

NEPHROLOGY SECTION: SUNY UPSTATE MEDICAL UNIVERSITY, SYRACUSE

Fellow Curriculum

This page also includes [General Information](#) about the fellowship that should also be read.

Curriculum Summary

Overall Objectives

Nephrology is the study of renal function and dysfunction. As the kidneys play the major role in homeostasis of fluid, electrolytes, and acid-base status, derangement in a patient's renal function *may* lead to numerous systemic manifestations. The objectives of the Nephrology Fellowship are to teach trainees the in-depth principles of renal physiology and pathophysiology. Trainees who have completed their fellowship will be experts in the evaluation and care of patients with all forms of renal derangement.

In addition, trainees are expected to participate in scholarly activity during their training. This activity can be either laboratory or clinically based.

Nephrology, by its nature, is a complex and growing field that continues to change constantly. Nephrologists often function at the frontiers of scientific knowledge, requiring a delicate balance of available data, experience, pathophysiology, and judgment to make real-life decisions. We believe that a strong understanding of physiology and pathophysiology will form the basis for fellow education and continued life-long learning. The best way to achieve this goal of constant growth is to ensure that learning is self-directed and active. We expect to train fellows in methods that will allow them to become life-long learners and transition beyond the need for passive participation with didactic lectures. Some of our major goals will include helping trainees identify personal weaknesses in their education and strengthen those areas through a "learning by teaching" interaction. Developing independent, mature nephrologists capable of optimal care of patients with renal disease now and in the future will be our common goal.

Educational Content

The program content for nephrology is described in large part by the American Society of Nephrology in their special article "Nephrology Core Curriculum." This is available in hardcopy form from the Nephrology Office. It is in the packet of information given to the fellows at the beginning of their training. In addition, educational goals and objectives for each rotation and experience are listed in the specific Educational Experiences section below.

Methods of Training

The main teaching method is through an apprenticeship model. Hospitalized patients are initially evaluated independently by the fellow and attending physician. The fellow then formulates a differential diagnosis and plan. This will then be reviewed by the attending physician who may prompt the fellow to provide more information, expand the differential diagnosis, and provide alternative plans. Important aspects of the history and physical exam will be reviewed and demonstrated at the patient's bedside. Outpatients will be seen by the fellow and then presented to the attending. The attending may prompt the

fellow to provide more information, expand the differential diagnosis, and provide alternative plans. Important aspects of the history and physical examination will be reviewed and demonstrated with the patient. As the fellow gains more confidence, he/she will see the patients more independently, reviewing the patients with the attending. Outpatient dialysis patients will be seen by both the fellow and attending physician weekly. The fellow will be responsible for the day-to-day management of his/her own dialysis patients.

In addition to the apprenticeship model, there are numerous didactic sessions throughout the *year* to cover all topics in the core curriculum. These *topics* include both basic science and clinical medicine.

Ethics and professionalism are demonstrated through direct patient contact, discussion of patient care issues in various settings, and through didactic sessions.

More detailed educational methods are found with the description of each educational experience.

Evaluation of Fellows

Evaluation of the fellows is accomplished through several methods. There is a quarterly evaluation of each fellow by each faculty member. There are also evaluations twice yearly from nurses, dietitians, and social workers at the University Dialysis Unit and nurses at the University Health Care Center. Patient evaluations of the fellows takes place at University Health Care Center and at the University Dialysis Unit. There are also evaluations of the fellows' conference presentations. Fellows are reviewed at each monthly division faculty meeting and the faculty advisor is able to provide direct feedback to the advisee. See the section, [Evaluations](#) for details

Reference Materials

See the section, [Recommended Reference Texts](#) for a list.

Specific Goals and Objectives of the Nephrology Curriculum

Goal 1: Obtain clinical competence in Nephrology (*Consult Services*)

Objectives for Goal 1

1. Learn to diagnose and manage acute and chronic renal disease in the inpatient, intensive care unit, and outpatient settings.
2. Learn to diagnose and manage acute and chronic electrolyte disorders
3. Learn to diagnose and manage acute and chronic acid-base disorders
4. Learn how to determine the need for acute and chronic dialysis.
5. Learn to manage patients on acute and chronic dialysis
6. Learn to evaluate and manage transplant recipients, potential live donors, and the management of immunosuppressed patient in general.

Teaching Methods for Goal 1

1. Consultation service (see the [Consultation](#) document for more details)
2. Transplant Service (see the [Transplant](#) document for more details)
3. Acute dialysis units in the hospitals
4. Chronic Dialysis Unit (see the [University Dialysis Center](#) document for more details)
5. Continuity Clinic (see the [Clinics](#) document for more details)
6. Other specialty nephrology clinics (see the [Clinics](#) document for more details)
7. Electives

8. Conferences (see the [Conferences](#) document for more details)

Educational Materials for Goal 1

Journal articles

See the [Recommended Reference Texts](#) section

Evaluation for Goal 1

See the [Evaluation](#) section

Goal 2: Obtain the technical skills necessary to diagnose and manage renal disorders

Objectives for Goal 2

1. Learn the correct collection, performance and evaluation of urinalysis.
2. Learn the indications for and evaluations of radiologic (plain film, CT, MRI, ultrasound, angiography) and nuclear medicine studies, both for the evaluation of renal diseases and the evaluation of dialysis access.
3. Learn dialysis prescriptions for acute and chronic hemodialysis, peritoneal dialysis, and continuous renal-replacement therapies.
4. Learn adjustment of drugs for patients with renal failure.
5. Learn the prescription of diet for patients with renal failure.
6. Learn how to biopsy both native and transplanted kidneys.
7. Learn how to place acute hemodialysis catheters.
8. Learn the indications *and contraindications* for peritoneal dialysis catheter placement

Teaching Methods

1. Consultation service (see the [Consultation](#) document for more details)
2. Transplant Service (see the [Transplant](#) document for more details)
3. Acute dialysis units in the hospitals
4. Chronic Dialysis Unit (see the [University Dialysis Center](#) document for more details)
5. Continuity Clinic (see the [Clinics](#) document for more details)
6. Other specialty nephrology clinics (see the [Clinics](#) document for more details)
7. Direct faculty supervision of renal biopsies and dialysis catheter placement
8. Conferences (see the [Conferences](#) document for more details)

Educational Materials

See the [Recommended Reference Texts](#) section

Evaluation

See the [Evaluation](#) section

Goal 3: Obtain the interpersonal and communication skills to effectively involve patients, families, and other healthcare professionals in the delivery of appropriate care.

Objectives

1. Learn how to discuss renal replacement therapy (RRT) options with patients and families.
2. Learn how to discuss the risks and benefits of RRT and the related procedures
3. Learn how to discuss end-of-life issues and palliative care with patients and families
4. Learn effective communication skills with referring healthcare providers.
5. Learn effective communication skills with patient care team members including

physicians' assistants, nurse practitioners, nurses, social workers, dieticians, and dialysis technicians.

Teaching Methods

1. Consultation service (see the [Consultation](#) document for more details)
2. Transplant Service (see the [Transplant](#) document for more details)
3. Acute dialysis units in the hospitals
4. Chronic Dialysis Unit (see the [University Dialysis Center](#) document for more details)
5. Continuity Clinic (see the [Clinics](#) document for more details)
6. Other specialty nephrology clinics (see the [Clinics](#) document for more details)
7. Conferences, in particular the Dialysis and Transplant Committee meeting (see the [Conferences](#) document for more details)

Educational Materials

See the [Recommended Reference Texts](#) section

Evaluation

See the [Evaluation](#) section

Goal 4: Gain an understanding of the scientific basis for the physiology and pathophysiology of normal and abnormal renal function.

Objectives

1. Learn the topics listed in the [Physiology Conference](#) section
2. Learn the pathophysiology of systemic diseases on the kidney
3. Learn the pathophysiology of primary renal diseases and their effect on the body as a whole

Teaching Methods

1. Conferences, in particular the [Physiology Conference](#) and [Fellows' Seminar Series](#)
2. Consultation service (see the [Consultation](#) document for more details)
3. Transplant Service (see the [Transplant](#) document for more details)
4. Chronic Dialysis Unit (see the [University Dialysis Center](#) document for more details)
5. Continuity Clinic (see the [Clinics](#) document for more details)
6. Other specialty nephrology clinics (see the [Clinics](#) document for more details)

Educational Materials

Journal Articles

See the [Recommended Reference Texts](#) section

Evaluation

See the [Evaluation](#) section

Goal 5: Obtain training and experience in research topics in Nephrology.

Objectives

1. Learn basic science research methods, including their advantages and limitations
2. Learn clinical science research methods, including their advantages and limitations
3. Learn basic epidemiology and statistical methods

4. Learn how to critically review the literature for basic science discoveries and new clinical therapies

Teaching Methods

1. Direct involvement in a research project with a faculty mentor
2. Conferences, in particular Journal Club, and research-related topics in the [Fellows' Seminar Series](#) (see the [Conferences](#) document for more details). Fellows present progress of their research projects as appropriate at the Tuesday Nephrology Conference. In addition, the Department of Medicine offers conferences in research methods which the fellows are expected to attend.

Educational Materials

Journal articles

See the [Recommended Reference Texts](#) section

Evaluation

Will be done by your research mentor.

Specific Educational Experiences

[ACGME Competencies](#) This important document lists the six competencies that the ACGME feels are critical to any physician's training and continuing development. The competencies are integrated concepts. Under each are the nephrology fellowship training components that address the competency. The framework of your evaluations is based on this document.

[Consult Service](#)

[Transplant Service](#)

[University Dialysis Service](#)

[Outpatient Dialysis Curriculum](#)

[Clinics](#)

[Conference Schedule](#)

[Fellows' Seminar Series](#)

[Journal Club](#)

[Physiology Conference](#)

GENERAL INFORMATION

Rotations

There are four services that you will rotate through during your fellowship:

Consult Service A

Consult Service B

Clinics

Elective

Consult Service A

This service involves all of the consults at University Hospital that are on the floors (excluding ICU patients) and includes all inpatient transplant patients, including ICU transplant patients. An attending is assigned to this service in rotation. There is also a transplant nephrology attending who will

round on all transplant patients. In addition to nephrology rounds, this fellow is responsible for attending rounds with the transplant attending daily. Daily contact with the transplant surgery residents is of vital importance to the care of these patients. All new consults will be called either to the fellow or to a resident on the service. It is your responsibility to know about each patient on this service, including those followed by residents. If a resident is assigned to a particular consult patient, the resident initially sees that patient and discusses the consult with you prior to presentation to the attending physician. You will be dictating the initial consult note. PGY1 residents are not to dictate the initial consult notes but may write the note in the chart. The resident may write the daily notes on patients whom they are following but should discuss their findings with the fellow prior to putting the note in the chart. Important information will be communicated directly to the responsible parties in addition to being written in the chart. The attending physician should be notified of all consults at the time you are notified. All new consults will be discussed on daily rounds and seen as a team. Consult patients who are being followed by the team will be discussed in daily rounds but not necessarily seen by the team together. Initial consult notes should be signed on a daily basis, preferable the same day as the consult but certainly as soon as they are available for dictated consults.

Consult Service B

This service involves all ICU consult patients at University Hospital and all consult patients at Crouse and the Veterans Hospital. An attending is assigned to this service on rotation. You are responsible for all patients on this service, whether or not they are assigned to a resident on the service. If a resident is assigned to a particular consult patient, the resident initially sees that patient and discusses the consult with you prior to presentation to the attending physician. You will be dictating the initial consult note. PGY 1 residents will not dictate the initial consult note but may write the note in the chart. The resident may write the daily notes on patients whom they are following but should discuss their findings with the fellow prior to putting the note in the chart. Important information will be communicated directly to the responsible parties in addition to being written in the chart. The attending physician should be notified of all consults at the time you are notified. All new consults will be discussed on daily rounds but not necessarily seen as a team together. Initial consult notes should be signed on a daily basis, preferable the same day as the consult but certainly as soon as they are available for dictated consults.

Clinics

During this rotation, you will be attending multiple clinics. This is your main ambulatory nephrology experience, not including your continuity clinics. These clinics include Monday morning transplant clinic, Monday afternoon peritoneal dialysis clinic, Friday morning stone clinic, Thursday morning peritoneal dialysis clinic, and Thursday afternoon transplant clinic. Transplant clinics include pretransplant evaluations and reevaluations, post-transplant follow-up, and donor evaluations. Some transplant evaluations are held on Tuesday or Wednesday mornings and are available for you to attend. In addition to these clinics, you will be the fellow who will go to Walsh for the prisoner clinic. When you go to the prisoner clinic, cellular telephones are not permitted and pagers are inactive. In addition to the clinics that you will attend, you are the fellow on call during the week (Monday through Thursday). Clinic notes should be signed within 48 hours of the clinic and all labs ordered at the time of the clinic should be added to the note with appropriate comments, if necessary. You may also be called on an “ad hoc” basis for an outpatient evaluation of high-risk OB patients with kidney disease.

Elective

Elective months include your vacation time and research. You must let Dr Khanna and Mary Lynn know in writing at least 1 month in advance of your elective month what you plan to do. If the

faculty member who will be supervising you is a Nephrology faculty member, then the evaluation is routine. If someone outside of the Nephrology faculty will be supervising your elective, then that individual needs to assure us in advance that they are supervising you and will *be willing to* provide us with an evaluation at the end of the elective. This consent must be in writing. The following options are available for elective (some should be combined): Urology, Radiology, Pathology, Tissue typing, and Research.

You are allowed 20 days of time off during each fellowship year. These 20 days include vacation time, sick leave, and interview trips. Conferences are not included, as conferences are considered part of work. If you exceed these 20 days, you must make up the time by adding on to the end of your fellowship. You are not allowed holiday comp time. Time cards are signed on line and only Mary Lynn West can input time. You only need to sign your card. Do not change it.

Other rotations

You will be assigned a particular shift of patients at the University Dialysis Unit. This will be your shift of patients for your entire two years of fellowship. You will round once weekly with the attending physician on a day determined in advance. Attendings are also assigned to a shift, so the time and day of rounding will be through a mutual agreement between you and your attending. This rounding day should stay the same for your entire fellowship. You are excused from other duties during your time of rounding at UDC. We strongly suggest that if you are on Consult A or Consult B, you pass your pager to your colleague during the time you are at UDC for rounds. Your rounds will include seeing each of your patients, completing notes and orders needed at that time, completing justification for extra labs or medications, completing care plans monthly, and new patient notes. The majority of these notes should be entered into the dialysis unit computer system. You will also be expected to attend the monthly patient care meeting to meet with unstable patients. These care plan meetings will be scheduled during your rounding time monthly.

Continuity clinics are held weekly, either at the Veterans Hospital or at the University Health Care Clinic building. The VA clinic is held on Wednesday afternoon and the UHCC clinic is held on Wednesday morning. You will alternate these clinics weekly, so you will be paired with a second year fellow for your entire year. The VA clinic is staffed by Dr. Betcher and the UHCC clinics are staffed by either Dr. Gilbert or Dr. Knohl. Attendance at your continuity clinic takes precedence over all other clinics or duties.

Procedures

You must keep a record of the following procedures: renal biopsy (native and transplant), temporary hemodialysis access. For biopsies and temporary accesses, the tracking is now through Med Hub and you will have received instruction during orientation. You should also keep your own paper log and include indications for each procedure and complications, as the VA and Crouse are not in Med Hub.. You must also fill out the log in the Nephrology Office. The log in the Nephrology office not only contains the procedure but also the reason for the procedure, ultimate diagnosis, and any complications that occurred. The logs need to be signed by the attending who supervised that procedure. The urinalysis log is kept only in the Nephrology Office. Copies of both logs are included in the printed material handed out at the beginning of the fellowship, but the logs must be maintained in the office. In addition to procedure logs, case logs need to be kept. These case logs are for inpatient activity and clinic activity only, not UDC patients. Logs need to be kept on a monthly basis and a log sheet is included in the back of your manual.

Office

The fellows have an office for their use in CWB. This is Room 329C. The office has a computer for the fellows to use. The Department of Medicine provides you with a locker and there may be potential locker space in the new acute dialysis unit. Information about the lockers will be given to you during your orientation.

Counseling and Psychological Support

1. Your faculty advisor. This is a Nephrology faculty member who can provide advice and support, if needed. Each fellow is assigned a faculty advisor who will meet with their advisee on a regular basis. Each fellow is to meet with their advisor monthly for the first four months of the first year and then every other month thereafter. Also, you must meet with your advisor prior to presenting any conferences, including journal club presentations, to discuss the presentation. It is your responsibility to arrange the meeting with your advisor. The name of your advisor will be given to you during orientation.
2. The Fellowship Director (Dr. Khanna), and the Division Chief (Dr. Narsipur) are available for counseling and support as needed. The fellowship director will also meet with you every 6 months to review your progress and discuss any possible issues.
3. New York State Employee Assistance Program. 464-5760 (local program) or 428-5760 (regional office) provides confidential, no-cost assistance for a wide variety of problems.
 - a. Marital
 - b. Child care
 - c. Grief
 - d. Financial
 - e. Psychiatric
 - f. Chemical dependency
4. You are free to contact Dr. Knohl (core program residency director), Dr. Iannuzzi (Chairman of Medicine) or Dr. Grant (GME office) to discuss any matters you feel uncomfortable discussing within the Nephrology Section. All conversations will be kept confidential.

You **must read** the following documents regarding the Internal Medicine Residency. You are officially residents and these policies apply to you. The first document is the Resident Policy Manual; the second is the Remediation Policy. They are both reproduced in the section of the Fellows' Manual and can be found at the following web sites.

1. <http://www.upstate.edu/medicine/edu/gmecurriculum/policies.htm>
2. <http://www.upstate.edu/medicine/edu/gmecurriculum/remediationpolicy.html>

In the Resident Policy Manual, section 7, subsections 1 to 5 and 8 are supplanted by the Nephrology Policies on this page.

Residency Hour Regulations:

All residents are required to follow the New York State Residency Hour Regulations (405 Rules). These rules state that you **must not** exceed 80 hours of work per week, that you have 10 hours off between shifts, and that you have one full day off in every seven days (work week is Sunday through Saturday). You are permitted to be in the hospital for 24 hours plus 3 hours for teaching. At home call does not count into these hours. We will be monitoring these hours quarterly, as will the GME office. Any infractions of these rules can result in closure of the program and continued infractions may result in your loss of your position. A simple call sheet is included in your manual and the times for monitoring will be given to you quarterly.

Call

Night Call

Call on weeknights starts at 5 PM. The clinic fellow will be on call from Monday through Thursday each week. The majority of the call is home call and does not require you to come to the hospital. This fellow will be responsible for all new urgent consults and all emergent dialysis. However, the fellows assigned to the Consult A and Consult B services should see any patients about whom they have been notified prior to 5 PM and prior to leaving for the evening. Patients who are seen in the Emergency Room must be discussed with an attending, the consult A attending or consult B attending or the transplant attending, depending on the admission location of the patient. If you have to come in during the night, you must notify the appropriate consult attending prior to leaving home and when you leave the hospital. All out-of-time calls to the dialysis nurse on call must be cleared with an attending prior to calling the nurse. Please be sure the patient has vascular access prior to calling the nurse. Coming in at night does not violate your 405 rules, provided you stay within the 80 hours per week and 10 hours off. Initially, all consults at night should be discussed with an attending. Once you have more experience, you may be able to triage some patients yourself, but when in doubt, contact the attending. UDC calls should go to the fellow who covers that shift or to the on-call fellow or UDC attending, if needed.

Weekend Call

Weekend call generally starts about 5 PM on Friday and goes through 7 AM on Monday. The on-call team is one attending and one fellow. These persons cover the consult services at all three hospitals and the dialysis units. Rounds are not made in the outpatient dialysis units, but telephone calls may occur for problems, either to the attending or the fellow. For unanticipated discharged from the consult service, the fellow or attending will write the discharge note in the UDC chart and the orders. The summaries should be brief but should contain the information pertinent to the patient's admission and necessary follow-up. Dialysis and medication orders must be written in the UDC chart. If a patient has been hospitalized for less than 48 hours, the orders can reflect no change, i.e., resume previous dialysis and medication orders or resume previous orders with the following changes.

There is a nurse who serves as the primary call for the peritoneal dialysis patients.

It is OK to switch weekend call with another fellow. Please let Anna Mosher know about any switches before the weekend in question so that the hospital operator can be notified in a timely manner. Please note that you are **not** permitted to be on call two weekends in a row (New York State law).

Moonlighting

SUNY Upstate Medical University philosophically opposes involvement in extra-curricular professional activities (moonlighting) during graduate medical education. The Nephrology Program requires that such activities be permitted only with the express written permission of the fellowship director. All moonlighting activities are reportable and will be considered in the calculation of compliance with New York State Department of Health Code 405 and ACGME work hour limitations for medical residents. If we (the program) find that you have been in violation of the 405 regulation, you will be warned on the first offense and fired on the second. In addition, the University Hospital and the Department of Medicine may be levied heavy fines for your violation. These are serious penalties and thus we view your obligation to obey these rules seriously. If a fellow is allowed to moonlight, they are required to obtain their own malpractice coverage and obtain a New York State License.

National Meetings

National meetings are an important part of continuing education and are considered integral to your fellowship training. They will be an important source of new information when you graduate from the program. The Department of Medicine will sponsor you to attend national meetings if you are a first author who is presenting. First year fellows generally go to the spring NKF meeting while second year fellows may go the fall ASN meeting if they have something to present. If you are presenting at one of these we will accommodate changes in your schedule. You are encouraged to attend other meetings as your clinical responsibilities permit, but you will be responsible for expenses of the additional meetings.

Nephrology Division Faculty

Faculty

Sriram Narsipur, MD
 Division Chief
 Director, Transplant Nephrology
 Chronic Dialysis Program

Interest

Transplantation
 Cardiac Alterations in ESRD
 Pediatrics

Sylvia L. Betcher, PhD, MD
 Chief of Nephrology Services, VAMC

Mechanisms of tubular injury

W. Clayton Elliott, MD

Gentamicin injury

Rose A. Giammarco, MD

Acid Base disorders

John E. Leggat, Jr., MD, MPH

Transplantation
 Social issues with dialysis
 End of life issues

Kimberly Gilbert, MD, MS

Clinical Investigation

Stephen Knohl, MD
 Director, Educational Program Office
 Vice Chairman of Medicine

Chronic Kidney Disease
 Nephrolithiasis
 Genetic stone disease

Apurv Khanna, MD
 Director, Nephrology Fellowship Program

Hypertension
 CKD

Other Faculty involved in the Fellowship training

Guy Perry, PhD

Molecular genetics

Paul Shanley, MD
 Nephropathologist

Student education

Arthur Tatum, MD
 Nephropathologist

Review of nephropathology

Amy Friedman, MD Director, Transplant Surgery	Transplantation
Dilip Kittur, MD Transplant Surgery	Endothelial cell function Split kidney transplantation Hepatobiliary surgery
Thomas Welch, MD Chair of Pediatrics Pediatric Nephrologist	Glomerulonephritis Renal immunology Mineral metabolism
Scott Schurman, MD Pediatric Nephrologist	Mineral metabolism
Lawrence Shoemaker, MD Pediatric Nephrologist	
Vivian Gahtan, MD Chair of Vascular Surgery	
Michael Costanza, MD Vascular Surgeon	
Kwame Amankwah, MD Vascular Surgeon Chief, Interventional Radiology, VA	

[ACGME Competencies](#)

The ACGME has defined 6 general areas in which residents and fellows must be competent as part of their training. These areas cut across all rotations. The specific curriculum to each rotation is detailed in that rotation's document. Below are listed the 6 competencies and how the Nephrology curriculum addresses them. The ACGME text is in italics, the nephrology specific text is regular.

The residency program must require its residents to obtain competencies in the 6 areas below to the level expected of a new practitioner. Toward this end, programs must define the specific knowledge, skills, and attitudes required and provide educational experiences as needed in order for their residents to demonstrate the following:

1. *Patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.*

Knowledge

- Know treatment benefits and limitations for diseases of the kidney
- Know treatment benefits and limitations for all forms of renal replacement therapy
- Know the health problems and their treatment of patients with chronic

kidney diseases

- Know appropriate screening and preventive measures for patients with chronic kidney diseases

Skills

- Be able to discuss with patients and their families the benefits and limitations to renal therapies. In particular, be able to discuss when specific therapies are ineffective and not indicated.
- Be able to discuss end-of life issues with patients and their families
- Be able to discuss benefits and limits of renal replacement therapies to other health care providers

Attitudes

- Respect for patient autonomy
- Professional code of ethics, especially as it applies to providing artificial life support in the form of renal replacement therapy in situations that might not warrant it

Experiences

- All rotations

2. *Medical knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.*

Knowledge

- See the ASN Curriculum
- See the documents for each rotation
- See the Seminar Series topic list

Skills

- Utilize resources the resources for acquisition of new knowledge in the fields of nephrology and internal medicine
 - Textbooks
 - Journals
 - Internet
 - Professional meetings and societies
- Be able to critically read the literature
- Be able to apply new knowledge appropriately to care of the patient with renal disease

Attitudes

- Keep open mind to evolving knowledge and care of the patient with renal disease

Experiences

- All rotations
- Seminar Series
- Dialysis Topics
- Journal Club
- Physiology Conference
- Professional meetings

3. *Practice-based learning and improvement that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care.*

Knowledge

- Know the resources available to acquire new knowledge and patient management skills as it relates to the patient with renal disease
 - Textbooks
 - Journals
 - Internet
 - Professional meetings and societies

Skills

- Utilize the resources for acquisition of new knowledge
 - Textbooks
 - Journals
 - Internet
 - Professional meetings and societies
- Be able to critically read the literature
- Be able to apply new knowledge appropriately to care of the patient with renal disease
- Systematic quality review of own practice

Attitudes

- Keep open mind to the idea that ones practice may not be optimal

Experiences

- Dialysis and Transplant Committee meetings
- Dialysis patient care conferences
- Transplant protocol meetings
- Journal Club
- Professional meetings

4. *Interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.*

Knowledge

- See the ASN Curriculum
- See the documents for each rotation
- Know treatment benefits and limitations for diseases of the kidney
- Know treatment benefits and limitations for all forms of renal replacement therapy

Skills

- Effective communication with other health care professionals on clinical rotations, including nurse practitioners, nurses, dialysis technicians, social workers, and dieticians
- Effective communication with referring healthcare providers in outpatient clinics
- Effective communication with patients and families, including the ability to

not use “medicalese” when talking with them

Attitudes

- Respect for other health care providers
- Respect for patients and their families

Experiences

- All rotations
- Dialysis and Transplant Committee meeting
- Dialysis patient care meetings

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

Knowledge

- See the ASN Curriculum
- See the documents for each rotation
- See the Seminar Series list of topics

Skills

- Independence in the care of the patient with renal disease
- Ability to discuss renal diseases with patients and families in a manner that they can understand
- Appropriate behavior toward colleagues (especially referring health care providers) and support staff.
- Recognition of appropriate and inappropriate physician behavior
- Accurate and readable medical records
- Self critique to improve

Attitudes

- Respect for other health care providers
- Respect for patients and their families
- Recognition that different cultures have different views regarding health, healthcare, and artificial life support such as dialysis

Experiences

- All rotations
- Professional meetings

6. *Systems-based practice, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.*

Knowledge

- See the ASN Curriculum
- See the documents for each rotation
- See the Seminar Series list of topics
- Know what ancillary services are available for the care of patients with chronic renal disease including:
 - Social work
 - Dieticians

- Peer support groups
- Hospice

Skills

- Ability to recognize all patient needs, not just medical
- Ability to appropriately utilize ancillary services

Attitudes

- Respect for ancillary services
- Recognition that ancillary care is a major component in the care of the patient with chronic renal disease

Experiences

- All rotations
- Dialysis and Transplant Committee meetings
- Dialysis patient care meetings
- Transplant protocol meetings

Consult Services

Educational Goals

1. Obtain the knowledge and skills to diagnose and manage acute electrolyte and acid-base disturbances in the inpatient and intensive care unit settings
2. Obtain the knowledge and skills to diagnose and manage acute renal failure in the inpatient and intensive care unit settings
3. Obtain the knowledge and skills to manage patients with chronic renal failure admitted in the inpatient and intensive care unit settings

Objectives for 1st year fellows

1. Learn the appropriate history and physical of the patient with acute renal failure
2. Learn basic differential diagnosis of acute renal failure
3. Learn the pathophysiology and management of acute renal failure
4. Learn basic acid-base disturbances and management
5. Learn basic fluid and electrolyte disturbances and management
6. Learn the pharmacology related to patients with acute and chronic renal failure
7. Learn the management of medical and surgical problems related to the chronic dialysis patient
8. Learn the risks, benefits and indications for the various forms of acute renal replacement therapy (HD, PD, CVVH)
9. Learn basic acute hemodialysis prescription
10. Learn basic continuous renal replacement therapy prescription
11. Learn about preoperative, perioperative, and postoperative transplant management and complications.

12. Learn modification of the chronic hemodialysis prescription for ESRD patients admitted to the hospital
13. Learn about renal disorders in pregnancy
14. Learn about renal function testing
15. Learn urinalysis
16. Learn central venous catheterization for acute hemodialysis access
17. Learn renal biopsy techniques for native and transplant kidneys
18. Learn normal and abnormal renal histology
19. Learn communication skills with the primary team and other consultants
20. Learn communication skills with the chronic dialysis unit regarding patients admitted to the hospital
21. Learn communication skills with the patients and families
22. Learn the ethical issues of renal replacement therapy
23. Learn the social and economic impact of the various renal replacement therapy

Objectives for 2nd Year fellows

In addition to skills learned in the first year:

1. Learn more complete differential diagnosis of acute renal failure
2. Learn more complete acid-base disturbances and management
3. Learn more complete electrolyte disturbances and management
4. Learn to write acute hemodialysis prescription without attending assistance
5. Learn to write continuous renal replacement therapy without attending assistance
6. Refine central venous catheter placement and biopsy techniques
7. Learn to write modification of the chronic hemodialysis prescription for ESRD patients admitted to the hospital without attending assistance
8. Develop additional expertise in transplant patient management.

Educational methods

1. Direct patient care with discussion of the case with an attending (see “Responsibilities” below for details on the interaction)
2. Review of biopsies with a renal pathologist
3. Dialysis and Transplant Committee meeting (see [Conferences](#) for details)
4. Nephrology Fellow Seminar series (see [Fellows' Seminar Series](#) for details)
5. Nephrology Conference (Tuesday) (see [Conferences](#) for details)
6. Journal Club (Wednesday) (see [Conferences](#) for details)
7. Nephrology Case Conference (Thursday) (see [Conferences](#) for details)

8. Chief's study group (monthly)

Evaluation

See the [Evaluation](#) section

Responsibilities

1. The consult service has been divided into two parts. Consult A will see patients with renal issues at University Hospital who are on the floors and inpatient transplant patients, including ICU transplant patients. Consult B will see the ICU renal patients at University Hospital and consults at Crouse and the VA. The Consult B fellow will also see any outpatient hemodialysis patients at the VA.
2. Rounds are to be held daily with the attendings. All new consult patients, patients in the ICU, and other patients as needed should be seen on rounds. All patients should be discussed on rounds, although not all need to be seen as a team.

For 1st year fellows, initially, all patients and decisions on patient care must be reviewed with the attending prior to making recommendations to the primary team. All emergent and urgent consults are immediately discussed with the attending. Other consultations are discussed with the attending during work rounds. As the year progresses, recommendations regarding basic nephrologic care can be made by the fellow before discussing them with the attending, but they must be discussed with the attending soon after being made. The attending is ultimately responsible for all recommendations to the primary team, although the fellow and residents should be the ones leading the discussions on rounds.

For 2nd year fellows, initially, recommendations regarding basic nephrologic care can be made by the fellow before discussing them with the attending, but they must be discussed with the attending soon after being made as the attending has the ultimate responsibility for all recommendations. Later, the fellow can make more in-depth recommendations, but again they must be discussed with the attending soon after being made as the attending has the ultimate responsibility for all recommendations. All emergent and urgent consults are immediately discussed with the attending. Other consultations are discussed with the attending during work rounds. Again, the attending is ultimately responsible for all recommendations to the primary team, although the fellow and residents should be the ones leading the discussions on rounds.

3. New consults are generally called to one of the residents on the consult services. He/She will contact the fellow, who will then assign the patients to the team members. For patients who may require urgent dialysis, the fellow will be responsible for *that* assessment.
4. It is the responsibility of the fellow to assure that the primary team calling the consult has documented the request and the reason for the request prior to seeing the patient. Documentation can be either in the progress notes or in the orders. At the Veterans Hospital, an inpatient renal consult *or ER consult* must be placed prior to seeing the patient.
5. The fellow is responsible for accurate collecting and reporting of all data on all patients under the fellow's direct care.
6. The fellow is responsible for in-depth knowledge of all patients followed by the residents and medical students.
7. The fellow is responsible for informing the dialysis nurses in a timely manner of all patients requiring and potentially requiring dialysis. In general, this should be done on a regular basis the day prior to the dialysis need on patients already followed by the consult team.
8. For patients in the ICU requiring dialysis, the fellow will assess these patients first thing in the morning to determine the dialysis need. *The dialysis unit opens at 6 AM, so the patients should be*

triaged prior to 0630.

9. Only the fellow or attending is permitted to write renal replacement therapy orders (HD, PD, or CVVH). These orders should be discussed with the residents and students for teaching purposes, but they are not permitted to write those orders.
10. The appropriate consult fellow should be notified of all patients from UDC who are sent to an emergency room. All patients on dialysis should be seen by the consult service.
11. For all UDC patients (Syracuse and satellites), the fellow will write a discharge summary note in the UDC chart with documentation of the results of pertinent tests and the necessary follow-up plans. These summaries should be brief, but convey the important information. For patients staying longer than 1 week, a brief interim progress note should be entered in the UDC chart. This should be done weekly and should include the relevant events and results of that week. These notes can be entered directly into the UDC computer system. Access to the UDC computer system is available in the University Hospital acute dialysis unit via internet with passwords obtained from the UDC administrator.

Dialysis and medication orders must also be written in the UDC chart. For patients staying less than 48 hours in the hospital, only medication and dialysis changes need to be ordered. For patients staying longer than 48 hours, complete outpatient orders must be written and should include medications, dialysis prescription, diet and other needed orders. These notes and orders should be written prior to the patient's discharge, including anticipated weekend and holiday discharges, so that the health care team at UDC will be aware of any changes. For unanticipated patient discharges during any weekend or holiday, the fellow on call is expected to write the orders and discharge note in the UDC chart. *Orders for dialysis must be received prior to the outpatient unit being able to initiate dialysis on discharged patients.*

Inpatient Transplant Patients

Educational goals

1. Obtain clinical expertise in evaluating potential recipients (deceased donor and living donor) for kidney transplantation
2. Obtain clinical expertise in evaluating and managing patients in the immediate and long-term post-transplant period.

Objectives for 1st year fellows:

1. Learn history and physical of the renal transplant patient
2. Learn the components of the evaluation of potential kidney recipients and donors including risks and benefits and outcomes.
3. Learn the perioperative management of the acutely transplanted patient
4. Learn about complications, both infectious and noninfectious, in the chronic transplant patient
5. Learn basics about the pharmacology, proper use, risks and benefits of immunosuppressive medications and drug interactions.
6. Learn basic transplant immunology and patterns of allograft rejection.
7. Learn biopsy techniques of transplanted kidneys
8. Learn economic issues of transplantation

9. Learn ethical issues of transplantation
10. Learn psychosocial issues of transplantation
11. Learn communication with referring nephrologists and with the surgical transplant team

Objectives for 2nd year fellows:

In addition to skills learned in the first year:

1. Learn to adjust and change immunosuppressive medications
2. Refine biopsy techniques of transplanted kidneys

Educational methods

1. Direct patient care with discussion of the case with the transplant attending (see “Responsibilities” below for details on the interaction)
2. Review of biopsies directly with a renal pathologist
3. Dialysis and Transplant Committee meeting - fellows present and discuss patient care issues (see [Conferences](#) for details)
4. Nephrology Fellow Seminar series (see [Fellows’ Seminar Series](#) for details)
5. Nephrology Conference (3rd Tuesday of each month is a transplant topic) (see [Conferences](#) for details)
6. Journal Club (see [Conferences](#) for details)

Evaluation

See the [Evaluation](#) section

Responsibilities

1. The Consult A fellow acts as a consultant for the transplant patients on other services. For patients on the Transplant Surgery Service, the fellow will round with the Transplant Nephrologist and Transplant Surgeon every weekday morning
2. For 1st year fellows, initially, all patients and decisions on patient care must be reviewed with the attending prior to making recommendations to the transplant surgery team. All emergent and urgent consults on transplant patients should be immediately discussed with the Transplant Nephrologist. As the year progresses, recommendations regarding basic transplant care can be made by the fellow before discussing them with the attending, but they must be discussed with the attending soon after being made as the attending has the ultimate responsibility for all recommendations.

For 2nd year fellows, initially, recommendations regarding basic transplant care can be made by the fellow before discussing them with the attending, but they must be discussed with the attending soon after being made as the attending has the ultimate responsibility for all recommendations. Later, the fellow can make more in-depth recommendations, but again they must be discussed with the attending soon after being made as the attending has the ultimate responsibility for all recommendations. All emergent and urgent consults should be immediately discussed with the attending. Other consultations are discussed with the attending during work rounds.

For information regarding outpatient transplant patients, please see the clinic section.

University Dialysis Center:

Educational Goals

1. Obtain clinical expertise in managing chronic dialysis, including the limitations of the dialysis unit and the documentations needed for these patients.
2. Obtain clinical expertise in managing the medical issues of patients on chronic dialysis

Objectives for 1st year fellows: the following should be the focus of the first year.

In addition to the ASN Core Curriculum, see both the ISPD Recommended Peritoneal Dialysis Curriculum for Nephrology Trainees (hard copy in the packet given to you at the beginning of the year), and the [Outpatient Dialysis Curriculum](#). All topics on the Outpatient Dialysis Curriculum will need to be covered by the end of your training.

1. Learn how to write chronic hemodialysis prescriptions
2. Learn the mechanisms of dialysis and be able to adjust the prescription in response to acute events or changes in the patient's medical condition
3. Learn to monitor and manage vascular access for chronic hemodialysis patients
4. Learn anemia management
5. Learn calcium and phosphate management
6. Learn hypertension management in the chronic dialysis patient
7. Learn basic general medical care of the chronic dialysis patient
8. Learn social issues in the chronic dialysis patient
9. Learn dietary management of the chronic dialysis patient
10. Learn communication with the inpatient teams when a chronic dialysis patient is sent to the emergency department

Objectives for 2nd Year fellows: the following should be the focus of the second year.

In addition to skills learned in the first year:

1. Learn to write dialysis prescriptions without the assistance of the attending
2. Learn to manage all the general medical care of the chronic dialysis patient
3. Learn the physical functioning of the dialysis unit including water treatment, filter reuse, and business practices

Educational methods

1. Direct patient care with discussion of the case with the assigned attending. This will take place in the setting of teaching rounds held at least once a week on each hemodialysis patient shift, and in many other direct interactions (see the "Responsibilities" below for details on the interaction)
2. Dialysis and Transplant Committee Meeting (see [Conferences](#) for details)

3. Monthly patient care plan review (Multidisciplinary meetings with unstable dialysis patients to discuss issues. Participants include nephrologists, nurse practitioners, physicians' assistants, nurses, social workers, and dietitians). These meetings with patients will occur during regular rounds.
4. Nephrology Fellow Seminar series (see [Fellows' Seminar Series](#) for details)
5. Nephrology Conference (see [Conferences](#) for details)

Evaluation

See the [Evaluation](#) section

Responsibilities

1. Each fellow is assigned a specific shift of dialysis patients. Each fellow is required to round on his/her shift weekly with the assigned attending. The day of rounding is set at the beginning of the year and should not change. The fellow is responsible for overseeing all of his/her patients hemodialysis regimen, including laboratory values, calcium-phosphorus management, anemia management, short-term care plans, estimated dry weights, and all medications. These patients are your primary patients and will remain so throughout your fellowship.
2. Peritoneal dialysis patients are seen by the clinic fellow on Monday afternoon and Thursday mornings. The fellow should see these patients with an attending or discuss all patients with the attending.
3. The fellow to whom the shift is assigned will be contacted for problems regarding his/her patients. This includes vascular access problems, abnormal laboratory values, or acute issues, particularly those that involve an emergency room referral or an admission. The fellow is responsible for contacting the appropriate attending regarding the patient.
4. The fellow is responsible for placing a note in the UDC computer system monthly regarding any problems that have occurred. All patients deemed unstable need a note monthly documenting the reasons and plan for improvement. Unstable patient rounds will occur monthly and include the fellow, the attending, the nurse manager, dietitian, and social worker. All patients will be rounded on by the multidisciplinary team twice yearly, in November and May.
5. The fellow is responsible for all notes in the UDC chart, preferably in the computer, regarding the care of his/her patients.
6. Topics listed in the Outpatient Dialysis Curriculum will be covered by fellows during the Tuesday afternoon conferences at specified intervals.

UDC patients admitted to the hospital

1. Each fellow should know the disposition of all of his/her patients referred to the ER.
2. When a UDC patient is sent to the ER, a note should be placed in the UDC chart documenting the reason for the ER transfer. This note is the responsibility of the fellow, attending, or physician-extender, but should be written by the fellow if he/she sends the patient to the ER.
3. The UDC fellow should contact the appropriate consult fellow for any patient sent to the ER. This will assure that UDC patients receive continuity of nephrology care.
4. Each fellow is responsible for in-depth knowledge of his/her UDC-Syracuse patients admitted to the hospital. The UDC fellow should have daily contact with the consult teams to follow the

course of UDC patients admitted to the hospital. The appropriate consult fellow should write a discharge summary note in the UDC chart with documentation of the results of pertinent tests and the necessary follow-up plans, but the UDC fellow should be aware of these as well at the time of discharge. Dialysis and medication orders must also be written in the UDC chart, again by the appropriate consult fellow. For patients staying less than 48 hours in the hospital, only medication and dialysis changes need to be ordered. For patients staying longer than 48 hours, complete outpatient orders must be written. Discharge notes and orders must be written prior to the patient's first UDC visit following discharge.

Outpatient Dialysis Curriculum

The following topics should be covered with each fellow during the course of their fellowship. Fellows should keep the list and know which topics have not previously covered.

General

- Orientation to the MIS computer system, charts, and personnel at UDC. *(This will be done at UDC)*
- Options for renal replacement therapy including risks and benefits of each
- Appropriate referral for transplantation
- End-of-life issues
- Pharmacology related to chronic dialysis patients
- Nutrition
- The business and management of a dialysis unit - field trip to business office and administrator
- Government agencies and Non-Governmental Organizations overseeing chronic dialysis
CMS (Centers for Medicare & Medicaid Services, formerly HCFA), USRDS, ASN, NKF, RPA

Hemodialysis:

- Indications for dialysis
- Chronic HD prescription
- Acute HD prescription
- Common complications (hypotension, cramping, etc.)
- Principles of dialysis
- Equipment/dialyzers
- Access
- Adequacy measurements; Kt/V
- Anti-coagulation
- The water treatment system

Peritoneal Dialysis

- Prescription
- Peritonitis and tunnel infections
- Equipment
- Adequacy/PET test
- Other complications including mechanical and peritoneal damage (non-infectious)

Problems associated with ESRD

Anemia
Bone disease
Infections
Hypertension
Cardiovascular disease
Diabetes management
Rehabilitation

Clinics

Educational Goal

1. Obtain clinical expertise in diagnosing and managing patients with renal disease in the outpatient setting

Objectives

1. Learn the evaluation and management of various nephrologic diseases in the outpatient setting
 - Primary glomerulopathies
 - Glomerulopathy associated with systemic diseases
 - Hypertension
 - Fluid and electrolyte disorders
 - Pre-dialysis planning
 - Nephrolithiasis
 - Pediatrics
 - Transplantation
 - High-Risk Pregnancy
2. Learn the indications for, risks and benefits of, and the proper technique for renal biopsies
3. Learn the pathophysiology of the above diseases
4. Learn normal and abnormal renal histology
5. Learn the social and economic impact of treating patients with renal disease

Educational methods

1. Direct patient care with discussion of the case with an attending (see “Responsibilities” below for details on the interaction)
2. Review of biopsies with a renal pathologist
3. Nephrology Fellow Seminar series (see [Fellows’ Seminar Series](#) for details)
4. Nephrology Conference (see [Conferences](#) for details)

Evaluation

See the [Evaluation](#) section

Responsibilities

All clinics run essentially in the same manner. The following applies to all of them.

1. The clinic schedule for the year is given to you at the beginning of each year.

2. You will have your own continuity clinic each week. This clinic will alternate between the Veterans Hospital on Monday morning and the University Health Care Clinic, Firm C, on Wednesday morning. Patients seen initially by you in consult in the hospital will be seen in your clinic. Patients referred from other general or subspecialty clinics at Upstate are assigned to you on a rotating basis by the scheduling clerk.
3. In general, all calls about patients in the continuity clinic should go first to the fellow who follows that patient.
4. In other clinics, you will see patients assigned to you by the attending in that clinic. In addition, you should see return patients whom you have seen previously.
5. If a patient you have seen needs a biopsy, you will schedule and perform the biopsy under the supervision of the attending.
6. All patients must be presented to an attending. The attending will also see the patient and either observe you with the patient or repeat critical components of the history and physical examination. This is to occur with all clinics.
7. When dictating notes in the clinics, it is important to note which attending saw that patient with you. It is also important to append the labs that you order when you edit your notes for patients at UHCC.
8. It is your responsibility to cancel your own clinics and to verify the cancellation. You will also need to notify the appropriate attending if you are not going to be here. Please cancel your clinics as soon as possible and the earlier the better. The clinic can always be opened back up but late cancellations are difficult.

Specific Clinics

Fellows on their clinic rotation are to attend the Transplant clinics, peritoneal dialysis clinics, prisoner clinic, and Stone clinic.

Continuity clinic

Held at the VA and UHCC. You will have a clinic at both locations, attending one or the other on alternate weeks. Patients will present with a diverse collection of adult general nephrology diseases. You are the primary nephrologist for these patients. The attendings are from the Nephrology Division. Notes from each clinic should be completed no more than 48 hours after clinic.

General Nephrology Clinic

These clinics are held at UHCC. The patient population is similar to that of your continuity clinic, but the attending is the primary nephrologist. You are not assigned to this clinic, but may have the opportunity to see patients with interesting diseases.

Transplant Clinic

This clinic is held on 2 West of University Hospital. The patient population is primarily post-transplant (kidney, kidney-pancreas, or pancreas). Patients range from immediately post-transplant to years post-transplant. The primary nephrologist may not be from SUNY Upstate Medical University. The supervising attendings are from the Nephrology Division and Transplant Surgery.

Peritoneal Dialysis Clinic

This clinic is held at the University Dialysis Center on Monday afternoon and Thursday morning. The clinic fellow should see as many of the patients scheduled during that time as possible. The patients are discussed with the attending for peritoneal dialysis.

Transplant Evaluation Clinic

This clinic is held on 2 West of University Hospital. These are patients who are referred for kidney transplant evaluation. Patients include both potential recipients and donors. The clinic is multidisciplinary with the patient remaining in a room and the transplant team rotating through to complete the evaluation (medical, surgical, social, and financial). The supervising attendings are the Transplant Nephrologist and a Transplant Surgeon.

Prisoner Clinic

The main prisoner clinic is held at Walsh Prison facility, about a 45 minute drive from Upstate. The clinic is held about every 6 weeks and patients are brought to this facility for evaluation and treatment. The clinic fellow, along with an attending (Drs. Knohl, Narsipur, or Leggat), will travel to Walsh for the clinic. You are requested to not bring anything other than lunch. Cellular telephones are not permitted and pagers are usually inactive. All other equipment will be supplied. You cannot take any glass, hard plastic, or potential weapons in with you. This clinic lasts the entire day. In addition to the state prisoners seen at Walsh, a county or city prisoner may need to be seen on occasion. These patients are seen at University Hospital on Thursday morning. The elective fellow will see these prisoners and discuss them with the Consult A attending.

Stone clinic

This clinic is held at UHCC – Firm C on Friday Morning. Patients will have had recurrent stone disease. The patients will be evaluated for renal stone risk and for treatment of the stone risk and alterations related to stone risk. Dr. Knohl is the attending.

Conference Schedule

Tuesday 4:00 - 5:00 pm - Nephrology conference: didactic lectures given by nephrology and non-nephrology faculty, and fellows. Once per month there is a biopsy case conference. Once per month a fellow will make the presentation at the conference. The Nephrology conferences are held in Room 9405A East Tower at University Hospital. During the summer, these are supplanted by the Nephrology Fellow Seminar Series, which introduce the fellows to basic nephrology issues. Attendance is required. Conference will not start until all fellows are present or otherwise accounted for, e.g. on vacation or attending to a patient emergency.

Tuesday 5:00 - 6:00 pm - Nephrology Fellow Seminar Series (during the summer and fall): this will introduce the fellows to basic Nephrology issues. Attendance is required. Conference will not start until all fellows are present or otherwise accounted for, e.g. on vacation or attending to a patient emergency.

Wednesday 4:00 - 5:00 pm - Journal Club: Presentation of an article from the recent literature by a fellow or attending. Once per month, from August through May, Journal Club is replaced with a [Physiology Conference](#) given by a fellow. Attendance is required. Conference will not start until all fellows are present or accounted for, e.g. on vacation or attending to a patient emergency. A statistics and research methods seminar series will also be included in at this time and given by two of the Nephrology attendings throughout the year.

Thursday 7:15 - 7:45 am - Medicine Grand Rounds. Attendance is encouraged.

Thursday 12:00 - 1:00 pm - Nephrology Case conference: Case presentations of one or two patients to generate discussion about pathophysiology, prognosis, and management. Attendance is required for all fellows. Conference will not start until all fellows are present or otherwise accounted for, e.g. on vacation or attending to a patient emergency.

Friday 8:30 - 9:00 am - Dialysis and Transplant Committee meeting: Held weekly throughout the year. Multidisciplinary meeting to discuss active patient care issues for in and out-patient nephrology and transplant patients. This is detailed below. Fellows present the patients on their service. Fellows also present patients seen in clinic who will soon need renal replacement therapy. A significant proportion of this meeting is spent on social issues of the patients discussed. Attendance is encouraged for all fellows but required for the consult fellows.

Agenda:

- Nephrology Consult A Service – presented by Consult A fellow
- Nephrology Consult B Service – presented by the Consult B fellow
- Transplant Patients – presented by the Consult A fellow
- University Dialysis Service – Syracuse patients presented by fellows or attendings;
Satellite patients presented by Satellite attending (*if available*)
- Upcoming scheduled surgeries – presented by Transplant Surgery attending and/or
Vascular surgery service nurse practitioner
- Other outpatient issues – presented by appropriate attendings and fellows
- Upstate Medical University transplant list – problems and status discussed
- New patient presentations – by appropriate attendings and fellows

Roster of attendees:

- Nephrology faculty, fellows and physician-extenders (NPs and PAs);
- Transplant surgeons and nurse-practitioners;
- Representatives of Vascular Surgery
- Nephrology and surgery office staff (for minutes and scheduling issues);
- University Dialysis Center:
 - nursing administrator
 - coordinators for hemodialysis and peritoneal dialysis
 - dietitian
 - social worker
- University Hospital social worker
- Representatives of tissue typing laboratory

Fellows are responsible for:

Attendance at conferences as noted above.

Presenting one Nephrology Conference every four months. Please see the printed yearly nephrology schedule for your assigned months. All conferences should be discussed with your advisor prior to presentation.

Presenting one Journal Club every four months. All presentations should be discussed with your advisor prior to your presentation.

Presenting one Physiology Conference every four months. See the Physiology Conference sheet for details. All presentations should be discussed with your advisor prior to your presentation.

Fellows' Seminar Series

Educational Goals

Obtain background knowledge in the major topics in nephrology

Educational objectives

Learn the nephrology and related topics listed below

Educational methods

Didactic lecture given by nephrology and other faculty. These are given every Tuesday and Thursday afternoon in July and August, and continuing on Thursday afternoons in the fall.

Evaluation

Fellows are not evaluated as only the faculty gives these lectures

Responsibility

Attend the lectures.

All conferences given should have the power-point presentation E-mailed to Mary Lynn West within 24 hours of the presentation.

Content

The following is a list of the seminar topics. The bulk will be covered in the first 3 months, the remainder over the rest of the year. Several will be covered in more than one lecture. You will receive a schedule with the faculty member giving each lecture.

- Basic hemodialysis
- Basic peritoneal dialysis
- Acute renal failure
- Chronic renal failure
- Nephrotic syndrome
- Glomerulonephritis/vasculitis
- Acid-base disturbances
- Disorders of Na balance
- Disorders of K balance
- Transplantation
- Nutrition and Renal disease
- Renal osteodystrophy
- Secondary hypertension
- Drugs and renal disease
- Nephrolithiasis
- Renal imaging (ultrasound)
- Pediatrics
- Genetic and inherited diseases
- Geriatric nephrology
- Renal disorders of pregnancy
- Withdrawal of dialysis/End-of-life
- Bioethics

Economics of dialysis
Psychosocial issues of ESRD
Renal procedures and informed consent, to cover:
 principles of informed consent
 specific risks and benefits of:
 kidney biopsy
 hemodialysis
 peritoneal dialysis
 placement of vascular catheters
 logistics of arrangements of these procedures
Epidemiology and Biostatistics
Clinical research methods
Laboratory research methods

Journal Club

Educational Goals

1. Obtain skills to evaluate basic and clinical science literature critically
2. Obtain basic understanding of basic and clinical science methodology and research design
3. Obtain basic understanding of statistical methods

Educational Objectives

1. Learn methods used in current basic science research
2. Learn methods used in current clinical science research
3. Learn methods used in current epidemiologic research
4. Learn basic statistical methods along with their proper use
5. Learn to identify the relevance of new information presented

Educational methods

1. Independent review of the literature on the topic related to the article (for the fellow presenting)
2. Discussion of topic with attending prior to Journal Club (for the fellow presenting)
3. Interactive discussion with faculty, fellows and residents of the article during Journal Club (for all fellows)
4. All power-point presentations should be E-mailed to Mary Lynn West within 24 hours of the presentation.

Evaluation

See the [Evaluation](#) section

Responsibilities for the fellow presenting

You should choose an article from recent literature. The article does not need to be a nephrologic topic, but the topic should have some relevance to nephrology. A background review of the topic should also be presented. The focus of the article presentation should be a critical review of the

methods, analyses, and conclusions. You are encouraged, although not required, to ask a faculty member for assistance in preparing your presentation. Leave adequate time for a general discussion and critique from the audience at the end (and during) your presentation.

Physiology Conference

Educational Goals

Obtain adequate background in renal physiology

Educational Objectives

Learn the normal physiology of the kidney and its regulation of homeostasis

Educational methods

5. Didactic lecture
6. Discussion of topic with attending (for the fellow presenting)

Evaluation

See the [Evaluation](#) section

Responsibility

1. Once per month, from August through May, a physiology lecture is given by a fellow in place of the Wednesday afternoon Journal Club. The master schedule for the year indicates when each fellow is responsible for the month's conference.
2. The topic should be one not previously covered in the topic cycle. The cycle from the list below lasts 2 years, so each fellow will have the opportunity to be exposed to all topics.
3. All talks must have a faculty supervisor. It is best to identify a faculty member with an interest/expertise in the topic. This may not necessarily be a member of the nephrology faculty. You also need to have discussed your presentation with your advisor prior to the presentation.

Topic List (presented in 2009-2010)*

Glomerular filtration

Autoregulation of renal blood flow

Overview of epithelial transport processes

Proximal tubular transport

 sodium-coupled transport mechanisms

 glomerulotubular balance

Regulation of water metabolism

 vasopressin release and action

 medullary osmolality

Regulation of sodium balance

Regulation of potassium balance

Regulation of calcium balance

 hormonal regulation

 epithelial transport mechanisms

Regulation of phosphorus balance

 cellular events, mechanisms and regulation of transport

Regulation of magnesium balance

Proximal tubular urinary acidification
 bicarbonate reabsorption
 ammonia generation
Distal tubular acidification
 proton excretion
Renal regulation of blood pressure
Hormones and the kidney
Renal secretion of organic solutes and drugs
Renal physiology in pregnancy
Abnormal physiology of urinary tract obstruction
Pathophysiology of edema formation
Physiology of diuretic action
Immunobiology of transplantation

Evaluations

The role of the evaluations is to provide you with an assessment of how you are doing. These evaluations will be discussed with you at the regular meetings with your faculty advisor. The evaluation process also permits you to evaluate the faculty and the program so that we can continue to improve the Nephrology training program. A copy of your evaluations is kept in your file in the nephrology office. You are free to look at them whenever you wish. Evaluations are done via E-value on a quarterly basis with all fellows evaluating each faculty member with whom they have worked and each faculty member evaluating each fellow with whom they have worked. In addition to faculty, evaluations are done twice yearly by nurses, dietitians, and social workers at the University Dialysis Center and nurses at the University Health Care Center. Patient evaluations will also be done twice yearly at the University Health Care Center and the University Dialysis Center. You will also have twice yearly meetings with the fellowship director who will provide you with specific information regarding your progress and discuss your evaluations with you. There will also be an inservice examination to determine your progress.

Formal evaluations

Fellow

Each faculty member with whom you have worked will evaluate you quarterly.

Physiology conference

The faculty will evaluate each physiology conference that you give. Informal feedback will be given through interaction with your topic advisor. The formal feedback will come from your advisor or the fellowship director.

Journal Club

The faculty will evaluate each journal club that you give. Feedback will be given by your advisor or the fellowship director.

Faculty

You are to evaluate each faculty member with whom you have worked. These evaluations are important to continue to improve the program.

Program

Every year, you will be asked to evaluate the program formally. This meeting takes place in the Spring.

Other evaluations

Meetings with advisor – these will be held with your advisor each month for the first four months, then every two months after that. He or she will discuss your evaluations in general, including discussions held at the Division meeting (see below). You can also discuss with your advisor any critiques, good or bad, about the program. The advisor will record the content of this meeting.

Division meeting – at the regular Division meetings, the faculty discuss how each of the fellows is doing. This permits faculty members who have interacted infrequently with you on a weekend or in clinics to provide some evaluation. Minutes of this meeting are taken and maintained.

Group meetings of all the fellows with Dr. Khanna– these are held monthly. They allow you to evaluate the program in a less formal structure, and the group setting may prompt critique you otherwise might have forgotten. Minutes of this meeting are taken and maintained. There will also be yearly meetings with the Chief, Dr. Narsipur, and exit interviews at the end of fellowship.

Recommended Reference Texts

The two books most recommended for reference are Brady's and Kokko's. The Up-To-Date website is an excellent computer-based reference. These references can be found in the Medical School Library as well as in the various offices in the division, including faculty offices. Up-To-Date is available through the library website for use. A number of these texts are also available in the conference room/library at the University Dialysis Center.

Comprehensive Clinical Nephrology

edited by Floege, Johnson and Feehally

NephSAP accessed through www.asn-online.org, publications section. Arched issues have explanations to questions additionally

Therapy in Nephrology and Hypertension: A Companion to Brenner and Rector's "The Kidney"

edited by Hugh Brady and Christopher Wilcox

Fluids and Electrolytes edited by Juha P. Kokko, Richard L. Tannen.

An excellent, readable text

The Principles and Practice of Nephrology edited by Harry Jacobson, Gary E. Striker, Saulo Klahr.

An excellent text that is out-of-print but available in the library or by asking one of the attendings.

Primer in Kidney Diseases edited by A Greenberg

Massry & Glassock's Textbook of Nephrology edited by Shaul G. Massry, Richard J. Glassock.

The Kidney Brenner and Rector

A comprehensive text, though its detail makes it an effort to read. Not the best reference

for practical nephrology, but useful for the science. Available on-line through MD Consult, which can be accessed through the Upstate library link at <http://home.mdconsult.com/groups/suny1285.html>

Replacement of Renal Function by Dialysis edited by C. Jacobs [et al.].

A readable, complete reference on dialysis

Dialysis Therapy edited by A. Nissenson and R. Fine – now in 4th Edition

A concise and excellent text on dialysis (Dr. MacDougall has a copy)

Principles and Practice of Dialysis William L. Henrich (Editor)

A readable text on dialysis, not available in the library but ask the attendings

Primer on Transplantation edited by D. Norman and L. Turka

An excellent basic reference for all solid organ transplantation. Includes general issues relevant to all transplantation along with organ-specific information. Not available in the library but ask the attendings.

Clinical Physiology of Acid-Base and Electrolyte Disorders B. D. Rose

A very readable text; there are more detailed texts but this is a good starting point

Pathophysiology of Renal Disease B. D. Rose

A very readable text; there are more detailed texts but this is a good starting point

Up-To-Date B. D. Rose

This CD and website supplants the two Rose books above. It truly is up to date compared to standard textbooks. It is designed with the practicing nephrologist in mind. Originally, it was only for nephrologists but now covers most, if not all of internal medicine. It is available on-line through the library website.

The Kidney: Physiology and Pathophysiology edited by D. Seldin and G Giebisch

An excellent reference for renal physiology. A good starting point for the physiology talks

Handbook of Dialysis edited by J. Daudirdas and T. Ing

A nice, quick, pocket reference to dialysis. It does not supplant the above dialysis texts.

Handbook of Kidney Transplantation edited by G. Danovitch

A nice, quick, pocket reference to renal transplantation. It does not supplant the above transplant text.

Comprehensive Clinical Nephrology, (3rd Edition). J. Feehaly, J Loege, and R Johnson.

Systematically reviewed over 2 years during monthly chief's study group.