-management of acute and chronic transplant patients between the medical and surgical teams.	TRE, ITR, ATC
Analyze the way post-transplant care is provided and adjust your plan of care based on guidelines and recommendations.	ATC, RL

Review your outpatient hemodialysis shift to ensure that appropriate referral for transplantation has occurred.	HDR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Participate in discussions with patients and their families as they are educated about transplantation.	TRE
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	TRE, ITR, ATC, TM
Communicate effectively with fellow colleagues when signing out patients or following post-transplant patients who would normally be seen by the consult fellow.	TRE, ITR, ATC
Communicate effectively with the consult attending while managing patients hospitalized on the transplant service.	ITR, ATC

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients, families, colleagues, transplant coordinators and staff, floor nurses and staff and all other members of the health care team.	All
Provide individualized care of both donors and recipients that provides the best possible care independent of the impact this may have on the patient's respective donor or recipient.	TDE, TRE

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Develop understanding and utilize the multidisciplinary resources necessary to provide optimal care to the transplant patient: transplant surgeon, transplant nursing coordinator, transplant administrative staff, transplant social worker, pharmacist, inpatient nursing staff, referring nephrologist.	TRE, TDE, ITR, ATC, CTC, TM, TS
Collaborate with other members of the transplant team to insure comprehensive care for patients who are undergoing or have received a kidney transplant.	TRE, TDE, ITR, ATC, CTC, TM, TS

Recommended Resources:

- The fellow will be given a packet of **reading material** that includes articles/handouts on: immunology, immunosuppression, donor evaluation, recipient evaluation, preoperative cardiac clearance and guidelines on the longterm management of renal transplant recipients.
- Other useful internet resources include:
  - http://www.unos.org/
  - http://www.ustransplant.org/index.php
  - http://www.optn.org
  - http://www.a-s-t.org/
  - http://www.transplantation-soc.org/

Evaluation Methods:

Fellows are formally evaluated by the ECU Transplant Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10 *Revised 03/15/11*

Research Rotation (1st year)

Length of Rotation: 4 weeks
Type of Rotation: elective

Overview:

Each fellow participates in research during his or her training. The goals of this research experience are two-fold: 1) to expose fellows to a research experience that may reinforce a desire to pursue an academic career; and 2) to complement the 18 months of clinical training by providing basic and clinical science knowledge not readily obtained in the clinical setting. Fellows spend one month in the first year and 2 months in the second year on this rotation.

Principle Teaching/Learning Activities:

- **(IRB) Institutional Review Board learning modules:** This learning module is required during the 1st year of fellowship and is available at http://www.ecu.edu/irb/education.html
- **(HIPAA) Health Insurance Portability and Accountability Act learning modules:** This learning module is required during the 1st year of fellowship and is available at http://www.ecu.edu/cs-dhs/hipaa/privacy/training.cfm
- **(FM) Faculty Mentor:** A faculty mentor will directly supervise and guide the fellow's progress during the research rotation and research project(s).
- **(IRC) Institutional Research Conference:** provided by the ECU Internal Medicine and Family Medicine departments and VMC throughout the year. This is an opportunity for 1st year fellows to learn basics of research methodology and share ideas and study design with other subspecialty fellow colleagues.
- **(DRC) Divisional Research Conference:** ECU Nephrology monthly conference attended by both fellows and faculty. Opportunity for both fellows and faculty to present ideas, ongoing work or completed projects.
- **(FRP) Fellow Research Project:** Each fellow is expected to define a research project with their mentor, and in the 2nd year spend their 2 months progressing with this project. At minimum, each fellow is expected to complete 2 scholarly activity projects: 1) submit one abstract (poster or oral session) to a major Nephrology meeting, or have case report or review article submitted and accepted by completion of the 2 year fellowship, 2) a second scholarly work or project of any type approved by any of the key faculty. Likewise, accepted original research is also encouraged and will satisfy one of the scholarly activity requirements. This process should be initiated in the 1st year of training.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Research Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Not applicable	

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Describe the relationship between their research project and human disease.	IRB, FM, IRC, DRC, FRP

Describe the risks and benefits of participating as a subject in a clinical research study	IRB, HIPPA, FM, IRC, DRC
Demonstrate understanding of the pathophysiology of the disease which they are studying (clinical research)	FM, DRC, FRP
Explain the use of informed consent	IRB, HIPPA, FM, IRC, DRC
Apply statistics and data analysis to research and interpret results.	FM, IRC, DRC, FRP

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Critically evaluate the scientific literature	FM, IRC, DRC, FRP
Appropriately respond to questions and critical critiques about the research project.	FM, IRC, DRC
Apply the results of previous studies in the literature to study design and interpretation.	FM, IRC, DRC, FRP

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Work effectively with other members of the laboratory	FM, DRC, FRP
Communicate results with mentors	FM, IRC, DRC, FRP
Collaborate with other researchers	FM, IRC, DRC
Communicate effectively with subjects regarding informed consent	FRP
Maintain records that are legible and accurate	IRB, HIPPA, RM, DRC, FRP

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Demonstrate scientific integrity	IRB, HIPPA, FM, IRC, DRC
Adhere to principles of informed consent	IRB, HIPPA, FM, IRC, DRC
Demonstrate understanding of the ethics of research	IRB, HIPPA, FM, IRC, DRC

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**

Describe the mechanisms by which research is funded by the government and private sources	IRB, FM, IRC, DRC
Describe the role of peer review in publication of articles in academic journals	FM, IRC, DRC
Describe the role of the IRB in approving research protocols	IRB, FM, IRC, DRC, FRP

Recommended Resources:

To Test A Test
Designing Clinical Research: An Epidemiologic Approach by Stephen B. Hully

Evaluation Methods:

Fellows work closely with their mentors and are evaluated and guided during research meetings and presentations. Formal written evaluations are completed utilizing the ABIM competency-based evaluation form to evaluate Research Perfomance. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Revised 03/15/11

Research Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: elective

Overview:

Each fellow participates in research during his or her training. The goals of this research experience are two-fold: 1) to expose fellows to a research experience that may reinforce a desire to pursue an academic career; and 2) to complement the 18 months of clinical training by providing basic and clinical science knowledge not readily obtained in the clinical setting. Fellows spend one month in the first year and 2 months in the second year on this rotation.

Principle Teaching/Learning Activities:

- **(FM) Faculty Mentor:** A faculty mentor will directly supervise and guide the fellow's progress during the research rotation and research project(s).
- **(DRC) Divisional Research Conference:** ECU Nephrology monthly conference attended by both fellows and faculty. Opportunity for both fellows and faculty to present ideas, ongoing work or completed projects.
- **(FRP) Fellow Research Project:** Each fellow is expected to define a research project with their mentor, and in the 2nd year spend their 2 months progressing with this project. At minimum, each fellow is expected to complete 2 scholarly activity projects: 1) submit one abstract (poster or oral session) to a major Nephrology meeting, or have case report or review article submitted and accepted by completion of the 2 year fellowship, 2) a second scholarly work or project of any type approved by any of the key faculty. Likewise, accepted original research is also encouraged and will satisfy one of the scholarly activity requirements. This process should be further developed, submitted and accepted by the end of the 2nd year of training. This is a requirement of graduation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Research Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Not applicable	

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Describe the relationship between their research project and human disease.	FM, DRC
Describe the risks and benefits of participating as a subject in a clinical research study	FM, DRC, FRP
Demonstrate understanding of the pathophysiology of the disease which they are studying (clinical research)	FM, DRC, FRP
Explain the use of informed consent	FM, DRC, FRP
Apply statistics and data analysis to research and interpret results.	FM, DRC, FRP

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Critically evaluate the scientific literature	FM, DRC, FRP
Appropriately respond to questions and critical critiques about the research project.	FM, DRC, FRP
Apply the results of previous studies in the literature to study design and interpretation.	FM, DRC, FRP

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Work effectively with other members of the laboratory	FM, DRC, FRP
Communicate results with mentors	FM, DRC, FRP
Collaborate with other researchers	FM, DRC
Communicate effectively with subjects regarding informed consent	FRP
Maintain records that are legible and accurate	RM, DRC, FRP

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Demonstrate scientific integrity	FM, DRC, FRP
Adhere to principles of informed consent	FM, DRC, FRP
Demonstrate understanding of the ethics of research	FM, DRC, FRP

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Describe the mechanisms by which research is funded by the government and private sources	FM, DRC
Describe the role of peer review in publication of articles in academic journals	FM, DRC
Describe the role of the IRB in approving research protocols	FM, DRC, FRP

Recommended Resources:

To Test A Test
Designing Clinical Research: An Epidemiologic Approach by Stephen B. Hully

Evaluation Methods:

Fellows work closely with their mentors and are evaluated and guided during research meetings and presentations. Formal written evaluations are completed utilizing the ABIM competency-based evaluation form to evaluate Research Perfomance. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 7/9/07; 5/7/10

Revised 03/15/11

Independent Study Rotation (2nd year)

Length of Rotation: 4 weeks
Type of Rotation: mandatory

Overview:

Each fellow completes one month of independent study during the 2nd year of training. The topic of study is based on an area of weakness identified in the previous year's in-service examination score or an area where the fellow would like to improve his/her medical knowledge. The potential topics for study are taken directly from the ABIM Nephrology blueprint http://www.abim.org/pdf/blueprint/neph_cert.pdf. The fellows will spend one month in their second year on this rotation. A comprehensive reading list will be developed for the fellow, though they may append this as they move through their study. At the end of the month, a post-test is administered for comparison to the in-service examination questions in the particular area. Finally, fellows will develop goals and objectives for their particular independent study based on key learning objectives they would recommend to future fellows.

Principle Teaching/Learning Activities:

- **(FM) Faculty Mentor:** A faculty mentor will prepare the fellow's reading list and will be available for questions as they arise. The mentor will also assist with the development of the post-test.
- **(IRT) Independent Reading Time** Each fellow will pursue self-paced reading and study in their chosen area based on major topics outlined by the ABIM Nephrology blueprint.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Research Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Not applicable	

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Accomplish reading from a broad range of resources (text chapters, peer-reviewed articles, uptodate, online resources) focusing on the chosen area of study	IRT
Identify specific areas of suboptimal medical knowledge in this topic and read/review resources that fill this gap.	IRT
Demonstrate substantial improvement on self-reflected knowledge base and/or scores on the post-test examination.	IRT
Strive to understand chosen material of study to a degree that the fellow then may be able to teach his/her fellow colleagues, residents, interns and students.	IRT

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Utilize the material learned to take back and improve the care of the fellows patients in clinical settings.	IRT

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Work effectively with faculty mentor, program director and other supervisory faculty during this study month.	FM
Communicate questions or areas requiring further discussion with mentor or program director.	FM, IRT
Develop learning objectives that they would recommend to future fellows at the end of the learning experience.	FM, IRT

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Maintain focused study and use time wisely during this rotation.	IRT

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Not applicable	

Recommended Resources:
A specific, individually-developed reading list will be provided to the fellow at the beginning of the rotation.

Evaluation Methods:
Fellows are evaluated by their faculty mentors and/or the program director. Formal written evaluations are completed utilizing the ABIM competency-based evaluation form. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 11/1/07; 5/7/10

Revised 03/15/11

Interventional Nephrology Rotation

Length of Rotation: 4 weeks
Type of Rotation: elective

Overview:

Fellows may rotate with Eastern Nephrology Associates (ENA) in order to gain procedural experience and expertise in Interventional Nephrology. Fellows may participate by observing only or by progressing to become the primary operator. This will occur under the direct supervision of an Interventional Nephrologist at the Eastern Nephrology office.

Principle Teaching/Learning Activities:

- **(O) Observation:** The fellow will observe Eastern Nephrology Interventional physicians performing a variety of angiographic procedures on hemodialysis vascular access.
- **(PO) Primary Operator:** Under direct supervision, the fellow will perform a variety of angiographic procedures including angiography, angioplasty and thrombectomy of arteriovenous fistulae and grafts; placement of tunneled and non-tunneled hemodialysis catheters.
- **(L) Lectures:** A series of didactic lectures provided by the Eastern Nephrology staff.
- **(RL) Reading List:** Reading list as outlined by Eastern Nephrology.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Interventional Nephrology Elective are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Perform pre-op exam, with focus on sedation and contrast risk factors, access examination, history and interpretation of access monitoring data. Anticipate radiographic findings.	O, PO, L, RL
Develop proficiency with equipment utilized for evaluation and intervention of vascular access.	O, PO, L, RL
Perform post-op examination to assess for hemostasis and hemodynamic changes.	O, PO
Successfully complete required number of procedures if ASDIN certification is desired.	PO

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Demonstrate understanding of anatomy as it pertains to hemodialysis vascular access.	O, PO, L, RL
Become proficient in the physical exam of vascular access.	O, PO, L, RL
Become proficient in procedural sedation.	O, PO, L, RL
Describe imaging techniques including radiation safety.	O, PO, L, RL
Explain the basics of interventional laboratory, tools and procedures.	O, PO, L, RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Perform mock interventional procedures on interventional "dummy" with supervision and instruction.	O, PO

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Develop vascular access communication skills by discussing follow up care with referring nurses, nephrologists and access surgeons.	PO
Develop understanding of vascular access terminology by writing procedure notes.	PO

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients, families, colleagues, interventional nephrology staff, referring nephrologists, access surgeons all other members of the health care team.	ALL

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Develop understanding and utilize the multidisciplinary resources necessary to provide optimal care to the hemodialysis patient undergoing vascular access evaluation and intervention.	O, PO, L
Participate in CQI and procedure outcomes analysis.	O, PO

Recommended Resources:

Eastern Nephrology Associates and ASDIN reading list (see attached)
TEXTBOOK: Clinical Nephrology
Brenner and Rector
www.uptodate.com (free via Vidant Medical Center homepage)
www.hdcn.org (logon/password = ecukidney/library)
www.asdin.org

Evaluation Methods:

Fellows are formally evaluated by Dr. Parker or Dr. Reed using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 6/21/07; 5/7/10

Revised 03/15/11

Urology Rotation

Length of Rotation: 2 weeks
Type of Rotation: elective

Overview:

Fellows may rotate with Urology for 2 weeks during their fellowship. This will be primarily in the outpatient setting, but may also include inpatient evaluations and observation of surgical procedures.

Principle Teaching/Learning Activities:

- **(UC) Urology Clinic:** The fellow will see patients with the attending urologist in the outpatient clinic. They will observe the urology attending, but not provide independent care to the Urology patients.
- **(UP) Urology Procedures:** The fellow will observe the urologist performing procedures that include cystoscopy, prostate biopsy, and lithotripsy.
- **(DT) Diagnostic tests**: Urinalysis, plain films, renal ultrasound, CAT scans, and other diagnostic tests are reviewed with the Urology Attending
- **(RL) Reading List:** Reading list as outlined at the bottom of this page.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Urology Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Observe/shadow the urologist providing outpatient care of the following: - Nephrolithiasis - Malignancies of the kidney, urinary tract and prostate - Cystic diseases of the kidney such as medullary sponge or medullary cystic disease - Disorders of the prostate including benign prostatic hypertrophy - Obstructive uropathy - Erectile dysfunction	UC, DT
Observe cystoscopies	UP
Observe prostate biopsies	UP
Observe lithotripsy	UP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Explain the natural history, pathophysiology, diagnosis and treatment of the following: - Nephrolithiasis - Malignancies of the kidney, urinary tract and prostate - Cystic diseases of the kidney such as medullary sponge or medullary cystic disease - Disorders of the prostate including benign prostatic hypertrophy - Obstructive uropathy - Erectile dysfunction	UC, UP, DT, RL

Understand the indications for and interpretations of radiologic tests of the kidney and urinary tract.	UC, UP, DT, RL
Understand the indications for lithotripsy.	UC, UP, DT, RL
Understand the indications for cystoscopy.	UC, UP, DT, RL
Become proficient in geriatric aspects of nephrology including disorders of the aging kidney and urinary tract.	UC, UP, DT, RL
Become familiar with the urologist's approach to kidney transplant donor evaluation and follow-up.	UC, UP, DT, RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Integrate management strategy learned on this rotation into your own practice in the areas of nephrolithiasis, obstructive uropathy, cystic diseases of the kidney and malignancy.	UC, UP, DT

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Communicate effectively with the urology attendings and other physician colleagues, nursing and other staff to assure timely, comprehensive care.	UC, UP

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients, families, urology attendings and urology nurses and staff.	UC, UP

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Utilize this experience to improve communication and patient care in those situations requiring comanagement by nephrology and urology.	UC, UP, DT

Recommended Resources:

www.uptodate.com
http://www.urologychannel.com/
http://catalog.niddk.nih.gov/materials.cfm?CH=NKUDIC
http://content.nejm.org/cgi/content/short/346/2/74
http://www.easternurological.com/

Evaluation Methods

Fellows are formally evaluated by the Eastern Urological Assoicates attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Approved by Governing Body 6/21/07; 5/7/10 *Revised 3/15/11*

Pediatric Nephrology Rotation

Length of Rotation: 2-4 weeks
Type of Rotation: elective

Overview:

ECU Nephrology Fellows may choose to rotate with pediatric nephrology for 2-4 weeks during an elective month. Fellows will work closely with the ECU Pediatric Nephrology Attending(s) and any housestaff or students who are assigned to the rotation.

Principle Teaching/Learning Activities:

- **(IC) Initial Consultation:** Fellows may participate in initial pediatric nephrology hospital consults and will learn how to develop the initial plan of management.
- **(DPC) Daily Patient Care:** The fellow may participate in daily follow-up of hospitalized patients
- **(AR) Attending Rounds:** Hospital teaching and Management rounds with the ECU Pediatric Nephrology Attending
- **(PSC) Pediatric Specialty Clinic:** The fellow will participate in pediatric nephrology clinics including peritoneal dialysis and transplant clinic if applicable.
- **(DT) Diagnostic tests**: Urinalysis, 24 hour urine studies, renal ultrasound, CAT scans, and other diagnostic tests are reviewed with the ECU Pediatric Attending in the hospital, clinic and office settings.
- **(HDR) Hemodialysis Rounds:** Fellows may round on patients undergoing hemodialysis in the inpatient or outpatient dialysis unit or "off-unit" dialysis for critically ill children.
- **(PNC) Pediatric Nephrology Conferences:** Fellow will participate in any ECU Pediatric Nephrology Conferences in the hospital, clinic and office settings. The fellow will present a brief review on a topic of his/her choice weekly during this rotation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Pediatric Nephrology Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Evaluate and manage pediatric patients with hypertension.	IC, DPC, AR, PSC, HDR
Evaluate and manage pediatric patients with chronic kidney disease.	IC, DPC, AR, PSC, HDR
Evaluate and manage pediatric patients with acute kidney injury.	IC, DPC, AR
Evaluate and manage pediatric patients with proteinuria.	IC, DPC, AR, PSC, DT
Evaluate and manage pediatric patients with disorders of the urinary tract including UTI, urethritis, obstructive uropathy, and vesicoureteral reflux.	IC, DPC, AR, PSC, DT
Evaluate and manage pediatric patients with cystic diseases, dysplasia or renal masses.	IC, DPC, AR, PSC, DT
Evaluate and manage pediatric patients with Glomerular (including HUS) or autoimmune diseases.	IC, DPC, AR, PSC, DT
Become knowledgeable about the care of patients with metabolic bone disorders of childhood.	IC, DPC, AR, PSC
Learn about hereditary kidney diseases seen in the pediatric population.	IC, DPC, AR, PSC

Be aware of systemic diseases seen in children which may put the child at risk for renal disease or complications: Diabetes mellitus, Sickle cell disease/trait, bacteremia/sepsis, shock and severe dehydration.	IC, DPC, AR, PSC, DT
Identify the indicatons for and applications of renal replacement therapy for children.	DPC, AR, HDR
Understand the basic principles of renal transplantation in children.	IC, DPC, AR, PSC
Become familiar with proper drug dosing in pediatric patients to avoid nephrotoxic agents and dose-adjust for kidney function as needed.	IC, DPC, AR, PSC, DT, HDR

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Expand clinically applicable knowledge base of the basic and clinical sciences underlying the care of pediatric patients with acute and chronic kidney diseases as defined above in the patient care section.	IC, DPC, AR, PSC, PNC
Access and critically evaluate current medical information and scientific evidence relevant to care of patients with renal failure.	IC, DPC, AR, PSC, PNC
The fellow will present a brief review of a pediatric nephrology topic of his/her choice weekly during this rotation.	PNC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Conduct effective searches of the literature.	IC, DPC, PSC
Read and demonstrate understanding of medical literature relevant to clinical situations.	IC, DPC, PSC
Identify, acknowledge and correct pertinent gaps in knowledge and skills in the care of pediatric patients kidney disorders.	DPC, PSC, C
Analyze rounding patterns and identify areas for improvement to optimize and balance quality care of acute and chronically ill kidney patients.	DPC, PSC, AR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Along with the pediatric nephrology attending, educate and update patients and their families as to the nature of the patient's kidney problem and concurrent illness.	IC, DPC, AR, PSC
Along with the pediatric nephrology attending, thoroughly explain to patients and their family necessary procedures and tests in terms that the patient can understand to allow for true informed consent as well as strengthening of patient-physician relationships.	IC, DPC, AR, PSC, HDR
Communicate effectively with physician colleagues, nursing and other staff to assure timely, comprehensive patient care.	IC, DPC, AR, PSC, HDR
Along with the pediatric nephrology attending, communicate effectively with dialysis social worker, outpatient physician extender, outpatient dialysis nurses and primary nephrologist when making discharge arrangements.	DPC, AR, HDR

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Professional conduct toward patients, families, colleagues, dialysis nurses and staff, floor nurses and staff and all other members of the health care team is expected.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Demonstrate understanding and utilize the multidisciplinary resources necessary to care optimally for patients with acute and chronic kidney disease: primary nephrologist, dialysis nurse, floor nurse, social worker, rehabilitation unit, outpatient physician extender, outpatient dialysis nurse, discharge planner, dietician, case manager	IC, DPC, AR, PSC, HDR
Collaborate with other members of the health care team to assure comprehensive care for patients with kidney disease.	IC, DPC, AR, PSC, HDR
Demonstrate understanding of the limitations and opportunities inherent in the care of patients on dialysis and develop strategies to optimize individual patient care.	DPC, AR, PSC, HDR

Recommended Resources:

TEXTBOOK: *Find out what the reference pediatric nephrology text is*
Brenner and Rector
www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate
Micromedex via Vidant Medical Center homepage
MDConsult via Vidant Medical Center homepage
www.hdcn.com (logon/password = ecukidney/library)
ARTICLES:

1. Debbie Gipson et al. Management of Childhood Onset Nephrotic Syndrome. *Pediatrics* 2009;124:747-57.
2. Dilys A Whyte, Richard N Fine. Acute Renal Failure in Children. *Pediatr Rev* 2008;29:299-307.
3. Dilys A Whyte, Richard N Fine. Chronic Kidney Disease in Children. *Pediatr Rev* 2008;29:335-341.
4. Leonard G Feld, Morris Schoeneman, Frederick Kaskel. Evaluation of the Child with Asymptomatic Proteinuria. *Pediatr Rev* 1984;5:248-254.
5. Becke N and Avner ED. Congenital Nephropathies and Uropathies. *Pediatric Clinics of North Americ*a 1995;42:1319-1341.

Evaluation Methods

Fellows are formally evaluated by the ECU Pediatric Nephrology Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

8/4/11

Outpatient ENA Elective Rotation

Length of Rotation: 1-4 weeks
Type of Rotation: elective

Overview:

Fellows may complete a 1-4 week elective with Eastern Nephrology Associates during either their 1st or 2nd year of fellowship. This elective rotation allows our fellows to rotate with a private practice nephrology group. It gives them exposure to a different practice and management style than what the fellows see in academic nephrology. They work in a shadowing fashion, and do not have primary responsibility for care of patients. They will see patients in the office setting, in the Pitt County outpatient dialysis unit, Pitt County peritoneal dialysis unit, and/or off-site outpatient dialysis units.

Principle Teaching/Learning Activities:

- **(OPC) Outpatient Clinic:** Fellows will participate in a shadowing fashion with 1 or more of the Eastern Nephrology attending or extenders at the Eastern Nephrology Associates Office.
- **(HDR) Hemodialysis Rounds:** Fellows will round in a shadowing fashion with 1 or more of the Eastern Nephrology attendings or extenders at the Pitt County dialysis unit or other off-site dialysis units.
- **(CP) Care Plan:** Fellows may attend care plan in a shadowing fashion.
- **(CQI) Continuous Quality Improvement Meeting:** Fellows may attend the monthly CQI meeting at Pitt County or other off-site dialysis units.
- **(PD) PD Clinic:** Fellows may round in a shadowing fashion with 1 or more of the Eastern Nephrology attendings or extenders at the Pitt County PD unit or other off-site PD units.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Outpatient Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Round with the Eastern Nephrology attending in a variety of clinical settings.	HDR, PD, OPC
Evaluate patients on hemodialysis to include: writing of hemodialysis orders, assessment of hemodialysis and ultrafiltration adequacy, management of intradialytic complications such as hypotension, disequilibrium syndrome and seizures.	HDR
Evaluate and manage the medical complications of dialysis patients including cardiovascular disease, hypertension, peripheral vascular disease, disorders of mineral metabolism, fluid/electrolyte balance and acid/base disturbances.	HDR
Evaluate and manage complications related to vascular access including line sepsis and access thrombosis.	HDR, CP

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Learn how to appropriately evaluate and select patients for in-center Hemodialysis, Home Hemodialysis, Nocturnal Hemodialysis and peritoneal dialysis.	OPC, PD, HDR

Learn how to assess hemodialysis adequacy and adjust hemodialysis prescription as needed.	HDR, CP, FL, RL
Learn how to assess peritoneal dialysis adequacy, PET testing and adjust peritoneal dialysis prescription as needed.	CP, PD
Become familiar with the various disorders of mineral metabolism including secondary hyperparathyroidism and renal osteodystrophy	HDR, CP, PD, OPC
Review the K/DOQI guidelines and protocols for management of anemia	HDR, CP, PD, OPC
Become familiar with the nutritional issues in the management of dialysis patients.	HDR, CP, PD
Become familiar with the complications of hemodialysis including vascular access thrombosis and infection, intradialytic hypotension, seizures, cardiac arrest, drug reactions, hemolytic reactions, technical disasters	HDR, CP
Learn the infectious and noninfectious complications of peritoneal dialysis.	CP, PD
Become aware for the need to manage and monitor drug metabolism in end-stage renal disease.	HDR, PD, OPC
Evaluate pre-dialysis and transplant patients with acute problems to determine the need for: - inpatient vs. outpatient management - medical therapy vs. observation - referral for ongoing evaluation	OPC

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Identify and review errors in management and self-reflect upon ways to eliminate errors.	HDR, PD, OPC, CQI
Apply scientific evidence from the literature to patients and distinguish evidence-based medicine from opinion.	HDR, PD, OPC

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Learn how to provide ongoing education and feedback to the dialysis patients regarding their clinical status. This may include topics such as end-of-life issues, resuscitation issues, and withdrawal of dialysis support.	HDR, PD, CP
Communicate effectively with physician colleagues, outpatient PA, nursing and other staff to assure timely, comprehensive patient care.	HDR, CP, CQI, OPC
Learn how private practice nephrologists communicate effectively with their referral base.	OPC

5) Professionalism	
Principle Educational Goals	**Learning Activity**

Provide care to the dialysis and pre-dialysis patient population with the highest ethical standards in mind and approach patients and families with the utmost respect and compassion.	All

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Attend and participate in the monthly care plan meetings for the fellow's hemodialysis shift.	CP
Gain understanding of the role of the medical director in the management of a dialysis center by: - Attending monthly Continuous Quality Improvement (CQI) meetings	CQI
Through daily interactions, develop understanding of how nephrologists coordinate care with general internal medicine, cardiology, radiology, and infectious disease.	HDR, PD, OPC
Become familiar with ways to report dialysis data (medical evidence forms, death forms) to ESRD networks and CMS when required	HDR, CP, CQI

Recommended Resources:

TEXTBOOK: Clinical Nephrology
Brenner and Rector
Burton Rose "Acid – Base"
Daugirdas dialysis handbook
Kaplan's HTN book

www.uptodate.com (free via Vidant Medical Center homepage)
LexiDrugs via uptodate

MDConsult via Vidant Medical Center homepage

www.hdcn.org (logon/password = ecukidney/library)

http://www.kidney.org/professionals/kdoqi/guidelines.cfm

http://ispd.org/lang-en/treatmentguidelines/guidelines

AJKD Core Curriculum Series (pdf articles have been emailed to each fellow)

Evaluation Methods:

Fellows are formally evaluated by the Eastern Nephrology Attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

8/27/10

Dialysis Medical Director Rotation

Length of Rotation: 4 weeks
Type of Rotation: elective

Overview:

Fellows may complete one month on the Dialysis Medical Director rotation in the 1st year. Fellows will work closely with Dr. Christiano, Medical Director of ECU Dialysis and Medical Director of Dare County Dialysis. This will occur at the ECU Nephrology and Hypertension office site.

Principle Teaching/Learning Activities:

- **(HDR) Hemodialysis Rounds:** Fellows will round independently once during the month on their outpatient hemodialysis shift and once during the month with the hemodialysis shift teaching attending. Fellows may also round with Dr. Christiano on her shift. Fellows may also travel with Dr. Christiano to Ayden Dialysis, Snow Hill Dialysis or Dare County Dialysis to learn about different types of units (size and ownership).
- **(OOO) One-On-One Time with Medical Director:** Fellows will be able to shadow Dr. Christiano in order to learn her daily duties as medical director. This may include a variety of situations depending on what issues arise during the month: water issues, state inspections, policy changes, administrative duties, etc.
- **(CP) Care Plan:** Fellows may attend care plan with Dr. Christiano as well as care plan for their own hemodialysis cohort.
- **(CQI) Continuous Quality Improvement Meeting:** Fellows will attend the monthly CQI meeting with Dr. Christiano.
- **(WT) Water Treatment Module:** This module designed by Dr. Christiano is to be completed during this rotation and includes tour of ECU Dialysis Water Treatment area, Water treatment lecture, fellow sketch of water treatment plan and awareness of AAMI standards through discussions, reading and lectures.
- **(RPA) RPA videoconferences:** The RPA has created an educational AV curriculum located here: http://www.renalmd.org/practice-curriculum/. Many of these conferences have information extremely relevant to being a medical director.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page. Specifically refer to "ECU Dialysis Notebook" provided at the beginning of the rotation.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Nephrology Dialysis Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Round and document the patient's progress in the dialysis medical record.	HDR
Examine vascular access if indicated.	HDR
Utilize hemodialysis access monitoring tools in the care of patients.	HDR

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**

Learn how to implement quality assessment and performance improvement programs.	OOO, RL, CQI
Learn how to be in compliance with medicare and state regulations.	OOO, RL, RPA, CQI
Gain experience in staff education, training and performance	OOO, RL, CQI
Become knowledgeable about policies and procedures for which the medical director is responsible	OOO, RL, RPA, CQI
Explain the importance of appropriate water treatment.	OOO, WT, HDR, CQI
Review and discuss articles related to AAMI standards and water-related emergencies	OOO, WT

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Analyze fellow (yourself) and attending rounding patterns and identify areas for improvement to optimize and balance quality care of acute and chronically ill kidney patients.	HDR

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Become familiar with standards which include providing proper education to dialysis staff.	CQI, OOO
Develop vascular access communication skills by discussing follow-up care with dialysis nurses and supervising nephrologists.	HDR, CP, CQI

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Provide care to the dialysis patient population and approach patients and families with the utmost respect and compassion.	HDR, CP, OOO
Provide support to the dialysis staff with the highest ethical standards in mind.	HDR, CP, CQI, OOO

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Gain understanding of the role of the medical director in the management of a dialysis center by: - Attending monthly Continuous Quality Improvement (CQI) meetings	CQI
Attend and participate in the monthly care plan meetings for the fellow's hemodialysis shift.	CP
Have option of raveling with Dr. Christiano to observe rounds and/or CQI meetings at the Ayden, Snow Hill or Dare County Dialysis Centers.	HDR, CQI, OOO

Recommended Resources:

ECU Dialysis Rotation Notebook
TEXTBOOK: Clinical Nephrology
Brenner and Rector
Daugirdas dialysis handbook
Nissenson and Fine dialysis notebook
www.uptodate.com (free via VMC homepage)
LexiDrugs via uptodate
MDConsult via VMC homepage
www.hdcn.org (logon/password = ecukidney/library)
http://www.kidney.org/professionals/kdoqi/guidelines.cfm
http://www.pdiconnect.com/content/30/4/393.full.pdf+html
AJKD Core Curriculum Series
\\Piratedrive\ecukidney\PORTFOLIOResources\CoreCurriculum\AJKDCoreCurriculum
RPA educational series http://www.renalmd.org/practice-curriculum/
http://www.therenalnetwork.org/MDpages/resources_implementation_MedicalDirectorResponsibilities.html
http://www.esrdnetwork6.org/utils/pdf/Disaster-Preparedness.pdf
http://ispd.org/NAC/wp-content/uploads/2010/11/Home-Unit-Medical-Director-Golper-April-2011.pdf
http://www.esrdnetwork6.org/

Evaluation Methods:

Fellows are formally evaluated by Dr. Christiano using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

Revised 2/1/12

Radiology Rotation

Length of Rotation: 2 weeks
Type of Rotation: elective

Overview:

Fellows may rotate with Radiology for 2 weeks during their fellowship. This will be primarily in the ultrasound area, but may also include other radiology areas as well based on the individual fellow's desired experiences. The purpose of this rotation is for the fellow to gain exposure to the reading of kidney ultrasounds and other renal imaging modalities. The fellow will not expect to be competent or proficient in reading ultrasounds independently.

Principle Teaching/Learning Activities:

- **(U) Review Ultrasounds:** The fellow will see review renal ultrasounds with the radiologist in a shadowing fashion.
- **(O) Other GU imaging modalities:** The fellow may choose to gain additional shadowing experience in other areas of renal imaging and/or tunneled dialysis catheter placement.
- **(RL) Reading List:** Reading list as outlined at the bottom of this page.

Principle Educational Goals by Relevant Competency

In the tables below, the principle educational goals for the Radiology Rotation are listed for each of the six ACGME competencies. The second column of the table indicates the most relevant principle teaching/learning activity for each goal, using the legend above.

1) Patient Care	
Principle Educational Goals	**Learning Activity**
Shadow the radiologist providing interpretation on renal ultrasounds: - Become familiar with renal and GU anatomy on ultrasound - Apply anatomy to improve fellow's biopsy technique - Be aware of appearance of common renal abnormalities seen on ultrasound: hydronephrosis, kidney stones, cystic kidney disease, bladder thickening and thinning/loss of renal cortex as seen in advanced chronic kidney disease.	U
Optional: shadow radiologist when reading CT scan abdomen/pelvis	O
Optional: shadow radiologist when reading MRI scan of kidney/renal arteries	O
Optional: review with nuclear radiologist the method by which renal scans are done including indications for the study, limitations, and methodology.	O
Optional: observe removal and insertion of tunneled dialysis catheters in VIR.	O

2) Medical Knowledge	
Principle Educational Goals	**Learning Activity**
Understand the indications for, utility of and diagnostic limitations of renal ultrasound	U
Understand the indications for, utility of and diagnostic limitations of CT scan of abdomen and pelvis and CTA as it pertains to the GU system	O

Understand the indications for, utility of and diagnostic limitations of renal MRI/MRA	O
Understand the indications for, utility of and diagnostic limitations of renal scans	O
Review the advantages and disadvantages of tunneled and non-tunneled dialysis catheters	RL
Review the complications of "heroic" tunneled dialysis catheters such as transhepatic and translumbar catheters	O, RL

3) Practice-Based Learning and Improvement	
Principle Educational Goals	**Learning Activity**
Integrate management strategy learned on this rotation into your own practice in the areas of nephrolithiasis, obstructive uropathy, cystic diseases of the kidney and malignancy.	U, O, RL

4) Interpersonal Skills and Communication	
Principle Educational Goals	**Learning Activity**
Communicate effectively with the radiology attendings and other physician colleagues, nursing and other staff to assure timely, comprehensive care.	U, O

5) Professionalism	
Principle Educational Goals	**Learning Activity**
Behave professionally toward patients and radiology attendings and staff.	U,O

6) Systems-Based Practice	
Principle Educational Goals	**Learning Activity**
Utilize this experience to improve communication and patient care in those situations requiring communication by nephrology and radiology.	U,O

Recommended Resources:

Ultrasound: The Requisites

Brant and Helms: Fundamentals of Diagnostic Radiology

(found in Radiology Dept or Health Sciences Library)

Evaluation Methods

Fellows are formally evaluated by the Eastern Radiology attending(s) using the standard competency-based ABIM evaluation form on New Innovations. This evaluation will be discussed with the fellow face-to-face at the end of the rotation.

OUTPATIENT EXPERIENCES:

1. Continuity Clinic

Fellows will maintain a continuity clinic one half day per week on Wednesday's for the duration of the two-year fellowship. Fellows will on average be responsible for four to eight patients per ½-day clinic. The continuity clinic will provide the fellow with the opportunity to gain experience in the outpatient management of a wide variety of renal diseases. Fellows will have the opportunity of observing the natural history of many diseases over this two-year period. Specifically, the fellow should expect to gain significant clinical experience in the outpatient management of:

Hypertension (both primary and secondary)
Diabetic nephropathy
Chronic kidney disease and its complications
Renal disorders of pregnancy
Urinary tract infections
Tubulointerstitial renal diseases including artheroembolic disease
Disorders of mineral metabolism including nephrolithiasis, hypercalcemia, and magnesium disorders
Disorders of water, sodium and potassium
Evaluation of hematuria and proteinuria

Fellows will have a unique opportunity to impact on patient outcomes with patient education directed at cessation of smoking, salt restricted diets, adequate glycemic control in diabetes, good control of blood pressure and life style modification.

Fellows will follow at least 25% of patients from each gender. The continuity clinics will not be interrupted by more than 1 month, excluding a fellow's vacation time.

Fellows will keep a healthspan patient log of all continuity clinic encounters and this will be submitted to the program on a quarterly basis.

The continuity clinic templates according to level of training and type of rotation are outlined below.

Fellow Clinic Templates

1	2	3	4	5
N 8:00 – 9:00	N 1:30 – 2:30	Recip 8:00 – 9:00	R 8:00 – 8:30	R 1:30 – 2:00
R 9:00 - 9:30	R 2:30 – 3:00	R 9:00 – 9:30	R 8:30 – 9:00	R 2:00 – 2:30
R 9:30 – 10:00	N 3:00 – 4:00	R 9:30 – 10:00	R 9:00 – 9:30	R 2:30 – 3:00
N 10:00 – 11:00	R 4:00 – 4:30	N 10:00 – 11:00	R 9:30 – 10:00	R 3:00 – 3:30
R 11:00 – 11:30	N 4:30 – 5:00	R 11:00 – 11:30	R 10:00 – 10:30	R 3:30 – 4:00
			R 10:30 – 11:00	R 4:00 – 4:30
			R 11:00 - 11:30	

1 = nonhospital months
2 = hospital fellow (consults and service)
3 = fellow on transplant or outpatient who will be doing recip evals
4 = nonhospital fellow from March 15th of their 2nd year to end of training if they are not staying with ECU Nephrology and maintaining a clinic
5= hospital fellow (consults and service) from March 15th of 2nd year to end of training if they are not staying with ECU Nephrology and maintaining a clinic

Revised 11/26/12

OUTPATIENT EXPERIENCES (continued):

2. Acute Transplant Clinic

Fellows will see an average of 6 (range of 3-8) acute transplant patients (≤ 4 months out) once a week on Thursday mornings in the Moye Medical II clinic on the 1st floor. These patients will be shared between 2 fellows. Fellows will only see these patients when they are on a non-hospital rotation. Fellows on inpatient rotations such as consults or service will not see these patients. Fellows will follow acute transplant patients for 4-6 months during the 2013-14 academic year with anticipation of each fellow following acute transplant patients for 4 months during each academic year thereafter. 2 teaching attendings (Dr. Bolin and Lai) will be in the clinic each session.

The acute transplant clinic is a combined medical-surgical clinic and therefore the fellow will have the opportunity to interact with the transplant coordinators and transplant surgeons. The fellows will learn how to administer immunosuppressive medications including side-effect profile and drug-drug interactions, manage medical complications of transplantation, treat infections and diagnose/treat acute rejection.

3. Outpatient Hemodialysis Shift

Fellows will round on an afternoon hemodialysis cohort at ECU Dialysis for 4 months over the course of their 2 year fellowship. Rotations will be divided into 2 back-to-back months in each academic year. Fellows will select their teaching attending/dialysis shift for each month and must do so 2 and preferably 4 weeks prior to the beginning of the rotation. Fellows will see up to 5 patients in their 1st year of training, increasing the number upwards at the end of the 1st year so that they see up to 10 patients during their 2nd year of training. The fellow is expected to round a minimum of 1 time by the 15th of the months and be prepared to present the patients in a comprehensive manner to the supervising attending. Rounds include a limited exam (heart, lungs, access, edema). The teaching attending will either provide the fellow's monthly notes or tell them how to obtain the notes. These should be completed by the 15th of the month to aid in the comprehensive presentation.

4. Peritoneal Dialysis Clinic

Fellows will see 1-3 peritoneal dialysis clinic patients per month in their own PD clinic. It may take up to 6 months to acquire a PD patient. During outpatient rotations in the 1st year, fellows must attend (shadow) as many faculty clinics as possible. During the 2nd year, fellows may attend (shadow) faculty clinics based on the individual fellow's interests or wish to gain additional experience.

A supervising attending will be assigned to each of the fellow's monthly PD clinics.

5. Chronic Transplant Clinic

Fellows will see an average of 8-12 patients per session for 12 months over the course of their 2 year fellowship on an alternating month basis. These patients will be shared between 2 fellows. Fellows will see these patients at the ECU Nephrology Clinic on Tuesday mornings when they are on non-hospital rotations. Fellows on inpatient rotations such as consults or service will not see these patients. Fellows will follow chronic transplant patients for 4-6 months during the 2013-14 academic year with anticipation of each fellow following chronic transplant patients for 4 months during each academic year thereafter. Dr. Bolin (and Jawa-TBA) are the attending supervisors in this clinic.

ECU Nephrology Fellowship
V. Policies and Procedures

1. Lines of Responsibility and Supervision

2. Protocol for Defining Circumstances that Require Attending Notification or Involvement

3. Nephrology Fellow Patient Care Responsibilities

4. Nephrology Fellow/Attending Interactions

5. Nephrology Fellow/Internal Medicine Resident Interactions

6. Limitations on Patient Numbers

7. Non-teaching Patients

8. Evaluation and Counseling

9. ECU Nephrology Service Admission Guidelines

10. ECU Nephrology Attending Responsibilities

11. Writing of Patient Care Orders

12. Resident Professional Activity Outside of the Educational Program (Moonlighting)

13. Fatigue Policy

14. Vacation and Leave Policy

15. Duty Hours Policy

16. Procedure Policy

17. Research Requirement Policy

18. Patient Handoff Policy

Policies and Procedures
1. Fellow and Attending Lines of Responsibility and Supervision

I. Introduction and ACGME guidelines

The fellow oversees the activities of all rotating residents and students on the assigned specialty service, and is responsible to the attending physician of record. The fellow is also responsible to the Nephrology Fellowship Program Director. The attending physician oversees the activities of all trainees on his/her service, and is responsible to the Nephrology Division Chief, and to the Chairman of the Department of Medicine.

The Nephrology Program Director oversees all aspects of the fellows' education and training and is responsible to Nephrology Division Chief, and to the Chairman of the Department of Medicine.

As of 7/1/11, the ACGME requires that in the clinical learning environment, each paitent must have an identifiable, appropriately-credentialed and privileged attending physician (or licensed independent practitioner as approved by each Review Committee) who is ultimately responsible for that patient's care. This information should be available to fellows, faculty members, and patients. **Fellows and faculty members should inform patients of their respective roles in each patient's care.**

The program must demonstrate that the appropriate level of supervision is in place for all fellows who care for patients. Levels of supervision:

Direct Supervision - the supervising physician is physically present with the fellow and patient

Indirect Supervision

- **with direct supervision immediately available** - the supervising physician is physically present within the hospital or other site of patient care, and is immediately available to provide Direct Supervision.
- **with direct supervision available** - the supervising physician is not physically present within the hospital or other site of patient care, but is immediately available by means of telephonic and/or electronic modalities, and is available to provide Direct Supervision.

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

At ECU Nephrology, fellows will <u>always</u> have direct or indirect supervision. There may be instances where they will have oversight in addition to indirect supervision, but **they will never be supervised by oversight alone.** For example, fellows on call at night always have indirect supervision with direct supervision available. The next morning, they may discuss issues surrounding an admission to the service with the service attending who was not on call with them the night before. In this way, the daytime service attending provides feedback after care is delivered (oversight), but there was still an attending on call during that previous night who provided indirect supervision with direct supervision available.

Progressive increase in Responsibility

- **First 3 months of fellowship** - fellows obtains history and performs exam, and then formulates plan of care in various patient care settings including but not limited to consults, service, outpatient, continuity clinic, transplant clinics, PD clinic and outpatient hemodialysis. Fellows do not implement care without discussing 1st with the supervising attending. Fellows may need assistance formulating plan of care.
  - on-call fellow sees and then discusses by phone all admissions and consults with on-call attending. The supervising attending is **always** available for direct supervision.
  - patients requiring dialysis are seen by the attending with the fellow.
  - all temporary dialysis catheter placements are directly supervised by an attending until the fellow achieves competence.
  - fellow watches at least 1 kidney biopsy and then begins to perform native and transplant biopsies with direct and hands-on attending supervision.
- **Months 4-12 of 1st year of fellowship**- fellows achieve progressive authority and independence
  - fellows implement some components of plan of care in various patient settings while other care is instituted after discussing with the attending. The fellows should be able to independently formulate most of the basic aspects of the plan of care, though ECU Nephrology recognizes that in this time period, each fellow gains the knowledge, expertise and confidence to become more independent at their own pace.
  - if deemed competent, fellows may perform temporary dialysis catheters with indirect supervision and direct supervision available.
  - fellows perform kidney biopsies under direct supervision of the attending, though by the end of the 1st year they should require less or no hands-on assistance and fewer verbal cues regarding technique.
- **2nd year of fellowship**
  - fellows continue to achieve more independence.
  - patient care is still directly supervised by attending, but fellows may implement plan of care prior to discussing with the attending. This may include placement of temporary dialysis catheter, the initiation of dialysis, CRRT or the initial treatment plan for emergencies such as hyperkalemia, hyponatremia or volume overload.
  - fellows continue to perform kidney biopsies under direct supervision of attending, but achieves autonomy by the end of the 2nd year such that in most cases, no guidance or input is needed from the attending.

II. Vidant Medical Center

The Nephrology Fellowship Program Director coordinates all aspects of the fellows' education and training, including their supervision by faculty members, as is appropriate for each component of the program. Fellows are provided with graduated responsibilities consistent with their level of training.

ATTENDING FACULTY SUPERVISORY RESPONSIBILITIES INCLUDE:

- Supervising all patient care. This may include direct supervision or for some patients, indirect supervision with direct supervision immediately available.
- Seeing and examining all new admissions to the service and and all new consultations received by the consult team within 24 hours.
- Reviewing all admission and progress notes written by the house staff

- Completing a note in the medical record within 24 hrs for patients admitted to the service, or new consultations.
- Seeing patients on a daily basis and inform patient of his/her role in the patient's care.
- Completing follow-up notes and co-signing resident and/or fellow notes on patients on the service and consult team patients on a daily basis.
- Providing direct supervision for emergent and elective procedures. May provide indirect supervision for temporary dialysis catheter placement once fellow is competent.
- Service attending will directly supervise all outpatient procedures (biopsy, cytoxan, etc) and evaluate outpatients receiving plasmapheresis or hemodialysis in the inpatient hemodialysis unit.
- Discussing patient management daily with residents and fellows on service and consult teams.
- Keeping abreast of changes in the clinical status of patients.
- Being available for consultation at all times.
- Being accessible rapidly through a reliable system of communication.
- Helping the residents and fellows to formulate and execute discharge planning.
- Monitoring residents and fellows for well-being.
- Recognizing and responding to signs of fatigue in house staff.
- Balancing concern for patient safety with resident well-being.
- Ensuring that residents and fellows are adhering to the policies on duty hours.

<u>LINES OF RESPONSIBILITY BY FELLOW YEAR IN TRAINING:</u>

1. CONSULTS

1st Year Fellows:

- 1st year fellows rotate on consults for three months. This may include 1 month blocks or 2 week blocks split with service.
- Responsible for consulting on hospitalized patients with kidney disease and electrolyte disorders
    - Perform a history and focused physical examination
    - Review laboratory values and vital sign data
    - Review urinalysis when appropriate with direct supervision and teaching by the attending
    - Begin to formulate differential diagnoses and therapeutic plan
    - Present case to the consult attending to finalize diagnosis and recommended treatments before any decisions are made
    - Communicate to the referring physician and residents
- Perform procedures as appropriate: kidney biopsy, temporary dialysis catheter placement. Biopsies will always be done under the direct supervision of the attending physician. Temporary dialysis catheter placement will be under direct supervision of the attending physician until at least 5 catheters have been successfully placed and the fellow has achieved sufficient competency.
- Inform patient of his/her role in the patient's care.
- With attending or 2nd year fellow assistance, write orders for acute and chronic hemodialysis in the intensive care units and inpatient hemodialysis units

- Observe attending and 2nd year fellows in their communications with inpatient and ICU dialysis staff and by the end of the 1st year, develop relationships with dialysis staff that facilitate clear communication and optimal patient care
- Evaluate patients with acute renal failure for CRRT
- With attending or 2nd year fellow assistance, write CRRT orders
- Maintain procedural logs for native and transplant biopsies and for temporary dialysis catheter placement

2nd Year Fellows:

- 2nd year fellows rotate on consults for three months. This may include 1 month blocks or 2 week blocks split with service.
- As above for 1st year fellows.
- By the end of the 2nd year, be able to review urinalysis without direct supervision and recognize findings such as RBC casts or dysmorphic red blood cells.
- By the end of the 2nd year, be able to formulate differential diagnoses and therapeutic plan without direct supervision.
- By the end of the 2nd year, be able to recommend initial treatments without direct supervision.
- Confidently and professionally communicate to the referring physician and residents.
- By the end of the 2nd year, be able to independently perform procedures as appropriate: kidney biopsy, temporary dialysis catheter placement. Direct supervision for kidney biopsies will still be provided by the supervising attending physician, but the fellow should have achieved competency such that these procedures could be done without direct supervision.
- Write orders for acute and chronic hemodialysis in the intensive care units and inpatient hemodialysis units without direct supervision and assist 1st year fellows in doing so if needed.
- Write CRRT orders without direct supervision and assist 1st year fellows in doing so if needed.
- Communicate confidently, collegially and professionally with dialysis staff.

2. SERVICE

1st Year Fellows:

- 1st year fellows rotate on service for three months. This may include 1 month blocks or 2 week blocks split with consults.
- Responsible for admitting patients requiring hospitalization for ESRD or related problems, acute renal failure or electrolyte disturbances
    - Perform a history and focused physical examination
    - Review laboratory values and vital sign data
    - Review urinalysis when appropriate with direct supervision and teaching by the attending
    - Begin to formulate differential diagnoses and therapeutic plan
    - Supervise and teach the medical students and residents on the service team
    - Present case or supervise medical students and/or residents as they present to the service attending to finalize diagnosis and recommended treatments before any decisions are made

    - Communicate to the primary fellow, nephrologist or primary care physician about patient's hospital admission
- Inform patient of his/her role in the patient's care.
- Assist medical students and residents in developing a discharge plan including communication with outpatient dialysis staff, referring fellow and/or referring nephrology attending. Review this plan with service attending prior to implementation.
- Perform procedures as appropriate: kidney biopsy, temporary dialysis catheter placement. Biopsies will always be done under the direct supervision of the attending physician. Temporary dialysis catheter placement will be under direct supervision of the attending physician until at least 5 catheters have been successfully placed and the fellow has achieved sufficient competency.
- With attending or 2nd year fellow assistance, write orders for acute and chronic hemodialysis in the intensive care units and inpatient hemodialysis units.
- Observe attending and 2nd year fellows in their communications with inpatient dialysis staff and by the end of the 1st year, develop relationships with dialysis staff that facilitate clear communication and optimal patient care.
- Maintain procedural logs for native and transplant biopsies and for temporary dialysis catheter placement.

2nd Year Fellows:

- 2nd year fellows rotate on service for two months. This may include 1 month blocks or 2 week blocks split with consults.
- As above for 1st year fellows
- By the end of the 2nd year, be able to review urinalysis without direct supervision and recognize findings such as RBC casts or dysmorphic red blood cells
- By the end of the 2nd year, be able to formulate differential diagnoses and therapeutic plan without direct supervision.
- By the end of the 2nd year, be able to recommend initial treatments without direct supervision.
- By the end of the 2nd year, be able to independently perform procedures as appropriate: kidney biopsy, temporary dialysis catheter placement. Direct supervision for kidney biopsies will still be provided by the supervising attending physician, but the fellow should have achieved competency such that these procedures could be done without direct supervision.
- Write orders for acute and chronic hemodialysis in the inpatient hemodialysis unit without direct supervision and assist 1st year fellows in doing so if needed
- Communicate confidently, collegially and professionally with dialysis staff

III. ECU Nephrology and Hypertension

The Nephrology Fellowship Program Director coordinates all aspects of the fellows' education and training, including their supervision by faculty members, as is appropriate for each component of the program. Fellows are provided with graduated responsibilities consistent with their level of training.

ATTENDING FACULTY SUPERVISORY RESPONSIBILITIES INCLUDE:

- Directly supervising all non-hospital patient care.

- Reviewing and seeing with the fellow all continuity clinic patients, all urgent clinic patients, all transplant patients and any outpatient peritoneal or hemodialysis patients with acute/urgent problems.
- Documenting and/or cosign fellows' note in Healthspan for clinic encounters.
- Being accessible rapidly through a reliable system of communication.
- When responsible as hemodialysis teaching shift attending (M/W/F pm or T/Th/Sa pm shifts)
    - Be available in person or by phone at all times for questions about the shift
    - Perform a minimum of one hemodialysis rounds each month with the fellow for the sole purpose of education.
    - Review plan of care and monthly outpatient hemodialysis notes with the fellow
- Review performance and evaluation with the fellow face-to-face at the end of the rotation and complete evaluation on New Innovations.
- Monitoring fellows for well-being
- Recognizing and responding to signs of fatigue in fellows
- Balancing concern for patient safety with fellow well-being
- Ensuring that fellows are adhering to the policies on duty hours

LINES OF RESPONSIBILITY BY FELLOW YEAR IN TRAINING:

1. DIALYSIS

1st Year Fellows:

- 1st year fellows rotate on dialysis during a single 1 month block
- This primarily didactic month should be focused on reading material outlined in the Dialysis notebook, provided by Dr. Christiano
- Fellows should round on their afternoon hemodialysis teaching cohort, complete monthly notes and review with teaching attending for the hemodialysis shift
- Fellows are not responsible for urgent problems in the clinic or in outpatient peritoneal dialysis or hemodialysis.
- Fellows should elicit feedback from Dr. Christiano regarding their progress with learning the basics of dialysis

2. OUTPATIENT

1st Year Fellows:

- 1st year fellows rotate on outpatient during two 1 month blocks.
- Responsible for assessing ECU Nephrology ESRD and pre-dialysis CKD patients with urgent problems.
    - ESRD patients with urgent problems while on hemodialysis will be assessed by the PA, and the fellow should only be involved if the PA requires assistance.
    - Fellows in their initial months of training should promptly notify the supervising outpatient attending for assistance with management of patients with acute problems in the dialysis unit. They will together decide whether direct supervision is required or if indirect supervision with direct supervision immediately available is sufficient.
- With attending or 2nd year fellow assistance, write and adjust chronic hemodialysis orders

- Observe attending and 2nd year fellows in their communications with outpatient dialysis staff and by the end of the 1st year, develop relationships with dialysis staff that facilitate clear communication and optimal patient care.
- Attend as many monthly faculty PD clinics as possible for the purpose of shadowing faculty one-on-one and learning about peritoneal dialysis as a form of renal replacement therapy, management of the PD patient and medical complications of peritoneal dialysis.
    - This should assist the first year fellow transition to becoming primary nephrology provider to 1-3 PD patients of their own by the 2nd year of training.
- Perform procedures as appropriate: kidney biopsy. Biopsies will always be done under the direct supervision of the attending physician.
- Maintain procedural logs for native and transplant biopsies and for temporary dialysis catheter placement

2nd Year Fellows:

- 2nd year fellows rotate on outpatient during two 1 month blocks
- As above for 1st year fellows
- Write and adjust orders in the outpatient hemodialysis unit and assist 1st year fellows in doing so if needed
- Communicate confidently, collegially and professionally with dialysis staff
- Become primary nephrology provider to 1-3 PD patients which will be seen monthly under direct supervision of the supervising attending nephrologist.
- By the end of the 2nd year, be able to independently perform procedures as appropriate: kidney biopsy. Direct supervision for kidney biopsies will still be provided by the supervising attending physician, but the fellow should have achieved competency such that these procedures could be done without direct supervision.

3. TRANSPLANT

1st Year Fellows:

- 1st year fellows rotate on transplant during a single one month block.
- Responsible for performing outpatient and inpatient transplant recipient evaluations with direct supervision by the attending including discussion prior to making final recommendations.
    - Communicate recommendations to transplant team verbally as needed and document evaluation in healthspan.
    - Ensure that referring nephrologist receives a copy of evaluation.
- Responsible for shadowing ENA nephrologist for 1-3 transplant donor evaluations during transplant rotation.
- Responsible for following all hospitalized transplant patients on the transplant surgery service with direct supervision by the consult attending.
- Observe transplant surgeries and vascular access surgeries.
- Responsible for ongoing medical care of patients in the acute transplant clinic
    - With assistance from 2nd year fellow partner, directly supervising attending and transplant surgeon, the 1st year fellow should: 1) manage immunosuppressive agents in kidney transplant patients, 2) identify and treat infectious and metabolic complications of transplantation, 3) identify and treat causes of acute graft dysfunction

- Responsible for following up to 12 patients in the chronic transplant clinic. These patient encounters are directly supervised by Dr. Bolin or Dr. Badwan.
- Perform transplant biopsies as appropriate with assistance of directly supervising attending
- Maintain procedural logs for transplant biopsies

2nd Year Fellows:

- 2nd year fellows rotate on transplant during a single one month block
- As above for 1st year fellows
- By the end of the 2nd year, be able to recommend initial treatments for transplant patients with indirect supervision with direct supervision available including 1) selection and adjustment of immunosuppressive agents, 2) treatment of infectious complications, 3) treatment of metabolic complications, 4) decision of whether or not transplant kidney biopsy is required, and 5) treatment of acute graft dysfunction
- By the end of the 2nd year, be able to independently perform procedures as appropriate: kidney biopsy. Direct supervision for kidney biopsies will still be provided by the supervising attending physician, but the fellow should have achieved competency such that these procedures could be done without direct supervision.

4. RESEARCH

1st Year Fellows:

- 1st year fellows rotate on research during a single one month block.
- Fellows should attend ongoing divisional research conference.
- Complete online HIPAA course
- Complete online IRB modules
- Fellows will be able to work with 1 or more faculty mentors based on their evolving area(s) of interest.
- During the first half of the first year, the fellow should work with their faculty mentor(s) to develop a research project and plan for scholarly productivity
- With attending assistance, learn methods with which to critically assess scientific literature

2nd Year Fellows:

- 2nd year fellows rotate on research during two 1 month blocks
- As above for 1st year fellows
- By the end of the 2nd year, fellows should have completed 2 scholarly works such as abstract presentation (poster or oral) at a national meeting, case report, review article, or manuscript. See Research Requirement Policy for details of requirements.

5. INDEPENDENT STUDY

2nd Year Fellows:

- 2nd year fellows rotate on Independent Study during 1 month during their 2nd year.
- This primarily didactic month should be focused on one topic chosen by the fellow in an area needing improvement or areas of interest where more in-depth study is desired. If

choosing an area needing improvement, the fellow should use their in-training scores as a guide and choose a topic based on the ABIM Nephrology blueprint.

- Fellows should round on their afternoon hemodialysis teaching cohort, complete monthly notes and review with teaching attending for the hemodialysis shift
- Fellows are not responsible for urgent problems in the clinic or in outpatient peritoneal dialysis or hemodialysis.
- Fellows should elicit feedback from Dr. Hames or other faculty mentor regarding their progress with independent study.

Revised 4/17/07; 7/6/10; 7/1/11

Policies and Procedures
2. Nephrology Fellow Protocol for Defining Circumstances that Require Attending Notification or Involvement

During the first 3 months of fellowship training, fellows must notify their supervising attending for:

- Any admissions to the service
- Any new consults
- Any change in level of care for a patient
    - to an intermediate bed or to an ICU bed
- Anytime the fellow makes a decision to urgently or emergently dialyze or pherese a patient
- Any significant complication of hemodialysis (such as potentially lethal arrhythmia or hemodynamic instability)
- Death of a patient
- Individual attendings have the authority to request notification from fellows above and beyond what is listed above.

During the remainder of fellowship training, fellows must notify their supervising attending for:

- Any admissions to the service where the fellow needs guidance from the supervising attending
- Any new consult where the fellow needs guidance from the supervising attending
    - Attending MUST be notified for all hyponatremia consults, ICU consults, consults requiring hemodialysis or CRRT at the time of consult, TTP patients or any other patient requiring apheresis, any patient called in for kidney transplant or unstable pregnancy consults.
- Any change in level of care for a patient
    - To an intermediate bed or to an ICU bed
- Anytime the fellow makes a decision to urgently or emergently dialyze a patient
- Any significant complication of hemodialysis (such as potentially lethal arrhythmia or hemodynamic instability)
- Death of a patient
- Individual attendings have the authority to request notification from fellows above and beyond what is listed above.

It is expected that the fellow will achieve progressive independence from the 1st 3 months of training to the end of training. We will never stipulate a situation where the fellow "should not" call, but it is expected that gradually over the 1st year of training, particularly from the 3rd to 12th month, the fellow will develop the ability to make an increasing number of decisions independently. Furthermore, as the fellow progresses through training, it is expected that the fellow will have an increasing ability to formulate a thorough differential diagnosis, diagnostic evaluation and treatment plan.

Back-up systems for notification

- If a fellow is unable to reach their supervising attending, they must page or telephone the program director. Of note, the program director is available 24/7 for the 1st 3 months of each fellow's training and most other times of the year as well. If the program director is out of town or cannot be reached, the fellow will page or telephone the division chief. If for any reason the fellow is not able to reach any of these 3 individuals, the fellow should then begin calling any of the remaining 4 faculty members until someone is reached. Phone lists are available at \\Piratedrive\ecukidney\SCHEDULESandPHONElists.

2/1/12

Policies and Procedures
3. Nephrology Fellow Patient Care Responsibilities

I. Overview

The ECU Nephrology section maintains a busy clinical practice. Required clinical experiences for the nephrology fellow include rotations on nephrology consults, the nephrology service, the outpatient rotation and the renal transplant service. This document outlines the clinical responsibilities of the nephrology fellow on each of these rotations.

II. Consult Rotation

Each fellow will complete a total of 6 (3 in the 1st year and 3 in the 2nd year) months on the nephrology consult team at Vidant Medical Center, an affiliate of Vidant Health. This may consist of 1 month blocks or the month may be split equally between consults and service. During this rotation the nephrology fellow is responsible for performing or supervising the performance of, all new inpatient or emergency room consultations requested of the nephrology consult team between the hours of 8 AM and 5 PM. The consult fellow is also responsible for daily follow-up on all patients on the consult service. The consult fellow is requested to see all patients on the consult service undergoing hemodialysis at least once during their treatment, preferably within one hour of dialysis initiation. Unstable or high-risk patients should be seen at least twice during hemodialysis. Peritoneal dialysis patients are to be evaluated at least once daily with this evaluation to include a review of their peritoneal dialysis record. Patients on continuous renal replacement therapy (CRRT) are to be seen at least once daily and their progress reviewed at least twice daily. Placement of temporary vascular access for hemodialysis or CRRT is the responsibility of the consult fellow (see procedural policy). The fellow should perform all renal biopsies on consult patients requiring a biopsy and should review the pathology with the renal pathologist. For all patients receiving procedures including renal biopsies and temporary vascular access placement, a log must be entered by the fellow into New Innovations using the procedure logger. The fellow will also enter a note into the EMR using the biopsy template note .nephrenalbiopsy. The consult fellow is expected to follow all transplant patients on the ECU transplant team unless there is another fellow simultaneously assigned to the transplant rotation that month. Each fellow is expected to check out to the on-call nephrology physician(s) in a manner consistent with proper continuity of care. Check-out time is expected to be at or after 5 PM.

The consult fellow will at all times have a supervising attending assigned to the nephrology consult rotation. The fellow is responsible for communicating all new consultations to the supervising attending, and for updating the consult attending on all patients. Daily teaching rounds with the consult attending are mandatory. Emergency room consultations that result in a recommendation of admission to the nephrology service should be communicated to the service fellow and/or attending directly, at which point responsibility is transferred to the inpatient service team. See supervision policy for further details.

Effective 1/18/06: When the consult fellow was on call for the weekend or long (3 days) holiday call, his/her day ends at 1330 on the first working day after the weekend or long (3 days) holiday call. The following then applies:

a. pager of this fellow is carried until 1700 by service fellow
b. new consults 1330-1700 is priority responsibility of service fellow
c. round on “old” consult pts is consult attending responsibility
d. if no new consults 1330-1700 service fellow responsibility is service team business

III. Service Rotation

Each fellow will complete a total of 5 (3 in the 1st year and 2 in the 2nd year) months on the nephrology service at Vidant Medical Center, an affiliate of Vidant Health. This service includes ECU nephrology patients requiring admission and unassigned patients with a problem related to dialysis, transplant or other kidney disorder. The service fellow is responsible for the care of the patients on this team between 8 AM and 5 PM, with the assigned attending physician performing a supervisory role. The nephrology fellow, in conjunction with the supervising attending, is responsible for all procedures on the service including hemodialysis, peritoneal dialysis, renal biopsies, temporary vascular access placement, and supervision of general medical procedures performed by the resident staff. A log of each procedure must be entered by the fellow into New Innovations using the procedure logger. Patients undergoing hemodialysis or peritoneal dialysis are to be monitored as outlined under the consult rotation guidelines.

The attending physician on the service will share rounds with the nephrology fellow and will be available at all times either on site or through the paging system.

Effective 1/18/06: When the consult fellow was on call for the weekend or long (3 days) holiday call, his/her day ends at 1330 on the first working day after the weekend or long (3 days) holiday call. The following then applies:

a. pager of this fellow is carried until 1700 by service fellow
b. new consults 1330-1700 is priority responsibility of service fellow
c. round on "old" consult pts is consult attending responsibility
d. if no new consults 1330-1700 service fellow responsibility is service team business

IV. Outpatient Rotation

Each nephrology fellow will complete 4 (2 in the 1st year and 2 in the 2nd year) one-month rotations on the outpatient service at the ECU Physicians Nephrology and Hypertension facility. This rotation is designed to teach the nephrology fellow care of outpatients with chronic kidney disease with an emphasis on patients with end stage renal disease. Fellows will round on an afternoon hemodialysis cohort at ECU Dialysis for 12 months over the course of their 2 year fellowship on an alternating month basis. Fellows will see up to 5 patients in their 1st year of training, increasing the number upwards at the end of the 1st year so that they see up to 10 patients during their 2nd year of training. Fellows will only see these patients when they are on a non-hospital rotation. Fellows on inpatient rotations such as consults or service will not see these patients. The fellow is expected to round a minimum of 1 time by the 15th of the months and be prepared to present the patients in a comprehensive manner to the supervising attending. Rounds include a limited exam (heart, lungs, access, edema). The teaching attending will either provide the fellow's monthly notes or tell them how to obtain the notes. These should be completed by the 15th of the month to aid in the comprehensive presentation.

The 1st year fellow will shadow with attendings during their peritoneal dialysis clinic during this rotation. This is optional for the 2nd year fellow. Additionally, the outpatient fellow and supervising outpatient attending will be responsible for seeing all patients attending the acute care clinic at this facility. Patients will be assigned to the acute care clinic based upon presence of an acute illness requiring a physician visit. The acute care clinic is not to be used for routine follow-up patient visits or for evaluation of patients whose illness requires emergency room management. Fellows are not expected to participate in attending physicians' continuity clinics during this rotation though they are expected to maintain their own continuity clinic.

The outpatient rotation will be supervised at all times by an attending physician. Attendings will be assigned for the dialysis shift covered, peritoneal dialysis clinic, and the acute care clinic. When the fellow is assigned to their continuity clinic or to peritoneal dialysis clinic, the acute care clinic will be staffed by the supervising attending alone.

V. Transplant Rotation

Each nephrology fellow will complete 2 (1 each year) one-month rotations on the ECU renal transplant service. The transplant fellow is responsible for performing all consultations and for following all renal transplant patients in which an inpatient ECU nephrology consultation is requested between 8am and 5pm. The fellow will round with the consult attending on these patients. The Fellows are not responsible for transplant patients followed by a private nephrology consultant. The transplant fellow will attend both acute and chronic transplant clinic once per week with the transplant clinic attending. In the event that there is no fellow rotating on the transplant rotation the consult service fellow will be responsible for any transplant patients requiring an ECU Nephrology consult. The transplant fellow is expected to perform all percutaneous kidney transplant biopsies during their rotation. A log of all transplant biopsies and a list of transplant patients followed will be kept to ensure adequate transplant experience for each fellow.

The consult attending will supervise the nephrology fellow during their inpatient transplant experience and Drs. Bolin, Lai and Badwan will supervise the nephrology fellow in the outpatient setting.

VI. Research Rotation

Each fellow will have 3 months of research (1 in the 1st year and 2 in the 2nd year) during their two-year fellowship. During research rotations the fellow's clinical responsibilities are limited to their continuity clinic, acute transplant clinic and outpatient dialysis cohort in addition to any scheduled on call duties. Fellows are not responsible for urgent work-ups or urgent problems in the outpatient dialysis unit. They have no responsibilities for patient care in the hospital (except for time on call).

VII. Elective Rotation

Each fellow will have 2 elective months (1 in the 1st year and 1 in the 2nd year). Clinical responsibilities during elective months depend upon the elective chosen. Unless an elective is scheduled to take place outside of Greenville, the fellow's continuity clinic will meet. Likewise fellows are responsible for the care of patients in transplant clinic and on their outpatient hemodialysis shift. If the elective is out-of-town, continuity clinics may be cancelled for up to 4 weeks per year and cross-coverage for transplant clinic and the outpatient hemodialysis shift must be arranged.

VIII. Continuity Clinic

Each fellow will maintain a continuity clinic at the ECU Physicians Nephrology and Hypertension clinic. This clinic will take place one half day per week, every week, for the duration of their two-year fellowship. Clinics are arranged so that fellows on non-hospital rotations have clinic in the morning on Wednesdays and the hospital based fellows have clinics in the afternoon. There will always be a dedicated supervising attending and all patients MUST be seen by a Nephrology attending. Fellows will be responsible for seeing an average of 4-8 patients each half-day session. Patients previously evaluated for transplant by a nephrology

fellow will be followed by that fellow post-transplant. All clinics will be supervised by an attending nephrologist and all patients will be discussed with the supervising attending.

Revised 07/11/07

Policies and Procedures
4. Nephrology Fellow/Attending Interactions

1. Introduction

Nephrology fellows are, at all times, and on all inpatient and outpatient rotations, assigned to an ECU nephrology attending physician. The nephrology fellow is expected to take on the responsibility of patient care while under the supervision of this assigned attending. The attending physician is expected to respect the autonomy of the nephrology fellows while maintaining ultimate responsibility and knowledge of the clinical status of the patient. Striking an appropriate balance between fellow autonomy and attending control is imperative and should be part of fellow and attending evaluations. This document outlines the expected interactions between the fellows and attending physicians in the clinical settings each fellow is likely to encounter. Details of supervision, attending rotations, mechanisms of communication, and call schedules for the rotations are outline elsewhere in the nephrology fellowship or the attending physician policies and procedures manuals.

II. Consult and Service rotations (inpatient)

An attending physician is assigned to nephrology consults at all times. All consults including emergency room evaluations are to be presented to the attending physician on the consult service. The nephrology fellow is expected to round on, or assign residents or students to round on, all patients requiring follow-up of previous consults and to present these findings or assist the other trainees in the presentation of these patients to the attending physician during attending rounds. Attending teaching rounds will take place every day. Attendings are expected to be physically present for, and to evaluate the performance of, all procedures including supervision of hemodialysis, CRRT, renal biopsies, and peritoneal dialysis evaluation.

Patients on the service are under the direct care of an ECU Nephrology attending and team. The nephrology fellow is expected to oversee residents, interns and students as they care for these patients. The fellow is NOT expected to write daily notes, rather they should focus on diagnosis, treatment plans and management. The service fellow will work closely with the supervising attending. Attending teaching rounds will take place every day. Attendings are expected to be physically present for, and to evaluate the performance of, all procedures including supervision of hemodialysis, plasmapheresis, renal biopsies and peritoneal dialysis evaluation.

III. Outpatient rotation

An attending physician is always assigned to the outpatient clinic which includes pre-dialysis clinic, PD clinic and the hemodialysis unit. When fellows are on this rotation, they are responsible for evaluating new urgent referrals, urgent clinic or dialysis patient problems under the direct supervision of the outpatient attending.

IV. Ambulatory Experiences - The acute transplant clinic, the chronic transplant clinic, the fellow's peritoneal dialysis clinic, the fellow's nephrology continuity clinic, and the fellow's outpatient hemodialysis cohort are all supervised by an assigned attending physician. Each patient seen is to be presented to the supervising nephrology attending. The nephrology attending is required to examine all patients seen in these clinics and to document their findings. The fellow shares the documentation responsibilities in these patients.

Policies and Procedures
5. Nephrology Fellow/Internal Medicine Resident Interactions

I. Overview

Nephrology fellows will interact with residents in internal medicine and other medical specialties throughout their fellowship. Fellows will serve as teachers, supervisors, and may assist in the evaluation process of residents and students. Specific guidelines for the clinical rotations are outlined in this document.

II. Consult Rotation

Internal Medicine and Family Medicine residents along with third and fourth year medical students frequently rotate on the consult team. The fellow is expected to coordinate the efforts of the trainees and assign them with new consults as appropriate. The fellow should assist in consultations providing teaching and learning opportunities for the team. All patients will be presented to the attending physician during daily teaching rounds. It is anticipated that residents and students will present the majority of the consults on attending rounds after the nephrology fellow has prepared them for this presentation. The attending or nephrology fellow should supervise all procedures performed on the service by a rotating resident.

The nephrology fellow's perception of the resident/student's performance will be utilized in the evaluation process performed by the attending physician. The fellow is encouraged to provide feedback to the rotating trainees throughout the rotation so that their performance can improve with time on service.

Nephrology fellows will also interact with residents and students on other services. To assure quality patient care and maximize teaching and learning opportunities the nephrology fellow should assure proper communication of recommendations to the team requesting consultation.

III. Service Rotation

The service is composed of 3 or 4 resident trainees, 1 to 3 medical students, and a supervising attending. On months where a fellow is assigned to the service, the fellow, with supervision from the assigned attending, is responsible for coordinating the efforts of the trainees with regard to patient care, education, and evaluations. All procedures performed by these individuals should be supervised by the nephrology fellow and/or attending.

IV. Outpatient Rotation

During the outpatient rotation nephrology fellows will infrequently interact with residents or students. Most interactions are anticipated to occur when a patient requires admission to the hospital or transfer to the emergency room. In the event of such a patient transfer the nephrology fellow is expected to communicate the patient's condition to the inpatient admitting resident or the emergency room physician or resident.

V. Transplant Rotation

Nephrology fellows will frequently interact with students or residents rotating on the ECU transplant surgery service or another primary service. As consultants, the transplant fellow is expected to follow guidelines similar to those outlined for the consult service. Nephrology

fellows are not expected to respond to surgical complications of the transplant patient and these questions should be routed to the surgical staff. The transplant fellow should, however, assist with medical management of the transplant patient as guidelines of consultation dictate.

VI. Continuity Clinic

There should be little interaction between nephrology fellows and residents or students during their continuity clinic. Any interaction would likely represent a request for consultation or transfer for emergency or inpatient management. In these circumstances the nephrology fellow is expected to communicate appropriately with the accepting physicians.

VII. Offsite – Eastern Nephrology Associates Vascular Access Center – Interventional Nephrology Rotation (elective)

The nephrology fellow does not have any responsibility for teaching and /or supervising other subspecialty/internal medicine residents or other specialty residents while on an Interventional Nephrology elective.

Policies and Procedures
6. Limitations on Patient Numbers

1. Introduction

Fellows on nephrology services or on outpatient rotations are limited with regard to the total number of patients they are assigned. These limitations are outlined for each clinical setting.

II. Consult rotation

Nephrology fellows are limited to writing notes on 20 patients on the consult rotation. The consult team total number may exceed 20 given that all patients are not seen every day and it is important for nephrology fellows to be able to manage these volumes of patients in preparation for future practice. If the number of patients that the fellow sees and writes notes on exceeds 20 patients, the nephrology attending is responsible for designating patients as non-teaching cases to achieve a teaching team for that day of less than 21. The non-teaching cases become the sole responsibility of the consult attending. Though no specific limit is placed on the number of new consults a nephrology fellow sees in one day, attendings are expected to limit these consults to a reasonable manner.

III. Service

Nephrology **fellows are limited to 20 patients on the service rotation**. If this service exceeds 20 patients, the nephrology attending is responsible for designating patients as non-teaching cases to achieve a teaching service of less than 21. The non-teaching cases become the sole responsibility of the inpatient service attending.

IV. Outpatient

At the ECU Physicians Nephrology and Hypertension dialysis facility, nephrology fellows are responsible for their cohort of ECU nephrology patients on the shift to which they are assigned. Fellows are not responsible for patients on other dialysis shifts or patients on their shift who are not ECU nephrology patients. The total number of dialysis patients followed by a fellow are 5 in the first year, transitioning up towards 10 at the end of the first year if requested by the fellow, and a maximum of 10 patients in the 2nd year of training.

Nephrology fellows are limited to on average 8 patients per weekly continuity clinic (including monthly PD clinic, transplant clinic and their ½ day per week ambulatory clinic averaged out per week over a 2 month period). All patients seen after this limit of 8 are the sole responsibility of the assigned attending physician.

V. Transplant Rotation

Nephrology fellows are limited to 24 patients on the inpatient transplant service. The acute transplant continuity clinic typically includes 1-4 follow-up patients. Nephrology fellows will see these patients in conjunction with the attending but will be responsible for writing notes and full evaluation on no more than 8 patients per clinic (including monthly PD clinic, transplant clinic and their ½ days per week ambulatory clinic averaged out per week over a 2 month period). All patients past this limit of 8 are to be managed by the assigned attending physician.

VI. Continuity Clinic

Nephrology fellows will see on average 4 to 8 patients per half-day ambulatory continuity clinic. The supervising attending will see any patients in excess of this number.

Policies and Procedures
7. Non-Teaching Patients

I. Introduction

At the teaching sites for the nephrology fellowship program, fellows may encounter patients who are not affiliated with ECU Nephrology. As a general rule, regardless of the rotation, nephrology fellows are responsible for patients followed by ECU Nephrology only. Outlined below are the circumstances in which fellows may encounter non-teaching patients at the various teaching sites.

II. Vidant Medical Center

Patients on the hospital wards, in the intensive care units, at the hospital based outpatient clinics, and in the inpatient dialysis facility are the responsibility of the nephrology fellow only if they are followed by the ECU nephrology consult, service or transplant teams. Patients followed by private practice nephrologists or physicians not associated with ECU nephrology are seen by the fellow only if formal consultation is requested. In the transplant clinic, fellows will see patients shared between ECU transplant surgery and ECU nephrology. Limitations on patient numbers for this site are outlined under the policy on this topic for each of the clinical rotations. Patients followed by ECU nephrology that exceed the patient number limitations outlined are considered non-teaching patients and the fellow is not responsible for the care of these patients.

III. ECU Physicians Nephrology and Hypertension

Patients seen at the ECU Nephrology and Hypertension facility are seen by nephrology fellows on their outpatient rotation and in their continuity clinics. During the outpatient rotation, the fellow is responsible for all patients on the afternoon dialysis teaching shift assigned to that fellow. Since the ECU Physicians Nephrology and Hypertension dialysis facility is an "open" dialysis unit patients not followed by ECU nephrology may be dialyzed during the "fellows" shift. These patients are considered non-teaching patients.

In the acute care clinic, patients are the responsibility of the nephrology fellow assigned to that clinic. Exceptions include days when the fellow has continuity clinic and months when no fellow is assigned to this rotation. All patients in the fellows assigned continuity clinic are the responsibility of the nephrology fellow.

Fellows bear no responsibility for non-teaching patients at the ECU Nephrology and Hypertension facility. Limitations on patient numbers for the acute care clinic and the continuity clinic are outlined elsewhere.

IV. Offsite – Eastern Nephrology Associates Vascular Access Center – Interventional Nephrology Rotation (elective)

The nephrology fellow is one-on-one at all times with the Eastern Nephrology Associates attending responsible for the procedures to be performed. The nephrology fellow would not be in a position of providing patient care in the absence of the supervising physician, given the procedural nature of this rotation. A fellow is not expected to provide care to any patient other than those receiving procedural care by the fellow and the supervising attending.

Policies and Procedures
8. Evaluation and Counseling

1. Fellow Evaluations – monthly rotations

Fellows will receive a written evaluation at the completion of each one-month rotation to be completed by their supervising attending. Evaluations will include the areas of medical knowledge, patient care, professionalism, interpersonal skills and effective communication, systems-based practice and practice-based learning and improvement. The fellow's progress with performance of key procedures will also be reviewed. This assessment will be recorded on the standard electronic form provided through New Innovations. The evaluation forms will be kept in the fellow's portfolio in a confidential fashion by the fellowship program director. Attendings will discuss these written evaluations face-to-face with the fellow at the completion of each rotation and to give feedback during the course of the rotation prior to the formal evaluation process.

II. Fellow Evaluations – Continuity Clinic

Fellows will receive an evaluation of their continuity clinic experience on a twice a year basis. This evaluation will be completed by the clinic supervising attending and address the skills and characteristics outlined in part I above.

III. Fellow Evaluations – multisource evaluations

Fellows will receive quarterly evaluations by continuity clinic, hemodialysis, hospital nurse including ICU nurses.

IV. Assessment of Procedural Competence

Fellows are asked to keep a log of all invasive procedures performed utilizing the procedure logger in New Innovations. Additionally, the ECU nephrology database will be utilized to document the number of hemodialysis, continuous renal replacement therapy, and peritoneal dialysis procedures performed.

V. Fellow Evaluations – Semi-annual evaluation by program director

Each fellow will meet twice yearly with the fellowship program director to discuss their progress and to review their evaluations to date. The fellowship director will provide appropriate counseling where necessary. This evaluation will include areas of clinical competence including medical knowledge, patient care, professionalism, interpersonal skills and effective communication, systems-based practice and practice-based learning and improvement. Progress in continuity and other clinics will be addressed, numbers reviewed for HD shift and PD clinic as well as procedural experience and proficiency of key procedures. All evaluations will be reviewed. Results of the annual in-training exam will be reviewed.

VI. Fellow Summative Evaluations

At the completion of the nephrology fellow's two-year clinical fellowship, a summative evaluation will be prepared by the fellowship program director.

VII. Attending Evaluations

Each fellow will evaluate the attending physicians in the Division of Nephrology at the completion of each of their rotations. This evaluation will be made available to the attending

physician and will be maintained in a confidential manner. A record of these evaluations will be kept by the fellowship program director who is expected to provide feedback and counseling to the teaching attendings. These evaluations may influence future rotational assignments where deemed necessary.

VIII. Annual Evaluation of Faculty and Fellowship

In the spring of each year, fellows will complete a written, confidential evaluation of key and other faculty, and of the program as a whole. Areas to be evaluated will include rotations, conferences, call schedules, and block schedules. These will be compiled by the coordinator in a confidential manner, the original forms destroyed, and data reviewed individually with each faculty as well as generally at the annual review of fellowship each June. In the fall of each year, faculty will complete a confidential written evaluation of the program as a whole. These evaluations, along with other evaluations, will be used during the annual review of fellowship meeting(s) in May and/or June to assess program quality and improvement.

VI. Fellows' Right of Appeal

Adverse evaluations *or events* will be discussed in detail with the program director and the fellow will be given the opportunity to address all deficiencies or areas of misconduct. Any disciplinary action will follow the rules and guidelines outlined for GME training through Vidant Medical Center office of Graduate Medical Education. In the event of disagreement between the evaluators and the nephrology fellow, the nephrology fellow has the right of review of this evaluation and any planned disciplinary action through the office of GME. Fellows have the right to view their evaluation file at any time, but are prohibited from viewing files of other trainees.

Policies and Procedures
9. Service Team Admission Guidelines

1. All ECU Nephrology ESRD patients (transplant and dialysis) except:
   a. ICU admissions
   b. Most surgical admissions
   c. Most AMU or OBS admissions (i.e. uncomplicated biopsy admissions, transfusions)
   d. Admissions requiring a primary subspecialty service other than nephrology (i.e., neurology, hemo/onc, gyn, etc)
   e. Transplant patients in the first *4* months or those requiring specific surgical intervention
   f. Uncomplicated vascular access or Tenckhoff catheter placement admissions

2. ECU Nephrology clinic patients meeting any of the following criteria:
   a. ECU Nephrologist is their primary care physician
   b. Primary care physician is not ECU affiliated and does not wish to admit.
   c. Primary care physician is ECU Family Practice or ECU General Medicine but admission is primarily prompted by renal problems.

3. Unassigned patients who:
   a. require dialysis
   b. have a primary renal process

4. All appropriate requests for transfer to the ECU Nephrology service team from outside nephrologists or other physicians

5. All reasonable requests for transfer to the ECU Nephrology service team from Vidant Medical Center physicians

Admission Procedure

1. Call the inpatient team fellow and senior resident
2. Call refer direct 847-7777
3. Attending designation is the service attending even if a non-service attending is on call after hours
4. Call service attending as outlined in the supervision policy

Policies and Procedures
10. Attending Responsibilities

Consult Attending Responsibilities

1. "Point person" for all access and ER calls. If admission to the service is warranted the service resident or their cross-cover should then be called (no note necessary if admitted to service)
2. See all nephrology consults within 24 hours of request.
3. See all service patients on call weekends and when on call, weekdays starting at 5 PM (12 Noon Friday)
4. Along with NP and fellow, hold service resident and intern pagers by 1pm and until class is completed by 4:30pm.
5. Rounds with the service team each morning on call weekends.
6. Where appropriate, communication with outpatient care provider upon discharge

Service Attending Responsibilities

1. See all admissions to the service within 24 hours of admission
2. See all patients admitted before 5 PM (12 Noon Fridays)
3. Daily teaching rounds with house staff
4. Communicate on discharge with outpatient care provider
5. Care of all outpatients receiving scheduled plasmapheresis or red blood cell exchange at the HDU
6. Ongoing outpatient care
    a. peritoneal dialysis clinics as usual
    b. transplant clinics as usual
    c. ECU outpatient hemodialysis shifts as usual
    d. outpatient nephrology clinics are blocked. NO new work-ups. Patients who need to be seen urgently are to be seen in urgent clinic or added on at attending's discretion
7. Consult, service, and procedure coverage during call nights and call weekends starting 5 PM weekdays (12 Noon on Fridays).
8. Consults after 12 Noon on Fridays when the service attending is on call
9. Along with NP and fellow, hold service resident and intern pagers by 1pm and until class is completed by 4:30pm.

Outpatient Attending Responsibilities

1. Communicate with the consult attending for direct hospital admissions to services other than the renal service, access problems, and patients being sent to the ER for evaluation
2. Contact the ED to forewarn them of patients being sent to the ED
3. Follow admission procedure outlined above for admissions to the service. Some outpatient admissions are at the discretion of the outpatient physician (i.e. biopsies, transfusions, cytoxan, etc.)

Policies and Procedures
11. Writing of Patient Care Orders

1. Routinely, the Internal Medicine residents write all orders for the patients for whom they are caring.

2. Nephrology fellows write all orders for procedures and treatments that require subspecialty expertise and that are beyond the scope of internal medicine training. These include: acute and chronic hemodialysis, peritoneal dialysis, continuous renal replacement therapy, plasmapheresis and the monitoring of a patient undergoing renal biopsy.

3. Attending physicians may only enter orders on teaching patients in the unusual circumstance when the fellow is unavailable and patient care could be compromised by any delay. Attending physicians are expected to discuss these orders with the fellow and residents caring for the patient.

4. Attending physician's and fellows should also adhere to the GME Policy Concerning the Writing of Patient Care Orders Outlined below on page 104 of the fellow's manual.

Graduate Medical Education Policy Concerning the Writing of Patient Care Orders

http://www.ecu.edu/cs-dhs/gme/customcf/policies/WritingOrders.pdf

1. Residents who possess an unrestricted license or training license issued by the Board of Medical Examiners of the State of North Carolina may write patient care orders for patients receiving care in facilities operated by Vidant Medical Center and East Carolina University.

2. They may also write patient care orders in facilities which have affiliated with Vidant Medical Center for residency training through an Inter-institutional Agreement, Letter of Agreement, or similar formal training agreement.

3. Residents must be directly involved in the decision making process related to "do not resuscitate" and cytotoxic chemotherapeutic agents orders for patients in whose care they are directly participating. Residents, identified above, may write "do not resuscitate" and cytotoxic chemotherapeutic orders for these patients, but a responsible attending physician, prior to implementation, must countersign cytotoxic chemotherapeutic orders. Countersignature may be obtained as a verbal order. "Do not resuscitate" orders must be signed by the attending physician within twenty-four (24) hours in order to remain in effect.

4. When a resident physician is directly and significantly participating in the care of any patient, the attending physician should refrain from writing patient care orders for that patient. When circumstances dictate that the attending physician must write patient care orders in teaching patients, this should be communicated promptly to the resident participating in the patient's care.

This policy supercedes all previous policies related to this issue.

GMEPC Approved 3/2000

Policies and Procedures
12. Fellow Professional Activity Outside of the Educational Program (Moonlighting)

I. Definition:

Moonlighting is the resident's participation in any financially compensated activity of a medical nature that occurs outside of the residency training program.

II. Moonlighting

1. Residents are not required to participate in moonlighting or other professional activity outside of the scope of the residency program.

2. Before a resident may participate in moonlighting, s/he must notify the Program Director in writing and receive a written statement of permission to moonlight from the Program Director. Residents must also notify the Program Director in writing of any changes in the nature or extent of the moonlighting activity. All such written documents must be a part of the resident's training file.

   The Program Director shall monitor the resident's moonlighting activities for the effect of these activities upon performance. Permission to moonlight may be withdrawn if there are adverse effects on the residents' performance.

   Failure of a resident to follow the above enumerated requirements and limitations constitute grounds for disciplinary action.

   Residents shall be made aware of this policy statement and agree to abide by it as a condition of employment.

3. Licensure Requirement

   Residents engaging in moonlighting must hold an unrestricted medical license.

4. Liability Insurance

   Residents engaging in moonlighting, either within or external to Vidant Medical Center must have appropriate medical liability insurance independent of that provided to residents by Vidant Medical Center. The medical liability insurance provided to residents by Vidant Medical Center does not provide insurance coverage for residents while engaging in moonlighting activities.

1. Funding

   The employer pays monies and benefits earned by residents in moonlighting directly to the resident.

2. Absence of Vidant Medical Center Liability

   It is the responsibility of the entity employing the resident to moonlight to determine whether such licensure is in place, adequate liability coverage is provided, and whether the resident has the appropriate training and experience to carry out assigned duties.

III. Moonlighting within Vidant Medical Center

Clinical departments in the Brody School of Medicine, VMC and attending physicians may engage residents to perform patient care activities within VMC and under these circumstances:

1. The considerations and requirements enumerated in Section II. 1-6 above are applicable.
2. The institution or individuals engaging residents shall insure that residents have malpractice insurance equivalent to that provided to residents by the hospital covering their residency activities.
3. Residents moonlighting within VMC shall be appointed as temporary postgraduate fellows and as members of the consulting medical staff.
4. Residents employed by VMC may not moonlight within the same department in which they primarily receive residency training except during segments of the curriculum which have no clinical responsibilities or when specifically recommended by the Graduate Medical Education Committee, the Graduate Medical Education Policy Committee and approved by the Dean of the Brody School of Medicine and the President of VMC.

IV. Prior Policies and Practices

All prior polices and practices related to resident moonlighting are hereby rescinded.

ECU Nephrology Policies and Procedures Moonlighting

1. Nephrology fellows are allowed to moonlight outside of Vidant Medical Center or ECU affiliated facilities. Effective 3/1/09, nephrology fellows **will be permitted to moonlight within the sponsoring institution**. Any moonlighting must be pre-approved by the Nephrology program director.

Fellows who wish to moonlight within the sponsoring institution as hospitalists must be credentialed and approved by hospitalist service – referenced above in the Vidant Medical Center policy.

Any other moonlightiong opportunities within the sponsoring institution will have to be approved beforehand as an exception ref III, section 4 above.

2. Fellows are NOT allowed to moonlight either externally or within the sponsoring institution during consult or service rotations. Fellows are limited to no more than 4 twelve hour shifts per month. This may be re-evaluated at any time. Any month where moonlighting occurs, nephrology fellows are required to submit duty hour logs to the program director through New Innovations as they do on consult or service months.

3. All duty hours requirements shall be met as outlined in the Nephrology Duty Hours Policy.

4. Nephrology fellows must adhere to the GME policy outlined above.

Approved by Governing Body 7/17/06; 1/23/09
Revised 4/4/07; 2/6/09; 6/20/11

Policies and Procedures
13. Fatigue

The resident's well-being is the utmost priority.
Patient errors are linked to fatigue.

Taken from the ACGME duty hours requirement:

- duty hours limited to 80 hours a week, averaged over a four-week period, including all in-house calls.
- averaged over a four-week period, residents must have one day in seven free from all educational and clinical responsibilities.
- Residents in the final years of education must be prepared to enter the unsupervised practice of medicine and care for patients over irregular or extended periods. Nephrology fellows are considered to be in the final years of education. It is desirable that residents in their final years of education have eight hours free of duty between scheduled duty periods.
- continuous on-site duty, including in-house calls, may be scheduled to a maximum of 24 hours of continuous duty. Programs must encourage fellows to use alertness management strategies in the context of patient care responsibilities. Strategic napping, especially after 16 hours of continuous duty and between the hours of 10:00 pm and 8:00 am, is strongly suggested. Fellows may remain on duty for up to four additional hours to ensure that effective transitions in care occur.

Signs and symptoms of fatigue: irritability, carelessness, forgetfulness, interpersonal issues/conflict, falling asleep in lectures/conference, feeling of "no energy," comments about feeling fatigued, increase in physical ailments (headaches, backaches, nausea, etc.)

Prevention of Fatigue:

Provide a checklist of healthy behaviors to residents
Educate residents and faculty about warning signs of fatigue
Biannual resident self-assessment of fatigue
Educate residents about common job-related stressors that may affect residents
Distribute "Fight Fatigue: A Training Handbook for Residents"
Provide a safe environment for the resident to discuss concerns about fatigue
Monitor and control duty hours
Monitor moonlighting activities

Early Identification of Fatigue:

Encourage faculty and residents to alert program director about any personal concerns or concerns about a colleague with respect to fatigue
Encourage staff to report to program director any concerns about resident fatigue

Management of Fatigue:

Provide a safe environment for the resident to discuss concerns about fatigue
Monitor and control duty hours
Limit duty hours as necessary
Monitor and as necessary limit moonlighting activities
Provide additional time off as deemed necessary by the program director
Critically review rotations and requirements, including goals and objectives for major rotations at least annually. Both faculty and fellow input required.

Fatigue Mitigation Strategies:

10-45 minute naps
1-2 hour naps also increase efficacy but may result in sleep inertia
Caffeine when sleepy (and not when awake)
Exercise/activity during duty
Bright light

Resources for the resident: Fight Fatigue: A Training Handbook
www.sleepfoundation.org
www.lifecurriculum.info

revised 7/1/11

Policies and Procedures
14. Vacation and Leave

EXHIBIT I

POLICY ON RESIDENT VACATION AND LEAVES
http://www.ecu.edu/cs-dhs/gme/customcf/policies/VacationAbsence.pdf

The scheduling of vacations, the granting of leaves of absence and the provision of holiday time are administrated within the individual residency programs under this common policy.

Annual Vacation Leave

Three weeks of vacation is provided annually. Vacation time for residents will begin accruing immediately upon employment. The resident's preference for vacation time shall be considered whenever possible.

Sick Leave

Twelve days of sick leave annually are available for all residents and is provided to help protect against economic hardships due to illnesses.

Holidays

The Organization observes nine (9) holidays. Work schedules within each program shall be adjusted to ensure that each resident has equitable holiday time.

Leaves of Absence (Paid or Unpaid) Policy

A. Personal Leave of Absence. *(Not covered by the Family and Medical Leave Act of 1993).* The Program Director may grant a resident a personal leave of absence without pay not to exceed thirty (30) calendar day. Residents may request a leave of absence through their Program Director and complete required forms in the Graduate Medical Education Office. The thirty (30) calendar day period may be extended by approval of the Vice President of Human Resources as circumstances warrant. Accrued vacation and holidays must be used before requesting personal leave.

B. Illness or Disability (including Pregnancy) Leave of Absence. *(Not covered by the Family and Medical Leave Act of 1993).*

1. Illness. If a resident with six months of service, but less than 12 months develops an illness or disability (including pregnancy), Program Directors may grant a leave of absence based on the medical necessity. The resident will report to the Graduate Medical Education Office to complete the appropriate paperwork before the leave of absence begins. Statements from the resident's attending physician substantiating the need for a leave and justifying the length of time requested may be required by the Program Director. Leaves of this nature will not exceed three (3) months.

2. Illness Determined by Insight or Occupational Health Service. If a resident develops an illness or disability and the Program Director determines that continued work may jeopardize the health of the employee, co-workers, patients,

or the public, the Program Director may require the resident to be examined by the Occupational Health Services. Based upon the results of the examination, the Program Director may choose to place the resident on a leave of absence in accordance with advice from the Occupational Health Services' physician. The resident will report to the Graduate Medical Education Office to complete the appropriate paperwork before the leave of absence begins. In some instances, the InSight Program may be utilized instead of Occupational Health Services, as applicable.

In either case 1 or 2 (above), when the resident notifies the Program Director that he/she is ready to return to work, the Program Director may require the employee to be examined by the Occupational Health Services and may require a letter from the attending physician stating the resident may return to work.

C. Medical or Family Leave. Residents may be granted Medical or Family Leave in accordance with the Family and Medical Leave Act of 1993.

Who's Eligible? Residents who have worked at least 1250 hours in the previous 12 month period may request a leave of absence through their Program Director for up to 12 weeks during the fiscal year. The resident must have been employed by VMC for a total of at least 12 months prior to the beginning of the leave. If a resident is not eligible for Medical or Family Leave, the resident may be eligible for a Personal Leave of Absence of a Leave of Absence for Illness, as described in paragraphs A and B above.

A 12 month period is defined as the payroll fiscal year for purposes of the Family and Medical Leave policy.

Residents requesting a leave of absence of any kind must provide the Program Director a written notice by completing a Family and Medical Leave Certification form at least 30 days prior to the beginning of the leave, whenever possible. The Family and Medical Leave Certification form may be obtained from the Graduate Medical Education Office. A resident's leave request may be denied if the resident fails to complete a Family and Medical Leave Certification form. Once a leave is approved, any time undertaken, paid or unpaid, counts toward the total 12 week period required by the law.

Extensions for any leave of absence beyond the 12 week period must be approved by the Vice President of Human Resources. The extended leave will be based on information provided by the resident on a Family and Medical Leave form as to the purpose for the medical need.

Family Leave includes the birth of a child, care of newborn child, adoption or foster care of a son or daughter.

Medical Leave includes serious illness of the resident or the need to care for a spouse, son, daughter (including step-children, and other qualifying dependents living in the household) or parent with a serious illness based on medical necessity.

1. Medical Leave of Absence *(Note: Act requires employers to grant intermittent or reduced leave, if medically necessary).*

a. Illness or Disability of the Employee *(including pregnancy)*. The Act provides for residents with a "serious illness" which prevents them from performing their job duties to be granted a leave for up to 12 weeks during any payroll fiscal year based on medical necessity. This 12 week leave period will include all sick leave residents are required to use. A leave of absence may be extended up to six (6) months, depending on the medical need and must be approved by the Vice President of Human Resources. The extended leave will be based on information provided by the resident on a Family and Medical Leave Certification form as to the purpose for the medical need.

A serious illness is defined as a health condition that involves inpatient care in a hospital, hospice, residential medical facility, or continued treatment by a health care provider. A serious illness includes psychological illnesses as well as physical illnesses.

The Hospital has the right to request a second or third opinion at the Hospital's expense and certification of illness, which would include the medical facts of the illness. The Program Director may also request subsequent recertification of the illness. For leave of absences longer than 2 weeks (including pregnancy) residents will be required to submit a statement form the physician releasing the resident to return to work.

b. Residents with a serious illness may be granted an intermittent or reduced leave based on medical necessity. Intermittent leave is a leave taken in separate blocks of time due to a single illness or injury, not to exceed 12 weeks (480) hours within a 12 month period (Example: Employee takes six weeks leave for surgery, returns to work for four weeks, and later needs another three weeks leave for chemotherapy.)

Reduced leave is a leave schedule which allows residents to reduce usual working hours in a workday or workweek based on medical necessity.

2. <u>Family Leave of Absence</u> *(Note: Act does not require an employer to grant intermittent or reduced leave for family leave for child birth or care of newborn child, adoption or foster care.)*

a. Serious Illness of a Child, Spouse or Parent. Residents may be granted a 12 week leave, reduced or intermittent leave of to care for a spouse, child (including step-children and other dependents living in the household) or a parent with a serious illness based on medical necessity.

A serious illness is defined as a health condition that involves inpatient care in a hospital, hospice, or residential medical facility, or continued treatment by a health care provider. A serious illness includes psychological illnesses as well as physical illnesses.

A spouse is a husband or wife as defined or recognized under State law for purposes of marriage.

A child (son or daughter) is a biological, adopted or foster child, a step-child, a legal ward, or a child of a person standing in loco parentis, who is either under age 18 or older and incapable of self-care because of a mental or physical disability. (Loco parentis includes someone with day-to-day responsibilities to care for and financial support of a child. A biological or legal relationship is not necessary.)

A parent is a biological parent or an individual who stands or stood in loco parentis to an employee when the employee was a child.

Residents are required to use any accrued vacation and any holiday time for illness of a child, spouse or a parent, prior to any unpaid leave. Utilization of accrued sick time is not permitted. This paid time off would be inclusive of the total 12 week period.

b. Childbirth. Residents may be granted a leave of absence following childbirth for a one-time continuous 12 week period. This 12 week period will include any leave time for illness or disability of the employee during or after pregnancy. The resident will be required to use any accrued vacation and any holiday time after the illness or disability during the leave for childbirth.

The resident must provide the Program Director and the Office of Graduate Medical Education with a written notice at least thirty (30) days prior to the beginning of the expected leave. This leave of absence must be taken within the 12 month period beginning on the date of birth, unless the resident is disabled prior to the birth, in which case C-1 of this policy would apply. Utilization of accrued sick leave will be for illness or disability of the resident only.

c. Adoption or Foster Care. Residents may be granted a one-time continuous leave for up to 12 weeks for adoption or foster care of a child. The resident must provide the Program Director and the Office of Graduate Medical Education a written notice at least thirty (30) days prior to the beginning of the expected leave whenever possible. This leave of absence must be taken within the 12 month period beginning on the date of placement in the home, unless absence from work is required prior to placement in order for the adoption or placement to proceed (e.g. employee is required to attend counseling sessions, court appearances, etc. related to the case.)

Residents are required to use any accrued vacation, sick and holiday time during the leave for the adoption or foster care of a child.

When both parents are employed with VMC, the two may be granted no more than a total of 12 weeks leave (e.g. six weeks each).

D. Extensions for any leave of absence beyond the 12 week period must be requested and approved by the Program Director, Graduate Medical Education Office and Vice President of Human Resources with a maximum of 12 months.

E. While on leave of absence, a resident may continue his/her current insurance premiums provided necessary arrangements for payment of the premium are made with the Payroll Department. (Details of an employee's insurance coverage during a leave of absence are available in the Compensation and Benefits Department.)

If the resident does not return from leave because of reasons other than the continuation, recurrence, or onset of a serious health condition affecting the resident, the resident's spouse, child or parent, or some other reason beyond the resident's control, the resident must reimburse Vidant Medical Center for premiums paid by Vidant Medical Center during the resident's leave of absence.

F. A resident's leave of absence may be canceled and employment terminated according to the following:

* The resident accepts employment with another employer before the expiration of the leave.
* The resident fails to return to work at the expiration of the leave or 12 week period without prior approval for extension of the leave from the Program Director and/or Vice President of Human Resources.
* The resident, in the case of medical leave, fails to provide certification of the medical necessity for the leave within 15 days after the employer's request for it, or fails to provide recertification of the medical necessity for the leave within a reasonable time (not to exceed 15 days) after the request for it (unless it is not practicable for the resident to do so despite the resident's diligent, good faith efforts.)

Pregnancy Wellness Program

The Organization is committed to the quality of life of employees through wellness and prevention. The Pregnancy Wellness Program is a major focus of the wellness efforts. Therefore, flexible working hours are permitted for pregnant residents to attend pregnancy wellness classes and prenatal physician appointments. Residents are responsible for coordinating, in advance, the time off and make-up time with their Program Directors.

Residency Program Guidelines for Parental Leave

PURPOSE: The Graduate Medical Education Committee recognizes the need to allow residents the flexibility of scheduling time away from the work place relating to parental leave have been established:

A. The Residency Program Director must be advised at the earliest possible time of a resident's pregnancy and anticipated delivery date. To the greatest extent possible light duty rotations will be scheduled for late pregnancy and post delivery.

B. Consistent with the Vidant Medical Center Personnel Policies and with the approval of the Residency Program Director, the resident may use accrued sick days and vacation time. This is paid leave as long as sick and vacation days are available and all hospital benefits continue.

C. Leave beyond this time will be leave without pay. Employee benefits, particularly health insurance, may be maintained provided the premiums are paid by the resident. All leave is provided through the Vidant Medical Center benefits program and is therefore subject to Vidant Medical Center Personnel Policies.

D. In cases of complication in pregnancy, in which leave needs to start before the 38th week, special arrangements should be made with the Residency Program Director. The resident should contact the program director as soon as any complications are recognized. In such cases, the resident may be asked to provide a physician's statement outlining the circumstances.

E. Absences (to include vacation) beyond the allowable interruption in training as defined by the certifying body of each of the individual departments may be extended at the end of the resident's regular training period, i.e. 36 months, 48 months, etc.

F. When placed on leave of absence, the resident may re-enter the program provided the resident meets the criteria established within the individual departments.

G. Adopting parents or residents requesting paternity leave should use accrued vacation time. If additional time is requested beyond the accrued vacation time, the Leaves of Absence Without Pay/Personal Leave of Absence will be applicable.

All guidelines described herein have been approved by the Graduate Medical Education Policy Committee (GMEPC) and are subject to re-evaluation and modification at any time. When they are in conflict with policies on leaves of absence of the certifying body of the various residency training programs, the policies of those groups will be adhered to.

Funeral Leave

Program Directors may grant time off with pay up to 6 work days (48 hours) per fiscal year but no more than 3 work days (24 hours) per circumstance to residents for attending to funeral arrangements, personal affairs of, or attending funeral services for a member of the immediate family. Immediate family is defined by this Organization as an employee's husband, wife, son, daughter, mother, father, sister, brother, mother-in-law, father-in-law, son-in-law, daughter-in-law, grandfather, grandmother, grandson, and granddaughter. Step relatives will be considered the same as natural relatives for the purpose of this policy. Reasonable proof of death and funeral attendance shall be supplied by the resident when requested by the Organization.

Military Leave

A. Residents who are members of the North Carolina National Guard or one of the military reserve components shall be granted time off for required periods of active duty for training each year. These residents will be granted up to 2 weeks of this time without loss of pay. Residents desiring military leave must supply their Program Director and the

Graduate Medical Education Office with a copy of their military orders before the military leave. Residents who are on military leave with pay shall reimburse the Organization the military pay received up to an amount equal to their regular Organizational pay. On return from leave the resident shall present a copy of his military pay voucher to the Payroll Department. A check will be issued to compensate for any difference between the military pay and the resident's regular Organizational pay less travel and living expenses. The resident's time sheet will be coded "Military Leave."

B. Personnel of the Armed Forces of the United States, and those who are subject to and called upon for military or war duties other than annual active duty for training under the provision of any state or federal statute or Presidential or Gubernatorial Order, shall be given a leave of absence (without pay) without loss of continuous service for any periods of time they are so called. Residents called for active duty must supply their Program Director with a copy of their military orders before the military leave. The copy will be forwarded to the Graduate Medical Education Office to become part of the resident's permanent records.

Court and Jury Duty

Time off with pay shall be granted to any resident summoned for Jury Duty. Should a resident be notified that he/she is required to attend or be subpoenaed as a witness in any Organizational related court action, the resident should notify his/her Program Director immediately. The resident shall receive regular pay and be compensated for travel. Residents who are defendants in criminal actions, plaintiffs or defendants in civil actions, or subpoenaed in either shall be given time off without pay or may be granted accrued benefit time at the Program Director's discretion.

Adopted 2/90; revised 4/96; revised 9/01

SPECIFICALLY FOR ECU NEPHROLOGY FELLOWS:

Yearly Vacation/Professional/Sick Leave

- 10 days professional leave (meeting attendance)
- 12 sick days/year
- 15 days vacation
    - It is preferable that vacation be requested 3 months in advance, the minimal time frame is 1 month in advance in accordance with departmental standards.
    - It is the fellow's responsibility to ensure coverage for conferences such as journal club or nephrology grand rounds; for transplant clinic and for any conflicts in the "on-call" schedule.
    - It is preferable that vacation be taken in one week blocks on non-hospital months.
    - However, vacation for a two week block will be permitted under the following circumstances in accordance with ACGME-RRC guidelines for completion of a "meaningful" rotation: One week will be taken during a non-hospital month and the remaining adjoining week may be taken during a consult or service month by arranging coverage in a collegial fashion amongst fellows.
    - Any extenuating circumstances preventing adherence to the above guidelines must be reviewed and approved by the program director.

Educational/Other Leave

- 5 days per 2 YEAR FELLOWSHIP to be used for interviews, meetings with licensing/government/visa issues, etc.

**** Any overages constitutes time without pay**

Book and Travel

- $1500.00 per 2 year fellowship to be used in part or in whole at any time
- Any fellow presenter at the following conferences will receive $500.00 and 3 days off to attend meeting (2 days travel and day of presentation)
    - ASN - November
    - ATC - May
    - ASH - May
- Questions re: reimbursement to Elaine Briley and Anita Holley
- ECU Nephrology will pay up to $1000.00 towards the purchase of board review DVDs or registration fee for each fellow to attend a Nephrology board review course of their choosing once during their fellowship. The fellow may attend in their 1st or 2nd year of training as long as appropriate fellow cross-coverage is arranged for any hospital, outpatient, clinic or call duties. **IF** the fellow chooses to attend in the fall after they complete fellowship, the registration must be submitted prior to June 30th of their 2nd year. Registration for the fall ASN board review course opens in the preceeding April or May of the same year (verified with ASN 7/06). The payment will be made DIRECTLY from ECU Nephrology Bentzel Fund to the ASN, not to the fellow (no exceptions). Meals, lodging, airfare will remain the responsibility of the fellow.

Updated 7/18/06; 4/19/11; 7/1/13

Policies and Procedures
15. Duty Hours

Nephrology Fellowship Training Program Duty Hours Policy

The Nephrology Fellowship Training Program at Vidant Medical Center recognizes that a sound academic and clinical education must be carefully planned and balanced with concerns for patient safety and Fellow well-being. Learning objectives of the program must not be compromised by excessive reliance on Fellows to fulfill service obligations. The program will have zero tolerance for violation of this policy.

The program's policies and procedures, including supervision, moonlighting, and duty hours policies, are distributed to the Fellows and the faculty each year as part of the Nephrology Fellow Manual. This is also available electronically at \\Piratedrive\ecukidney.

Supervision of Fellows

All patient care must be supervised by qualified faculty. Fellows in the Nephrology Training Program are provided with rapid, reliable systems for communicating with supervising faculty. Faculty schedules are structured to provide Fellows with continuous supervision and consultation.

Please refer to the program's Policy on Fellow Supervision.

Recognition of Fatigue and Countermeasures

Faculty and Fellows are educated at least annually to recognize the signs of fatigue and to adopt and apply measures to prevent and counteract the potential negative effects of fatigue. This program will maintain documentation that each Fellow and each faculty member have participated in this educational activity at least annually.

Duty Hours Requirements

The Nephrology Training Program oversees Fellows duty hours and working environment. During all rotations, trainees and staff shall conform to existing ACGME, RC, and institutional duty hour policies. Duty hours are defined as all clinical and academic activities related to the Fellowship program, i.e., patient care (both inpatient and outpatient), administrative duties related to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled academic activities such as conferences. Duty hours do not include reading and preparation time spent away from the duty site.

Duty Hour Limitations for Nephrology

- Fellows will not be scheduled for more than 80 duty hours per week, averaged over a 4-week period.
- Fellows will on average (over a 4-week rotation) have at least one day (24 hours) in 7 free of patient care responsibilities.
- Fellows do not take in-house call (defined as those duty hours beyond the normal work day when Fellows are required to be immediately available in the assigned institution).

- Continuous on-site duty to date has never exceeded 24 consecutive hours. In the event this occurs, Fellows may remain on duty for up to four additional hours to ensure that effective transitions in care occur. No new patients, as defined in the Nephrology RRC Program Requirements, may be accepted after 24 hours of continuous duty.

- Adequate time for rest and personal activities must be provided. This must consist of at least an 8-hour time period free of duty between scheduled duty periods and preferably a 10-hour time period free of duty between scheduled duty periods. To ensure that this occurs, daily rounds with the Fellow on the Consult and Service rotations must end by 7pm.

- In accordance with the ACGME 2010 duty hour standards, Nephrology fellows are considered to be in their final years of training. They must be prepared to enter the unsupervised practice of medicine and care of patients over irregular or extended periods. Thus, we recognize that there may be rare circumstances when our fellows must stay on duty to care for their patients or return to the hospital with fewer than eight hours free of duty. Justifications for these rare extensions of duty are limited to reasons of required continuity of care for a severely ill or unstable patient, academic importance of the events transpiring, or humanistic attention to the needs of the patient or family. These circumstances are expected to be rare, must be of the fellow's initiative and need not initiate a new "off-duty period" nor require a change in the scheduled "off-duty period." Under these circumstances, the fellow must appropriately hand over care of all other patients to the fellow and/or nephrology attending responsible for their continuing care. The reason(s) for remaining or returning to care for the patient in question must be documented and submitted to the program director. This may be in the form of direct face-to-face communication, telephone call or email to the program director.

- Fellows will take at-home call an average of every fourth night throughout their 2 year fellowship training. At-home call will not be so frequent as to preclude rest and reasonable personal time for each Fellow. When a Fellow is called into the hospital from home, the hours that a Fellow spends in-house are counted toward the 80-hour limit.
- The Nephrology Fellowship Training Program's moonlighting policy delineates the process by which Fellows may moonlight and how moonlighting hours count toward the duty hours requirements.

Contingency Plan

The program director will establish a contingency or backup system that enables patient care to continue safely during periods of heavy use, unexpected Fellow shortages, or other unexpected circumstances. The program director and supervising faculty will monitor Fellows for the effects of sleep loss and fatigue, and take appropriate action in instances where overwork or fatigue may be detrimental to Fellows' performance and the well being of the Fellows or the patients or both.

- Based on the situation, the Program Director and supervising Faculty will together develop an individualized contingency plan to ensure ongoing patient care in the event a fellow is approaching duty hour limits, in circumstances of fellow shortages or other instances described above. In the event of temporary fellow shortages, Fellow at-home call may be increased to no more than every third night. During ordinary daily duties including Consults, Service and Outpatient, supervising Faculty have and will continue to provide direct patient care as needed in the absence of a fellow.

Duty Hour Compliance Monitoring

The Nephrology Training Program directly monitors duty hours effective January 2006. Time cards are utilized during all inpatient rotations where the duty hours are typically longer. From January 2006 until July 2008, this was done by the fellows on handwritten time cards. Effective August 2008, each fellow inputs their hours worked (including hours spent in the hospital during on call duties) into New Innovations. The Program Director reviews the duty hour data monthly, and will prepare a biannual report for the GMEC to be sent to the Office of GME before August 15 and February 15 of each year. The report will provide an analysis of the data recorded in New Innovations as well as plans for avoiding future violations if violations have occurred in the previous year.

Fellow rotations are divided into high and low risk rotations in regards to the potential for duty hours violations. High-risk rotations for Nephrology Fellows are Consults and Service; both are inpatient rotations. High-risk rotations are also any rotation during which time Fellows are participating moonlighting. Data are collected by each fellow throughout these rotations. If any of the following criteria are present, a low-risk rotation will be re-defined as a high-risk rotation:

- A history of one or more duty hour violations in the past six months
- A rotation for which a Fellow has reported to the Office of GME a duty hours concern even if the investigation concludes no violation occurred

In addition, the program director and faculty will monitor compliance with this policy by monitoring call and duty schedules, direct observation of Fellows, interviews/discussions with Fellows, review of moonlighting activities with Fellows and review of Fellows' evaluations of rotations. Fellows are instructed to notify the Program Director, or the Office of Graduate Medical Education, if they or other Fellows are requested or pressured to work in excess of duty hours limitations. Fellows who have any concerns regarding duty hours that have not been addressed in a satisfactory way by the program are encouraged to report them confidentially to the Associate or Assistant Dean for GME by completing a Confidential Duty Hour Complaint Form which can be obtained from the Office of GME. There will be zero tolerance for any retaliation against a Fellow who reports any concerns regarding duty hours. All reports will be forwarded to the Duty-Hours Sub-Committee of the GMEC who will be charged with investigating the complaint through contact with the program director, faculty, other Fellows and other staff as appropriate. This Sub-Committee will report to the GMEC and one of two things may occur:

1. Take no further action on the complaint after determining that that program is in compliance with duty hour requirements.
2. Conclude that the program is not in compliance with the duty hour requirements. The Associate Dean for Graduate Medical Education or her designate will then work with both the program director and the Fellows to develop an action plan for compliance in the future.

The Program Director maintains an open-door policy so that any Fellow with a concern can seek immediate redress. If problems are suspected, the Program Director will notify the Associate Dean for Graduate Medical Education and gather direct duty hour data to clarify and to resolve the problem. In addition, the GMEC will confirm program compliance during review of the program's duty hour reports.

Revised 7/1/11

Policies and Procedures
16. Procedure Policy

Approved by Governing Body 7/12/07; 11/29/07; 5/7/10

Fellows must develop a comprehensive understanding of indications, contraindications, limitations, complications, techniques, and interpretation of results of the diagnostic and therapeutic procedures integral to the discipline. Fellows must acquire knowledge of and skill in educating patients about the rationale, technique, and complications of procedures and in obtaining procedure-specific informed consent. Faculty supervision of procedures performed by each fellow must occur until proficiency has been acquired and documented by the program director (PD).

In the subspecialty of nephrology, multiple procedures outlined below are considered key procedures. In addition, **all fellows must log and track the performance of 1) temporary vascular access for hemodialysis and related procedures and 2) percutaneous biopsy of autologous and native transplants**. Each fellow and the Program Director will review the procedure logs twice a year at the fellow's semi-annual review.

Key Procedures:
Placement of temporary vascular access for hemodialysis and related Procedures (10)
Percutaneous biopsy of both native (10) and transplanted kidneys (5)
Urinalysis (10)
Acute (10) and Chronic (10) Hemodialysis
Continuous Renal Replacement Therapy (CRRT) (10)
Peritoneal Dialysis (10)
Plasmapheresis (5)

Standard for Proficiency: A checklist for temporary vascular access placement and for percutaneous kidney biopsy is outlined below. Fellows must successfully complete and have attending co-signature on 5 checklists for each of the following procedures: 1) temporary vascular access placement, 2) percutaneous biopsy of autologous kidneys and 3) percutaneous biopsy of transplanted kidneys. Fellows may perform temporary vascular access without immediate faculty supervision after proficiency has been determined and approved by the PD. Fellows will always have direct supervision for all kidney biopsies. **Proficiency is defined as:**
Biopsy – awareness of potential complications and adequate tissue obtained
Temporary vascular access placement – awareness of potential complications; adequate anatomical, procedural and sterile technique; functioning catheter in the vascular space.

Document achievement of proficiency: Checklists as outlined above must be maintained in the fellow's portfolio. PD documentation of proficiency will be recorded in the fellow's portfolio. Furthermore, logs must be maintained and turned into the program on a quarterly basis for all vascular access and biopsy procedures performed during training. Fellows must dictate all temporary vascular access and kidney biopsy procedures into the hospital EMR for documentation and to aid the fellow in future credentialing.

Number of procedures required for successful completion of nephrology fellowship: Note numbers in parentheses outlined above under key procedures. These may be completed over the course of the 2 year fellowship.

Temporary Vascular Access checklist

	Understand indications and contraindications
	Obtain informed consent
	Set-up tray
	Sterile technique
	Operator (gown/glove/face shield/hat) Patient (skin prep/drape)
	Anatomy; Properly identify landmarks
	Local anesthesia (medication used, technique)
	Utilization of ultrasound (site-rite)
	Seldinger technique
	Suturing and dressing site
	Breakdown and proper disposal of materials (sharps)
	Appropriate follow-up: VS, CXR

With faculty supervision, each fellow must complete 5 directly supervised procedures & checklists. Program Director approval is then required prior to performing procedure without direct supervision.

Comments:

Fellow signature: _____

Faculty signature: _____

Percutaneous Biopsy checklist

	Understand indications and contraindications
	Obtain informed consent
	Set-up tray
	Sterile technique
	Operator (gloves and other as needed) Patient (skin prep/drape)
	Anatomy, Position patient, Identify landmarks
	Local anesthesia (medication used, technique)
	Utilization of ultrasound
	Technique (lower pole of kidney, proper depth)
	Adequate tissue is obtained
	Complete path, radiology and post-bx paperwork
	Appropriate f/u: post H/H, f/u any complications

With faculty supervision, each fellow must complete 5 directly supervised procedures & checklists for native biopsy and 5 for transplant biopsy. Program Director approval is required to document proficiency.

Comments:

Fellow signature: _____

Faculty signature: _____

Policies and Procedures
17. Research Requirement Policy

During the 2 year fellowship, each fellow must complete 2 scholarly activities:

1. Submission and acceptance of an abstract as a poster or oral presentation to a major national or international meeting (ASN, AST, ASH, NKF, CRRT, Annual Dialysis Conference, International Society of PD meeting). Additional meetings may be approved by faculty.
2. A Scholarly activity that is approved by a faculty member. This may include case reports, submission of medical images, presentation either orally or as a poster at ECU IM Research Day, presentation either orally or as a poster at Vidant Medical Center GME Research Day, speaking at or contributing educational material for patient education venues such as the AAKP, or submission and acceptance of a 2nd abstract as a poster or oral presentation to a major national or international meeting (ASN, AST, ASH, NKF, CRRT, Annual Dialysis Conference, International Society of PD meeting, etc.)

Proposed 4/21/10
Approved by governing body 7/6/10; revised 6/20/11

18. Policies and Procedures
Patient Handover Policy

ACGME requirements:

- Programs must design clinical assignments to minimize the number of transitions in patient care.
- Sponsoring institutions and programs must ensure and monitor effective, structured handover processes to facilitate both continuity of care and patient safety.
- Programs must ensure that residents are competent in communicating with team members in the handover process.
- The sponsoring institution must ensure the availability of schedules that inform all members of the health care team of attending physicians and residents currently responsible for each patient's care.

Settings where appropriate Patient Handover must occur:

Patients admitted to Vidant Medical Center from ECU Nephrology Outpatient Clinic or Outpatient Dialysis.

Patients discharged from Vidant Medical Center back to an Outpatient ECU Nephrology attending, fellow, or extender.

Patients discharged from Vidant Medical Center back to Outpatient Dialysis.

Hospitalized patients with active issues - from daytime consult or service fellows/attendings to on-call fellow/attending.

Hospitalized patients with active issues - from on-call fellow/attending back to daytime consult or service fellows/attendings.

Hospitalized patients transferring between the consult and service teams.

Outpatients with active issues that the on-call fellow/attending need to be aware of.

Expectations for Regular Handovers:

ECU Nephrology fellows/attendings will communicate on a daily basis any appropriate Handovers to and from the on-call fellow/attending either verbally in person or by phone, or electronically (e-mail, text page, video conferencing).

ECU Nephrology fellows or attendings at anytime may request a combined handover which may include multiple fellows/attendings. This may be done in settings of critically ill patients or issues where any individual feels care will be benefitted by multiple person/level handover.

Each Friday afternoon, patient hand-over will occur between service/consult attendings and fellows AND the on-call attending/fellow. In this manner, competency of fellows in communicating with team members in the handover process may be assessed and monitored.

ECU Nephrology fellows/attendings/extenders will communicate all hospital discharges of dialysis patients covered by ECU Nephrology to the appropriate dialysis charge nurse and extender, and will complete dialysis outpatient orders and fax to the dialysis unit.

The outpatient dialysis extender and/or dialysis charge nurse and/or outpatient ECU

Nephrology fellow/attending will communicate with the appropriate fellow/attending any patient being sent to the hospital for admission. For patients thought to be stable for admission to the renal service, the renal service fellow/attending may be contacted. If the level of care that will be required is uncertain (renal service vs. ICU and thus renal consult team), the renal consult fellow will be notified and that fellow will ensure that appropriate team members are notified as needed.

Friday Afternoon Supervised Handovers:

Minimum information to be transmitted in the hand-over process:

- Utilize the 5 P's: patient identification, patient data, precautions/code status, problems/plan, physician's orders
- Fellows will receive immediate direct verbal feedback by faculty regarding competency with these handovers. Faculty will also document competency of individual fellow handovers as part of monthly faculty evaluation of fellow.

Schedules:

The monthly call schedules are made in 6 month blocks and are available at least 1 month prior to the beginning of the block. This schedule includes:

- fellow and attending assignments for consults, service, outpatient
- on-call fellow and attending
- designation of which Nephrology group is on call for unassigned admissions and for plasmapheresis

These call schedules are distributed to all ECU Nephrology fellows, attendings, and staff; to inpatient and outpatient dialysis and plasmapheresis staff; to ECU Transplant attendings and staff; to the Emergency Department; to the ECU Physician's On-Call Answering Service and to the Vidant Medical Center Refer Direct office.

7/1/11

ECU Nephrology Fellowship
VI. Pertinent Nephrology Forms

1. **Monthly Evaluation of Nephrology Resident**
2. **Semiannual Nephrology Resident Evaluation**
3. **Evaluation of Nephrology Fellowship Training Program**
4. **Evaluation of Nephrology Faculty**
5. **Evaluation of ECU Nephrology Graduates**
6. **Procedural Log Form**

EVALUATION OF SUBSPECIALTY TRAINEES

Trainee's Name: _____ Rotation: _____

Evaluator's Name: _____ Month(s) of _____ Evaluation Date

Please evaluate the trainee's performance of each component of clinical competence. Circle the rating which best describes the trainee's skills and abilities. Appended are descriptors to help define the extremes of behavior in each component. It is anticipated that few individuals will merit a rating of either 1 or 9; most will receive ratings between these gradations. Identify the major strengths and weaknesses you have observed in the trainee's performance under the comments portion on the reverse side.

	Unsatisfactory			Satisfactory			Superior			
	1	2	3	4	5	6	7	8	9	N/A

1. CLINICAL JUDGMENT
Often fails to discern relationship of medical facts and clinical data, evaluate alternatives, or consider risks and benefits. Does not understand limitations of his/her knowledge or skills. Poorly established priorities. Illogical, rambling, incomplete, or inaccurate presentations or medical records. Indecisive in difficult management situations.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Regularly integrates medical facts and clinical data, weighs alternatives, understands limitations of knowledge, and incorporates consideration of risks and benefits. Spends time appropriate to the complexity of the problem. Presentations, records, and consultation notes always accurate, responsive, explicit, and concise.

2. MEDICAL KNOWLEDGE
Limited, poorly organized. Adds little to referring physician's knowledge.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Extensive and well applied. Consistently up-to-date.

3. RESPONSE TO MEDICAL QUESTIONING
Evasive, vague, hesitant.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Consistently responsive with concise, correct reply.

4. CLINICAL SKILLS

History-taking skills
Often incomplete, superficial, by role, and not directed.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Always precise, logical, thorough, reliable, purposeful, and efficient. Suitably focused. Specificity and clarity convey sophistication.

Physical Examination skills
Often incomplete, inaccurate, cursory, non-directed, insensitive, awkward or unreliable.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Complete, accurate, directed toward patient's problems. Elicits subtle findings, uses special techniques when necessary.

Technical / Procedural Skills
Inept. Frequent disregard for risk to patient and patient's anxiety and comfort.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Always proficient. Minimizes risk and discomfort to patients. Provides proper explanation of purpose for conducting procedures.

Case Presentations
Inaccurate, unorganized, rambles, unable to identify relevant details. Often omits pertinent data.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Always accurate, organized, succinct, identifies relevant data. Always concisely presents pertinent data.

Record Keeping
Incomplete problem lists and medication lists. Records frequently tardy and illegible, even though complete and accurate.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Always includes comprehensive current problem lists, updates medication lists. Provides timely patient write-ups and progress notes. Writes legibly. Documents preventive measures. Annual summaries. Concise, explicit letters to referring physicians.

5. MEDICAL CARE
Poor diagnostic ability. Treats problems rather than patients. Over reliance on tests and procedures. Frequently causes iatrogenic diseases. Misses major problems. Unable to establish priorities. Incomplete therapeutic plans. Ignores role as patient's advocate. Fails to monitor and follow up patient appropriately.

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Identifies all the patient's problems. Interrelates abnormal findings with altered physiology. Establishes sensible differential diagnoses. Provides orderly succession of testing and therapeutic recommendations. Educates patients and families. Serves as patient's advocate. Provides high quality, appropriate, cost effective and comprehensive acute and chronic care.

		Unsatisfactory			Satisfactory			Superior				
		1	2	3	4	5	6	7	8	9	N/A	
6.	HUMANISTIC QUALITIES Lacks appropriate integrity, respect, compassion, and empathy. Abuses trust and demonstrates unreliability. Frequently displays insensitivity and intolerance of patient's need for comfort and encouragement. Does not appreciate patient's perception of illness and preferences. Poor rapport with patients and families.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Always demonstrates integrity, respect, compassion, and empathy for pts and family members. Establishes trust. Primary concern is for the pt's welfare. Maintains credibility, demonstrates excellent rapport with pts and families and respects pt's need for information and personal preferences. Understands the role of family members in the pt's ongoing care. Considers effect of the pt's illness on the family.
7.	PROFESSIONAL ATTITUDES AND BEHAVIOR Frequently irresponsible, unreliable, and uncommitted. Ineffective communicator. Disruptive and disrespectful to other health care professionals. Shows disdain for professional colleagues. Records frequently tardy and illegible, even though complete and accurate.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Is enthusiastic, responsive, reliable, committed, cooperative and respectful. Provides effective communication. Shows regard for opinions and skills of professional colleagues. Displays initiative and provides leadership. Records are legible and timely.
8.	CONTINUING SCHOLARSHIP Satisfied with current fund of knowledge. Little evidence of reading. Not motivated to seek literature for further learning. Bored with theoretical concepts of pathophysiologic explanations.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Appropriate reference to the medical literature at conferences and in consultation notes. Constructive skepticism. Good teaching reputation. Enthused and stimulated by new comprehensions.
9.	RESEARCH Non-focused. Poorly read. Not a self-starter. Unable to generate original ideas. Does not meet deadlines and is unable to complete projects.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Always focused. Organized. Industrious, creative and insightful. Eagerly and thoroughly investigates potential research ideas. Consistently meets deadlines and is able to see projects through to completion.
10.	ELECTIVE Elective time not used wisely. Not motivated to learn. Often time unaccounted for and unavailable for ongoing activities. Poor rapport with precepting physicians and/or staff.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Plans elective time ahead and uses time wisely to supplement gaps in training. Reliably available. Highly motivated to learn. Excellent rapport with precepting physicians and/or staff.
	OVERALL COMPETENCE AS A NEPHROLOGIST	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

Comments: _____

_____

Trainee's Signature: _____

Date: _____

Return to Elaine Briley
Division of Nephrology
mailto:brileye@ecu.edu

Evaluator's Signature: _____

Date: _____

2. Semiannual Evaluation of Nephrology Fellow by Program Director

Progressive Evaluation of fellow:	November
By faculty:	May

TO BE REVIEWED DURING EVALUATION:	**Discussed:**	**Yes**	**No**	**N/A**
PATIENT CARE:				
1. Continuity clinic				
a. Review patient logs		☐	☐	
b. Is the fellow seeing a broad representation of patients including gender?		☐	☐	
c. Overall satisfaction of the fellow with clinic.		☐	☐	
d. Performance of the fellow in clinic.		☐	☐	
2. Procedures				
a. Review native and transplant biopsy logs		☐	☐	
b. Review vascath logs		☐	☐	
c. U/A		☐	☐	
d. Plasmapheresis		☐	☐	
e. Acute hemodialysis		☐	☐	
f. Overall satisfaction of the fellow with procedure performance		☐	☐	
g. Performance of the fellow in the area of procedures		☐	☐	
3. Outpatient Hemodialysis shift				
a. Reviewed numbers of hemodialysis patients followed		☐	☐	
b. Overall satisfaction of the fellow with their HD shift and supervision		☐	☐	
c. Performance of the fellow in the care of their HD shift		☐	☐	
4. Peritoneal Dialysis				
a. Review numbers of peritoneal dialysis patients followed		☐	☐	
b. Overall satisfaction of the fellow with clinic		☐	☐	
c. Performance of the fellow in PD clinic		☐	☐	
5. Transplant				
a. Reviewed numbers of transplant patients followed		☐	☐	
b. Overall satisfaction of the fellow with clinic		☐	☐	
c. Performance of the fellow in transplant clinic		☐	☐	
MEDICAL KNOWLEDGE:				
6. Inservice exam results		☐	☐	☐
7. Progress with Board Review/study		☐	☐	☐
8. Participation and Performance in conferences		☐	☐	
9. Performance in research project		☐	☐	
PRACTICE-BASED LEARNING AND IMPROVEMENT				
10. Progress with learning portfolio		☐	☐	
11. Attending HD CQI		☐	☐	
12. Utilizing fellow shift HD outcomes data to improve care of your shift		☐	☐	
13. See Continuity Clinic #1				
INTERPERSONAL SKILLS AND COMMUNICATION				
14. See Continuity Clinic #1				
15. See 360 Degree Eval #29				
16. See Outpatient Hemodialysis shift #3				
PROFESSIONALISM				
17. See Continuity Clinic #1				
18. See Outpatient Hemodialysis shift #3				
19. See Monthly Evaluations of Fellow #28				
20. See 360 Degree Eval #29				

21. See Performance in research project #9

SYSTEMS-BASED PRACTICE

22. Is fellow participating/running care plan for his/her HD shift ☐ ☐
23. See Continuity Clinic #1
24. See Outpatient Hemodialysis shift #3
25. See Monthly Evaluations of Fellow #28
26. See 360 Degree Eval #29

EVALUATIONS

27. See #1 Continuity Clinic
28. Monthly evaluations of fellow
    a. Fellow allowed to review/discuss ☐ ☐
    b. Is the fellow receiving regular feedback? ☐ ☐
    c. Are the monthly evaluations being performed face-to-face? ☐ ☐
29. 360 degree evaluations
    a. Fellow allowed to review/discuss ☐ ☐

3. Evaluation of Nephrology Fellowship Training Program

Evaluation of ECU Nephrology Fellowship Training Program 200__ – 200__ (_____)		
	Rating	Comments/Suggestions
Conferences and Lectures		
Neph Grand Rounds	☐☐☐☐☐ 1 2 3 4 5	
Journal Club	☐☐☐☐☐ 1 2 3 4 5	
Transplant Journal Club	☐☐☐☐☐ 1 2 3 4 5	
Fellows Path	☐☐☐☐☐ 1 2 3 4 5	
Renal Biopsy	☐☐☐☐☐ 1 2 3 4 5	
Case Conference	☐☐☐☐☐ 1 2 3 4 5	
Research Conference	☐☐☐☐☐ 1 2 3 4 5	
Fellows lecture series	☐☐☐☐☐ 1 2 3 4 5	
Call Schedules		
Daily/wend call	☐☐☐☐☐ 1 2 3 4 5	
Holiday call distribution	☐☐☐☐☐ 1 2 3 4 5	
Rotations		
Consults	☐☐☐☐☐ 1 2 3 4 5	
Service	☐☐☐☐☐ 1 2 3 4 5	
Outpatient	☐☐☐☐☐ 1 2 3 4 5	
Dialysis	☐☐☐☐☐ 1 2 3 4 5	
Transplant	☐☐☐☐☐ 1 2 3 4 5	
Research/ Elective	☐☐☐☐☐ 1 2 3 4 5	
1=unacceptable; 2=poor, 3=fair, 4=good, 5=excellent		

	Rating	Comments/Suggestions
Continuity clinic	☐☐☐☐☐ 1 2 3 4 5	
Transplant Clinic (acute)	☐☐☐☐☐ 1 2 3 4 5	
Transplant Clinic (chronic)	☐☐☐☐☐ 1 2 3 4 5	
PD Clinic	☐☐☐☐☐ 1 2 3 4 5	
Outpt HD Shift	☐☐☐☐☐ 1 2 3 4 5	
Other		
Orientation	☐☐☐☐☐ 1 2 3 4 5	
12mo rotation schedule	☐☐☐☐☐ 1 2 3 4 5	
Evaluation process of fellow by faculty	☐☐☐☐☐ 1 2 3 4 5	
Evaluation of faculty and program by fellow (this form)	☐☐☐☐☐ 1 2 3 4 5	
Additional comments:		
1=unacceptable; 2=poor, 3=fair, 4=good, 5=excellent		

4. Evaluation of Nephrology Faculty

Evaluation of ECU Nephrology Fellowship Training Program 200__ – 200__ (__)			
ECU Nephrology Faculty			
Badwan	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Barchman	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Bolin	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Christiano	Optional Comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Desai	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Lai	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
1=unacceptable	5=satisfactory	10=superior	
Additional Comments:			

Adjunctive Faculty (if applicable)			
Haisch	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Harland	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Morgan	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Hewan-Lowe	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Parker	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Reed	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
	Optional comments:		
Ability to teach	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Clinical Knowledge	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
Commitment to the fellowship	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10	Scholarly activities	☐☐☐☐☐☐☐☐☐☐ 1 2 3 4 5 6 7 8 9 10
1=unacceptable	5=satisfactory	10=superior	

5. Evaluation of ECU Nephrology Graduates

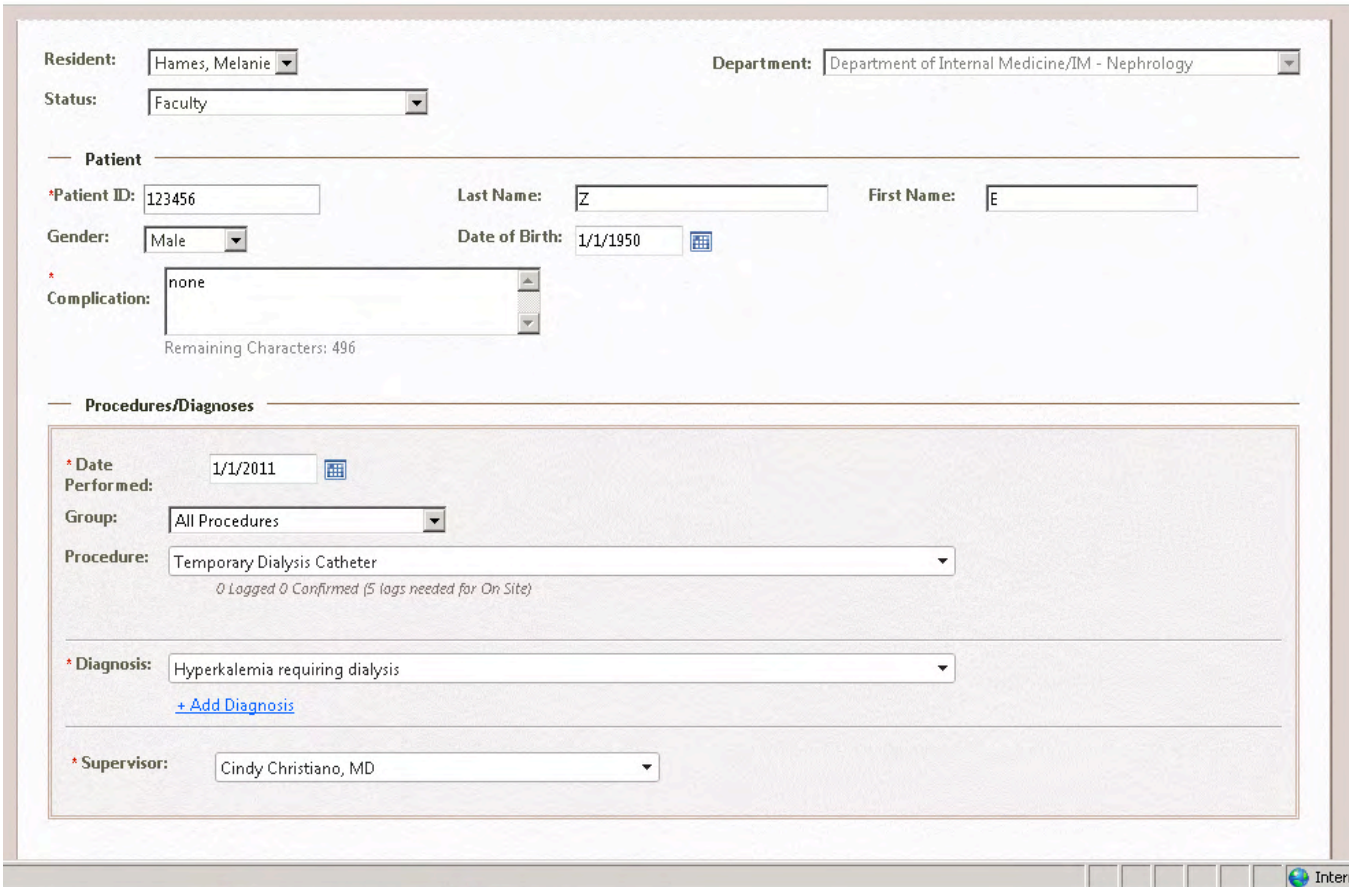
EVALUATION OF GRADUATES FROM ECU NEPHROLOGY AND HYPERTENSION TRAINING PROGRAM

<table>
<tr><td colspan="2">Name:</td><td>Date:</td></tr>
<tr><td colspan="2">Years of training:</td><td>Yrs. out of training:</td></tr>
<tr><td>Home address</td><td colspan="2">Office address:</td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td></td><td colspan="2"></td></tr>
<tr><td>City:</td><td colspan="2">City:</td></tr>
<tr><td>State/zip code:</td><td colspan="2">State/zip code:</td></tr>
<tr><td>Phone: ( )</td><td colspan="2">Phone: ( )</td></tr>
<tr><td>Email:</td><td colspan="2">Email:</td></tr>
<tr><td>State(s) of licensure</td><td colspan="2" rowspan="2">Type of practice:
○ University/academic
○ Private practice
○ Research
○ Other</td></tr>
<tr><td>Nephrology board certification:
Yes No
Year certified:</td></tr>
<tr><td colspan="3">What is your perception of the relevance of your training to your practice or current career pathway?

What are your suggestions for improving our training program?

What are your ideas for new areas that should be incorporated into our curriculum?</td></tr>
</table>

6. Procedural Log Form - New Innovations



VII. Orientation

(See PowerPoint Handout)

Manual updated 11/18/13 - mh