



RUSH UNIVERSITY MEDICAL CENTER

Rush University Medical Center Fellowship in Nephrology Curriculum and Policy & Procedure Manual

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General Fellowship Description

The Rush University Medical Center (RUMC) Nephrology Fellowship Training Program www.rush.edu/nephrology is an ACGME accredited 2-year program designed to train Fellows for the practice of Clinical Nephrology and Clinical Nephrology Research. On average, three Fellows are accepted each year with the total program consisting of 6 Fellows. The Fellowship is governed through the RUMC Housestaff Agreement, which is renewed yearly.

The Fellowship program has in-patient rotations at RUMC (the major teaching hospital for Rush Medical College) and has out-patient rotations at [1426 Washington Blvd.](#) located 1/3 of a mile from the RUMC complex. This address houses the Section of Nephrology's Academic offices and is the site of 1) Circle Medical Management (CMM), the out-patient dialysis facility affiliated with RUMC, and 2) Edmund J. Lewis & Associates (EJL & Assoc) the out-patient practice offices of the Section of Nephrology's Attending Staff. A number of out-patient rotations occur at 1426 W. Washington including chronic hemodialysis, chronic peritoneal dialysis & home hemodialysis clinics, stone clinic, and the general nephrology consultation clinics. Out-patient transplant clinics occur at the offices of the Department of Surgery's Section of Transplantation at RUMC.

Faculty

General Nephrology

Roger A. Rodby, M.D.: Fellowship Program Director, Professor of Medicine, Attending Physician, and Medical Director for CMM's acute (in-patient) dialysis program

Casey Gashti, M.D.: Associate Fellowship Program Director, Assistant Professor of Medicine, Attending Physician, Medical Director of CMM's in-patient plasmapheresis program

Edmund J. Lewis, M.D.: Director, Section of Clinical Nephrology, Professor of Medicine

Stephen M. Korbet, M.D.: Director, Division of Nephrology, Professor of Medicine, Attending Physician, and Medical Director of CMM's chronic (out-patient) dialysis program

William Whittier, M.D.: Associate Professor of Medicine, Attending Physician, Medical Director of CMM's chronic home HD program, and nursing home HD program, Director Stone Clinic

Pravir Baxi, M.D.: Assistant Professor of Medicine, Attending Physician

Transplant Nephrology

Samuel Saltzberg, M.D.: Director, Section of Transplant Nephrology, Associate Professor of Medicine, Attending Physician, and Transplant Nephrologist

Vasil Peev, M.D.: Assistant Professor of Medicine, Attending Physician, and Transplant Nephrologist

Pediatric Nephrology

Sara Jandeska, M.D.: Chief, Section of Pediatric Nephrology, Assistant Professor of Pediatrics, Pediatric Nephrologist

Basema Dibas, M.D.: Assistant Professor of Pediatrics, Pediatric Nephrologist

Renal Pathology

David Cimbaluk, M.D.: Assistant Professor of Pathology, Renal Pathologist

Interventional Nephrology

Monnie Wasse, M.D., MPH: Vice Chairperson Department of Internal Medicine and Director of Interventional Nephrology, Professor of Medicine

Basic Policies

Recruitment and Application: The RUMC Section of Nephrology Fellowship program accepts Fellowship applications through the ERAS: <https://www.aamc.org/services/eras/>. Candidates are required to have (by the time of starting Fellowship) graduated from an ACGME approved 3-year accredited Internal Medicine residency program. J-1 Visa candidates may apply, H-1B candidates should contact the Program Director. There are no minimum USMLE score levels to apply. The program uses the NRMP <http://www.nrmp.org> – National Residency Matching Program. Candidates that are offered interviews typically spend the day seeing our professional offices at 1426 W. Washington Blvd which also houses a fellows office, the out-patient general nephrology continuity clinics, PD and home–HD clinics, Stone clinic, and the Hemodialysis unit. They will interview with each of the core faculty at this location. They will also join rounds with the Consult service at the hospital in the morning and have lunch with the Fellows. Potential candidates are encouraged to contact the Program Director rogerrodby@mac.com directly, prior to the interview cycle if they have any questions about the program or have any questions about their eligibility.

RUMC Policy on Diversity, Opportunity and Affirmative Action: In keeping with its goal of promoting diversity through opportunity and affirmative action programs, Rush University is committed to attracting students who will enable the student body to achieve the educational benefits of diversity, and to provide services to all students, faculty, and other employees on a nondiscriminatory, equitable basis. Discrimination or harassment against any member of the Rush University Medical Center community because of race, color, gender, sexual orientation, religion, national origin, ancestry, age, marital status, or parental status, disability as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, or any other category protected by federal or state laws is prohibited and will not be tolerated, nor will any person for those reasons be excluded from participation or denied the benefits of any program or activity within Rush University: [Office of Equal Opportunity](#)

Salary Benefits and Promotion: Salary is based on the current RUMC House Officer's Agreement. Benefits are determined by the office of RUMC Graduate Medical Education. Both are determined yearly and are available at [RUMC GME](#). First year Fellows are promoted to the second year after satisfactory completion of the first year. Non-renewal of a Fellow's contract for the second year can only occur in accordance with the steps required by the RUMC House Officer's Agreement (contract) and must include failure to improve during a probationary period of 60 days that has defined goals. Fellows that will not be offered contract renewal for the second year must be given 120 days notice

before the expiration of present contract. See Appendix N: *Policy on Selection, Evaluation, Promotion and Dismissal*.

Work Environment: The Fellowship complies with the RRC's "*Common Requirements for all Core and Subspecialty Programs*" for resident duty hours and the working environment (see Appendix A: *Resident Duty Hours and the Working Environment*). In addition: The Fellows are provided their own Fellow's offices at both 1426 W. Washington and RUMC. Both offices are supplied with desks, computers with high-speed wireless internet access, printers and a small refrigerator. Text pagers are provided by RUMC. Fellows have access to Epic, the EHR for the hospital and the out-patient practice, and for Clarity the EHR for ESRD related activities, through the internet and thus can be accessed anywhere an internet connection is available.

Meetings: First year Fellows typically attend (during their first year) the Spring Meetings of the National Kidney Foundation (NKF). The second year Fellows typically attend (during their second year) the American Society of Nephrology (ASN) annual meeting. Expenses are covered by the Section of Nephrology (see Appendix M: *Policy on Expenses for Fellows Attending Meetings*). If the Fellow has an abstract accepted at a meeting other than the ASN, the Section may pay the expenses to attend said meeting or conference.

Books and Reading Materials: The RUMC House Staff contract provides a \$300 bookstore allowance (tax free, 5% discount). The first year Fellows are encouraged to use this to purchase copies of the following three textbooks: "Handbook of Dialysis", the "Handbook of Transplantation", and "Clinical Physiology of Acid-base and Electrolyte Disorders".

The Fellows also have an abundance of downloadable materials available through Google Drive, available from any computer or smart phone connected to the Internet. This "site" is created and maintained by the Program Director, is updated weekly, and contains the following folders: 1) *Literature*: This folder contains 39 sub-folders based on Nephrology topics, each of which contain pdf files of important articles, recent as well as historical. There are over 5000 articles in the Literature folder and 2) *Fellow Resources*: This folder contains extensive Board Review materials, Rotation reading lists, and every Power Point presentation that past fellows have created for their Clinical Conferences and Journal Clubs, an extensive Renal Pathology Atlas and finally *CCRT Podcasts*: A series of 11 podcasts by Emil Paganini on the basics of CRRT as well as concepts of dialysis clearance and access.

Fellows have free access to UpToDate on the computers at both the hospital and the offices at 1426 W. Washington: www.uptodate.com. UpToDate is a web based multispecialty information system that is updated quarterly and serves as an excellent resource for all aspects of Nephrology and general medicine. The Practice also purchases a group subscription to the HDCN (Hypertension, Dialysis, Clinical Nephrology) online website www.hdcn.com, another excellent resource for information and slide presentations.

Supervision: Supervision of the Fellows' activities and procedures by Attending physicians is outlined in each of the specific sections detailed below (Detailed Description of the Fellowship). Fellows are supervised by an Attending nephrologist for all of their activities. Attendings are always available if not present and are on call "24/7". The majority of in-patient Fellow care is under *Direct Supervision*. Out-patient Fellow care is under both *Direct and Indirect Supervision*, and the Fellows' home call is under *Indirect or Oversight Supervision*. These levels of supervision are defined by the ACGME Common Program Requirements as:

Direct Supervision -	the supervising physician is physically present with the resident and patient
Indirect Supervision -	with direct supervision immediately available - the supervising physician is physically within the hospital or other site of patient care, and is immediately available to provide Direct Supervision
	with direct supervision available – the supervision 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 after care is delivered

There is no distinction in supervision between first and second years of Fellowship, except where it applies to procedure competence (see Appendix B: *Nephrology Fellow Job/Procedure Descriptions*).

Also from Appendix A: *Resident Duty Hours and the Working Environment*:

- a. All patient care must be supervised by qualified faculty. The program director must ensure, direct, and document adequate supervision of residents at all times. Residents must be provided with rapid, reliable systems for communicating with supervising faculty.

- b. Faculty schedules must be structured to provide residents with continuous supervision and consultation.
- c. Faculty and residents must be educated to recognize the signs of fatigue and adopt and apply policies to prevent and counteract the potential negative effects.

Job Description by Level: The complete job description by level is found in the document entitled “*Detailed job descriptions*” (see Appendix B: *Nephrology Fellow Job/Procedure Descriptions*).

Duty Hours and On-call: The Fellowship complies with the RRC’s “*Common Requirements for all Core and Subspecialty Programs*” for resident duty hours and the working environment (see Appendix A: *Resident Duty Hours and the Working Environment*). The Fellow on the RUMC Clinical Service (see below) is on call for the entire month, except for weekends which start 3:00 PM Fridays and last until 8:00 AM Mondays. Call is never “In-house” but Fellows may return to the hospital to see appropriate consults and admissions. The on-call schedule including holidays is made by the Fellows and rotates with equal amounts of call among first and second year Fellows. Duty hours are tracked using a web-based program within rush.medhub.com.

Moonlighting: Moonlighting is allowed but must be approved by the program director (covered within Appendix A: *Resident Duty Hours and the Working Environment*). Moonlighting hours count toward Duty Hours.

Order Writing: All in-patient orders are only written by Fellows. Orders are written by both Fellows and Attendings at the out-patient hemodialysis unit and out-patient clinical settings, however the latter should occur only if a Fellow is not present and the order cannot wait.

Absence: Fellows need to arrange coverage if they are gone or unavailable during the time they are on active rotations including Transplantation, Out-pt. Hemodialysis, Out-pt. Peritoneal Dialysis, or the RUMC Clinical service. Pre-arranged Fellow absences should be cleared with the appropriate Attending for absence from the Clinical and Transplantation Consult services, or the Program Director for Fellows absent from the Out-pt. Hemodialysis (HD) or Out-pt. Peritoneal dialysis (PD) services. An email with the dates and covering Fellow must be circulated. The Fellow needs to make sure that the designated covering person is available and on-site. For instance, The Out-pt. PD Fellow can cover the Out-pt. HD Fellow, but should be at the out-patient office site during the coverage time. The Fellow covering the

unavailable Fellow should let the other service's "charge" nurse know that they are covering and available. Absence from Pediatric Nephrology and Renal Pathology is strongly discouraged and must be approved by the Program Director. Fellows do not need to arrange coverage for these two services if absent.

Fellows are allowed up to 4 weeks paid time away from training which they may use for vacation, illness, parental or family leave or pregnancy related illness. This time off will not impact the Fellow's Program Completion. If a Fellow takes a leave of absence greater than this month period, the Fellow may need further training to satisfy criteria for Program Completion. In this case the program director will ask the ACGME for approval of extension of the fellowship for an appropriate time period (up to but not in excess to time missed) and in parallel will ask the local DIO for an approval as well as extension of payroll. The "Program Completion" and "Board Eligibility" will be delayed until that period has been fulfilled.

Preceptors: Fellows are assigned a RUMC Attending physician who serves as a "Preceptor" for a six-month period. Over the course of the two-year Fellowship, the Fellow will have four different Attending Preceptors. The Fellow has out-patient general nephrology clinic (see below) with his or her Preceptor. Fellow based conferences (see below) are overseen by the Fellow's Preceptor.

Evaluations

All evaluations are done electronically through MedHub, rush.medhub.com. Even though the evaluations are electronically submitted, it is still required that these monthly Fellow evaluations are reviewed by the Attending and the Fellow. This should be done in a timely manner following the rotation. All evaluations incorporate the *Core Competencies* as well as the *Milestones* as are felt to be measurable depending on the given rotation. All evaluations of the Fellow are available to the Fellow using their secure MedHub sign-on. All evaluations are stored permanently in MedHub.

The Fellows are evaluated:

- 1) After each: Consult, Transplant, Pediatric Nephrology and Renal Pathology rotation by the Attending on that Service
- 2) After each 3-6 month Continuity Clinic period by the Clinic Attending
- 3) After each HD and PD rotation by Clinic Attendings
- 4) Every 6 months in a narrative **Comprehensive** report prepared by the **Clinical Competency Committee (CCC)** which is subsequently provided to and discussed privately with the Fellow by the Program Director, and also the basis for reporting the biannual Milestones for each Fellow to the ACGME. Fellows graduating from the program receive a “24-month Graduation Comprehensive Evaluation” that addresses that the Fellow has demonstrated sufficient professional ability to practice competently, independently and unsupervised.
- 5) Annually by nurses as part of a “360 degree” evaluation process, for Professionalism and Interpersonal and Communication skills. The evaluators include the four administrative nurses in charge of Peritoneal Dialysis, in-patient and out-patient Hemodialysis, and the Out-patient clinics.

The Fellows evaluate (*anonymously*):

- 1) The Training Program: Annually. A summary of these Evaluations are submitted to the **Program Evaluation Committee** for the **Annual Program Evaluation**.
- 2) The Faculty: After each in-patient rotation and Annually. Each Fellow will evaluate each Attending. A summary of these Evaluations is submitted to the Program Director as part of the **Annual Faculty Evaluation**.

The Attendings evaluate (*anonymously*)

- 1) The Training Program: Annually. A summary of these Evaluations is submitted to the **Program Evaluation Committee** for the **Annual Program Evaluation**.

Clinical Competency Committee:

The **Clinical Competency Committee (CCC)** is a committee designated by the Program Director and consists of the Program Director (Chair) and 2-3 key clinical Faculty. The CCC will meet *twice a year*.

The responsibilities of the CCC include:

- 1) Review all resident evaluations (above) or summary statistics of the evaluations, especially as they relate to the Milestones, Competencies, and Entrustable Professional Activities (EPAs) see below.
- 2) Review Procedure logs and discuss Procedure proficiency
- 3) Review in-service exam results when available
- 4) Determine any concerns of Fellow progress, promotion or graduation, or even dismissal and creates a plan when concerns are identified
- 5) Create a formal 6, 12, 18, or 24-month Comprehensive Review that is used to report Milestones to the ACGME through ADS. In preparing this review, the Fellow's entire folder is reviewed by the CCC.

The Comprehensive Review report consists of 4 sections addressing

- 1) Entrustable Professional Activities (EPAs)
- 2) Core Competencies and Milestones
- 3) Scholarly Activities
- 4) Summative Statement

This Review report also serves as the basis for the biannual Milestone reports to the ACGME. Each individual Fellow Comprehensive report is also distributed to and discussed with the Fellow by the Program Director. An action plan is made for specific problems or deficiencies identified by the CCC.

The following documents are provided to the CCC:

- 1) Aggregate reports of Fellow evaluations (by Faculty) for
 - a. All monthly hospital rotations: Consults, Transplant, Pediatric Nephrology and Renal Pathology
 - b. 6-month continuity clinic rotations

- c. All monthly CMM rotations: Out-patient HD and Out-patient HD
 - d. “360” evaluations by 4 practice nurses or technicians
 - e. Summary statistics of the Fellow’s performances stratified by the Core Competencies
 - f. Summary statistics of the Fellow’s performances stratified by Milestones
- 2) Individual Fellow results for the ASN In-Service Exam
 - 3) A report of Fellows’ research experience presentation and publication status
 - 4) Individual Fellows Procedure logs
 - 5) The RUMC Fellowship in Nephrology Curriculum and Policy and Procedure Manual

Program Evaluation Committee:

The **Program Evaluation Committee (PEC)** meets *annually* to make an Annual Program Evaluation report. The Program Evaluation Committee is made up of the Program Director (Chair), 2-3 key clinical Faculty and the Chief Fellow. The responsibilities of the PEC are:

- 1) Planning, developing, implementing, and evaluating the educational activities of the program.
- 2) Reviewing and making recommendations for revision of competency-based and milestone based curriculum goals and objectives
- 3) Reviewing the program annually using evaluations by both Fellows and Attendings
- 4) Specifically, Each of these factors are evaluated
 - a. Fellow Performance on rotations
 - b. Graduate performance: Board Pass rate
 - c. Program quality: Evaluations by Fellows and Faculty, in-service exam results
- 5) Deficiencies in any of the above factors will be addressed with an Action Plan and a means of tracking improvement
- 6) Creating a written Annual Program Evaluation

The following documents are provided to the PEC:

- 1) The latest comprehensive evaluation of each Fellow by the Program Director (12-month evaluation for the 2nd year Fellows, and 24-month graduation evaluation for graduating Fellows)
- 2) An Aggregate report of Nephrology Boards pass/fail rate with specific score results (when available) since Class of 2002
- 3) An Aggregate report of the results of the ASN In-Service Exam
- 4) An Aggregate report of Fellows' research experience and rate of publication since class of 2002
- 5) ACGME requirements and the Program's Curriculum's Documents
 - a. The RUMC Fellowship in Nephrology Curriculum and Policy and Procedure Manual
 - b. ACGME document: *Common Program Requirements*

- c. ACGME document: *ACGME Program Requirements for Graduate Medical Education in Nephrology (Internal Medicine)*
- 6) The Aggregate Evaluation Report of the Anonymous *Exit Surveys for graduating Fellows*, (for previous year, administered by RUMC GME)
 - 7) The Aggregate Evaluation Report of the Anonymous *Annual Program Review by each Fellow*
 - 8) The Aggregate Evaluation Report of the Anonymous *Annual Program Review by each Attending*
 - 9) Duty Hours reports
 - 10) Procedures reports
 - 11) The ACGME Resident and Faculty Surveys

These documents are reviewed and program and curriculum suggestions are made. Action plans are created if necessary. An Annual Program Evaluation Report is made and supplied to all Faculty. This Report is also stored in MedHub under Program Accreditation.

Faculty Evaluation Committee:

The Faculty Evaluation Committee is made up of the Program Director and the Section Head. This committee meets *annually* to perform an **Annual Faculty Evaluation** in terms of:

- 1) Teaching ability from Fellow evaluations of Attendings (above)
- 2) Commitment to the educational program
- 3) Clinical Knowledge
- 4) Professionalism, and Interpersonal Skills
- 5) Scholarly Activities
- 6) Faculty Development

The following documents are provided to the PEC.

- 1) The Aggregate Evaluation Report of *Evaluation of Nephrology Attending by Fellow: Annual*
- 2) The Aggregate Evaluation Report of *Evaluation of Nephrology Attending by Fellow: In-Patient Services*
- 3) The Aggregate *Evaluation Competencies Report* for each Attending
- 4) An Aggregate report of Fellows' research experience and rate of publication since class of 2002
- 5) Updated CVs of each faculty member

A report is made relative to 1-6 above and distributed to each Faculty Member.

Any issues that arise from this Faculty evaluation will result in the creation of an action plan created by the Program Director, the Section Head and the Faculty member.

Entrustable Professional Activities (EPAs):

Proficiency in EPAs are determined by the CCC (see above) based on questions within evaluation forms and include direct observation of the Fellow by the Attending. Nephrology based EPAs determined by the Program Director include:

- 1) Manage Hemodialysis
- 2) Manage Continuous Renal Replacement Therapies
- 3) Manage Therapeutic Plasma Exchange
- 4) Manage Peritoneal Dialysis
- 5) Consultation in Nephrology
- 6) Renal biopsy of native and transplanted kidney
- 7) Placement of acute access for hemodialysis

The American Society of Nephrology (ASN) has developed its own list of EPAs:

- 1) Cares for the patient with ESRD
- 2) Cares for the patient with a kidney transplant
- 3) Cares for hospitalized patients with acute kidney injury (AKI) and with complex fluid/electrolyte and acid/base disorders
- 4) Cares for patients with intoxications another disorders which may require blood purification techniques
- 5) Cares for patients with chronic kidney disease
- 6) Cares for patients with glomerular diseases
- 7) Provides evaluation and care of patients with nephrolithiasis
- 8) Provides evaluation and care of care of patients with HTN
- 9) Advances knowledge and treatment of and preventable strategies for kidney disease

Both of these lists of EPAs are considered in the biannual Fellow evaluations by the CCC.

Vacations and New Child leave:

Each Fellow may take up to 4 weeks of vacation each academic year. Fellows must make arrangements for coverage by another Fellow if they are away from the hospital during days that fall during a rotation when they have clinical responsibilities (see above paragraph entitled “Absence”). Requests for vacation are made through the schedule within the MedHub website: rush.medhub.com. Vacations should not occur while on the Clinical Service, the Transplant Service, the Renal Pathology Rotation, and the Interventional Radiology Rotation. Vacations require prior approval by the Program Director and vacation time is tracked through MedHub. See Appendix L: *Maternity/Paternity/Family Leave*, for RUMC housestaff maternity and paternity/family leave policy.

Gifts to Physicians From Industry:

It is the policy of the Institution and Section of Nephrology to teach the Fellows the relevant issues related to interaction with industry in regards to gifts and meals etc. as can be offered by representatives of the pharmaceutical as well as other medical provider industries that the trainee may come in contact with (see Appendix K: *Gifts to Physicians From Industry*).

Detailed Description of the Fellowship

The Fellowship program will prepare the trainee to practice all major areas of Nephrology. This is done through a number of mechanisms: In-patient and out-patient Clinical Service Rotations and Clinics, Conferences and Lectures, and Clinical Research. The Section of Nephrology performs approximately 1,500 new in-patient consults a year and oversees the delivery of approximately 4,800 in-patient dialysis treatments a year.

Hemodialysis, Continuous Renal Replacement therapies (CRRT), and Plasmapheresis or Therapeutic Plasma Exchange (TPE). Training in hemodialysis is centered in both the out-patient (CMM) and the in-patient (RUMC) and setting. Training in CRRT and TPE is centered exclusively on the in-patient (RUMC) setting

Out-patient hemodialysis: Fellows will spend 4 one-month blocks each year on the “**Out-patient Hemodialysis Rotation**” managing hemodialysis patients at CMM, the hemodialysis unit affiliated with RUMC. All out-patient hemodialysis activities are supervised by Nephrology Attending Physicians assigned to patients by shifts. Except for conferences and lectures, the Fellow will be present at the HD unit from approximately 8:30 AM - 4:00 PM, 5 days a week. Fellow responsibilities include, writing and updating hemodialysis orders, evaluation and management of patients’ hemodialysis accesses, dry weights, blood pressures and extracellular fluid balances, hemodialysis prescriptions, nutritional status, osteodystrophy status, anemia status; and will review monthly and other non-routine labs and cultures. The Fellow will also address and triage patient medical complaints. These issues are identified and dealt with through daily rounds. Rounds may be made with or without the Attending present. As a result of these patient evaluations, a monthly note is written on each patient by the Fellow, which addresses blood pressure, osteodystrophy status, dialysis adequacy, nutrition, dialysis access, and anemia. These notes are reviewed by the Attending with the Fellow. The Fellow will also meet with the hemodialysis staff to review the water treatment facilities, the set-up and running of a dialysis machine. The average size of the out-patient hemodialysis program is 120 patients.

Fellows on Out-pt. HD will also attend any monthly patient-care conferences that occur during their month on that rotation. These are multidisciplinary conferences attended by the head HD nurse, the on-site Social Worker, and the on-site Dietician. An Attending physician runs the meeting. The purpose of this conference is to review all medical, social and dietary issues that pertain to a patient on chronic hemodialysis. This review is done twice yearly for each patient.

Fellows on Out-pt. HD will also prepare annual Hemodialysis Patient summaries that include active problem lists, hospitalizations and medications. This list is distributed by Dr. Korbet the Medical Director of out-patient dialysis.

CMM also has a **daily home hemodialysis** program and clinic that they attend while on their Peritoneal Dialysis rotation (see below).

In-patient Hemodialysis, Continuous Renal Replacement Therapies (CRRT) and Plasmapheresis or Therapeutic Plasma Exchange (TPE): Fellows learn the indications for and the performance of in-patient hemodialysis, CRRT, and TPE while on the ESRD, Clinical, and Transplantation Services (see below). The Fellow will learn to: 1) write orders for hemodialysis, CRRT, and TPE, 2) determine the proper dialysate bath or replacement fluids for HD or CRRT and the proper blood product replacement for TPE, 3) determine the appropriate anticoagulation protocol, and 4) determine the proper fluid removal amount, time on treatment, blood flow rates, and the need for sodium modeling if available. These orders are written under the supervision of the Attending physician. The Fellow also manages the accesses of these patients, either placing hemodialysis access or arranging placement when necessary. The Fellow deals with all hemodialysis, CRRT, and TPE related problems that develop while a patient receives these therapies. These include hemodynamic instability and poor access function.

Peritoneal Dialysis

Training in peritoneal dialysis is centered in both the in-patient (RUMC) and out-patient (Circle Medical Management, or CMM) setting.

Out-patient peritoneal dialysis: Fellows will spend 2 one-month blocks each year on the “**Peritoneal Dialysis Rotation**” managing peritoneal dialysis patients at CMM. This is done through formal Peritoneal Dialysis Clinics, in which peritoneal dialysis patients make out-patient visits on a monthly basis. Patients are initially seen and examined by the Fellow who reports to an Attending Physician and the case is discussed. Both the Fellow and the Attending Physician then see the patients and appropriate changes are made in dialysis prescription to affect ultrafiltration or clearance. The patient’s anemia and osteodystrophy management are reviewed and the treatment of a patient’s peritonitis or exit site infection if applicable are reviewed. When new patients start peritoneal dialysis, the Fellow will, in conjunction with the Attending, write orders for the patient that will be tailored to a patient’s medical and lifestyle requirements. The Fellows on this service will observe peritoneal dialysis staff based patient training for both CAPD and CCPD, and will become well versed in “connectology”. They will also learn about the diagnosis and out-patient treatment of peritonitis, the out-patient

evaluation of peritoneal transport, and peritoneal dialysis adequacy. They will review all labs and cultures. The average size of the out-patient peritoneal dialysis program is 12 patients. The Fellows' hours on this Service are 8:30 AM - 4:00 PM, 5 days a week.

Fellows on Out-pt. PD service will also attend any patient-care conferences that occur during their month on that rotation. These are multidisciplinary conferences attended by the head PD nurse, the on-site Social Worker, and the on-site Dietician. An Attending physician runs the meeting. The purpose of this conference is to review all medical, social and dietary issues that pertain to a patient on chronic peritoneal dialysis. This review is done twice yearly for each patient.

Fellows on Out-pt. PD service will also attend **Home-HD** clinic.

In-patient peritoneal dialysis: While on the Clinical service, the Fellow in conjunction with the Attending on the Clinical Service will manage all peritoneal dialysis in the hospital. The issues related to the management of these patients may or may not be similar to those seen in the out-patient setting. This Fellow/Attending team will make daily decisions that are required to manage these patients' dialysis prescriptions, as well as manage infectious and mechanical complications of the therapy. The average number of peritoneal dialysis in-patients is two.

In-patient Consultation and Management (“Clinical Service” and “ESRD Service”)

RUMC: Fellows will spend 2 one month blocks each year on the “**Clinical Service**” managing all in-patients in which a patient is either admitted to a Nephrology Attending, or the Nephrology service has been consulted (excluding those patients whose Attending is a kidney or liver transplant surgeon, see Transplant Service, below). Similar to all other in-patient services, there is a single Attending Physician that works with the Fellow and is assigned to that service for the entire month. Rounds are made together on all patients on a daily basis and start in the morning. New Consults or Admissions are usually seen first by the Fellow and a Resident and are subsequently presented to the Attending. The cases are then discussed with appropriate recommendations made. The team may also meet again after rounds to discuss follow-up on issues identified during morning rounds, as well as to discuss new consults that may have been seen. All activities are supervised, usually directly, by an Attending nephrologist. However there may be times that the Fellows is seeing patients by him/herself (evenings) with the back-up of an Attending on-call 24 hours a day 7 days a week. It is expected that most clinical decisions during these times are discussed together with the Fellow and Attending.

This is a busy service with the average number of patients being followed by this service being 40, and the average number of new patients (either admissions or consults) being 5/day. Fellows on this service are expected to return to the hospital to evaluate most Admissions and Consults that may

develop after normal working hours. There is no in-hospital “call”. The hour requirements of this service depend solely on the patient load but have never exceeded that defined by the RRC’s duty hour limits.

The Fellow will be exposed to most aspects of in-patient Nephrology while on this Service. This includes management of all electrolyte disorders, all forms and complications of acute and chronic renal failure, all forms of renal replacement therapies including hemodialysis, peritoneal dialysis, and continuous renal replacement therapy, acute and chronic glomerulopathies, hypertension, pregnancy and renal disease, ethical issues related to end of life, dialysis withdrawal, and the appropriateness of life prolongation with dialysis, and may perform any number of procedures (see below).

ESRD Service: Fellows will spend 2 one month blocks each year on the “ESRD Service” managing in-patients on dialysis. This rotation is designed to help mimic real-world nephrology and meet the educational objectives listed above. The Fellow will see an average of 5 patients daily on weekdays and sign out to the “Clinical Service” Fellow each afternoon (no overnight pages). The Fellow will work directly with a single Attending Physician. The service will be covered by the Fellow on-call for weekends. Dr. Chugh may also have Wed afternoon GN clinics twice a month, and if these occur they will be covered with him and under his supervision by the ESRD service.

Pediatric Nephrology

Fellows will spend one month in their second year of their Fellowship rotating on the “**Pediatric Nephrology Service**”, with Drs. Sara Jandeska and Basema Dibas, full-time Pediatric Nephrologists in the Department of Pediatrics. During that time they will become familiar with the differences between pediatric and adult ESRD replacement therapies. They will attend the Pediatric Nephrology clinics at RUMC and learn the evaluation of the pediatric patient with proteinuria and hematuria, congenital electrolyte abnormalities. They may also see in-patient pediatric patients with an array of acute and chronic renal diseases. Dialysis of the newborn may also be observed. All Fellow activities are directly supervised by Drs. Jandeska and Dibas. The out-patient Pediatric hemodialysis unit is located on the RUMC premises and Fellows will make rounds in that facility with Drs. Jandeska and Dibas.

Renal Transplantation

Training in the management of patients with a renal transplant is centered in both the in-patient (RUMC) and out-patient (Transplant Offices at the Section of Transplantation located at RUMC professional building). Dr. Saltzberg (Section Head of Transplant Nephrology) and Dr. Peev and will be responsible for the majority of a Fellow’s training in renal transplant medicine.

Fellows will spend two months a year rotating with Dr. Saltzberg or Dr. Peev on the **“Transplant Service”**. During the month on that service, the Fellow rounds with either Dr. Saltzberg or Dr. Peev on all in-patient renal transplant recipients and liver transplant patients in which a renal consult has been requested. The average size of this service is 8-12 patients. It is expected that the Fellow evaluate patients as they get admitted for renal transplantation, and follow their post-transplant course. The Fellow will become familiar with various induction and maintenance immunosuppression protocols. The Fellow will become aware of the differential diagnosis of immediate post-surgery, early and late transplant dysfunction. The Fellow will learn the short and long-term consequences of immunosuppression including general steroid toxicity in addition to infections and malignancies. The Fellow will perform and interpret renal transplant biopsies when appropriate. There are over 120 renal transplants performed yearly at RUMC, the Transplant Service fellow will follow most of these patients. The Fellow will manage any post-transplant in-patient hemodialysis needs that these patients may have. There is no night call for the Fellow on this service. All activities including transplant renal biopsies are directly overseen by an Attending Nephrologist. The Transplant Fellow is also responsible for writing and managing requiring TPE, whether the indication is Renal, Neurological, or Hematologic. This is also supervised by an Attending Nephrologist.

During the second year of the Fellowship, the Fellows will spend one morning a week for 3 continuous months at Dr. Saltzberg’s or Peev’s out-patient transplant clinics at the offices of the Section of Transplantation within RUMC. In this clinic the Fellow sees patients with established renal transplants as well as those undergoing work-up for receiving or donating a renal transplant. Because the in-patient transplant service is so busy, the Fellow rotating on that in-patient transplant service will not attend out-patient transplant clinics during that month (with the clinic attended by a different Fellow). During the 3-month period it is expected that this Fellow will follow an amount much greater than the 20 patients as required by the ACGME. The goals of this out-patient clinic’s aspect of the rotation are: to learn to evaluate ESRD patients to determine if they are potential and acceptable candidates, to learn the appropriate work-up of ESRD patients for either living donor transplantation or placement on the cadaver list, to learn the appropriate work-up of individuals as potential living related and living non-related donors, to learn about immunosuppressive drugs and regimens used in the management of renal transplants, to learn the side effects, complications and drug interactions of immunosuppressive drugs, to learn to evaluate and treat post-transplant complications including infection, hypertension, malignancy, de novo glomerular disease and recurrent glomerular disease, to learn to recognize and treat acute rejection, to learn to recognize and treat chronic rejection, and finally, to learn the fundamentals of HLA

matching and histocompatibility testing. These transplant clinics follow several hundred renal transplant patients, with as many as 20 patients seen on any clinic day.

Renal Pathology

Fellows spend one month during their first year working with Dr. David Cimbaluk, renal pathologist on the “**Renal Pathology Rotation**”. During that month they learn the fundamentals of renal histopathology through slide review with Dr. Cimbaluk, slide review that the Fellow performs on his/her own, as well as formal daily one hour teaching sessions by Dr. Cimbaluk.

Training in interpretation of renal biopsies is also provided through our weekly **Biopsy Conference**, a CME approved joint conference between the Section of Nephrology and the Department of Pathology that takes place in the conference room of the Department of Pathology. Two cases are typically presented each week. All cases, in which a biopsy of a native kidney was performed at RUMC, in addition to selected cases of transplant biopsies, are written up as a protocol by the Fellow involved in the case. This protocol is handed out to conference participants and is orally presented by that Fellow. Both Attendings and Fellows then discuss the case as they are called upon by a conference mediator. After a differential diagnosis has been generated, the pathology is presented onto a screen. A Fellow is randomly chosen to read these slides (first year Fellows do not read cases in this conference until they have completed their Pathology rotation). When the slide review has been completed, the Fellow is asked to give a histologic diagnosis. The treatment is then discussed by Attendings and Fellows as they are called upon. The active process of reading biopsies in an intellectually stimulating and supportive setting is the most effective teaching tool. Cimbaluk is an integral part of the Nephrology Section with a commitment to the education of our Fellows.

Fellows are encouraged to perform as many renal biopsies as they can that are medically indicated during their Fellowship. Biopsies may be done on native kidneys as well as on renal transplants. This procedure is tracked through the electronic procedure log found on rush.medhub.com.

Interventional Nephrology (IN)

Fellows on the out-patient CMM based PD/HHD service will attend Dr. Wasse’s IN clinics within the Interventional Radiology Suites at the hospital one day a week. The exact day will depend on any given week’s PD/HHD and Dr. Wasse’s clinic schedule. The purpose of this rotation is for the Fellow to become more acquainted with hemodialysis access placement, including temporary and “perm” catheters, as well as the radiologic diagnosis and treatment of problems (stenoses, thromboses

etc.) associated with catheters, fistulas and A-V grafts. Fellows may have the opportunity to place temporary catheters, although this is not the primary goal of the rotation.

Procedures done while on IR rotations are tracked through the electronic procedure log found on rush.medhub.com. All activities during this rotation are directly supervised by Dr. Wasse.

Out-Patient Nephrology Clinic

Fellows have a weekly continuity clinic for their entire fellowship: 21 months of general nephrology and 3 months of transplant nephrology.

Fellows see patients one half day a week in their out-patient general nephrology continuity clinic at the offices of EJM & Assoc. Fellows have out-patient clinic at the same time as their preceptor assigned for 6-month blocks (see above). This clinic sees new out-patient consultations, and continues follow-up of established patients. All new patients assigned to the Fellow are seen first by the Fellow with the case then being presented to the Attending with the case then subsequently discussed together. This team then sees the patient together and decides and relays further work-up and therapy. All aspects of acute and chronic renal disease may be seen in this clinic. The Fellow is responsible for the majority of data input into the EHR. A special emphasis is made on preparing patients for ESRD; considering nutritional, socioeconomic, and access concerns as well as requiring the patient to be an active participant in the ESRD modality choice. A Fellow follows his patients throughout the 6-month period. During the Fellow's second year 3 months of the continuity clinic is done in Dr. Saltzberg's or Dr. Peev's out-patient transplant clinic at RUMC.

Stone Clinic

Stone clinic occurs once a month with Dr. Whittier and each Fellow will attend it twice a year.

Conferences

There are up to four conferences (typically three) each week consisting of 1) A Fellow presentation noon conference that is either a Clinical Conference, a Journal Club, or a Morbidity and Mortality conference with one of these occurring 1-2 weeks a month. Fellows are expected to give 4 of these total a year. These conferences are usually multifaceted and because of the nature of the topics under discussion, cover a combination of tasks and topics including but not limited to literature review, discussion of clinical cases, evaluation and presentation of research, and concepts of Nephrology basic science. 2) A weekly Renal Biopsy Conference. 3) Weekly Core Curriculum conferences run by the Faculty in either a lecture or workshop format (see Curriculum below). 4) The Section of Transplantation of the Department of Surgery has intermittent Transplantation conferences with a Visiting Professor. 5) The Division of Nephrology has Visiting Professor conferences.

Clinical Conference

Clinical Conference is a Fellow presented conference that takes place at noon in a conference room at RUMC. It is a case-based discussion of a case or topic that the Fellow and an Attending (usually the Fellow's preceptor) find relevant or interesting. That Attending oversees and reviews the presentation prior to the conference. The conference is usually done as a PowerPoint presentation. The schedule for Clinical Conferences is made 6 months in advance and is posted in the schedule section of the MedHub website. Clinical Conferences are attended by RUMC Nephrology faculty and RUMC Nephrology Fellows, RUMC Residents and Medical Students rotating on the renal clinical service. Clinical Conferences may also be presented by Section of Nephrology Attendings and Visiting Professors.

Journal Club

Journal Club is a Fellow presented conference that takes place at noon in a conference room at RUMC. The Fellow chooses the article with his or her preceptor. The Fellow is expected to critically review the article, read background material, and present the article to the group, using PowerPoint. The Fellow's presentation is discussed with the Fellow's preceptor (who must be present at the Conference) prior to the presentation. As part of the evaluation of an article the Fellow and the preceptor will focus on the design as well as interpretation of the data and results including the use of statistical methods, the responsible use of informed consent, and research methodology. This exercise is considered an important part of a Fellow's Research and statistical analysis training. The schedule for Journal Club is made 6 months in advance and is posted in the schedule section of the MedHub website. Prior review of the article is expected for all attendees and is distributed via email. It is also available for permanent

download through the MedHub web site linked to the specific conference within the MedHub conference schedule. The Journal Club is attended by RUMC Nephrology faculty and RUMC Nephrology Fellows, RUMC Residents and Medical Students rotating on the renal clinical service.

Renal Biopsy Conference

Renal Biopsy Conference is a weekly conference held on Thursday afternoons and usually lasts 90 minutes with two cases typically being presented. It is attended by RUMC Nephrology Faculty, RUMC Nephrology Fellows, RUMC Residents and Medical Students presently rotating on the Renal Service, in addition to Nephrology Faculty from Cook County Hospital and Mount Sinai. See Renal Pathology (above) for a detailed conference description. Biopsy conference protocols are stored on the MedHub web site linked to the specific conference within the MedHub conference schedule.

Morbidity and Mortality Conference

One of the Fellow's 4 conferences a year should be a Morbidity and Mortality Conference. For that conference the Fellow will present a one page case history at which time the floor will open up to discussion. Once a year M&M will consist of a discussion of the Biopsy Q/A program that Dr. Korbet creates and maintains from the database that includes all renal biopsies. This also serves as a Fellow based Q/A project.

Lectures

Attendings give weekly Core-Curriculum lectures/workshops. The goal of these lectures is to cover all Nephrology core concepts but not limited to acid-base disorders, normal and abnormal basic science related renal physiology, disorders of salt and water and other electrolytes, acute renal failure, chronic renal failure, hemodialysis, peritoneal dialysis, continuous renal replacement therapies, nephrolithiasis, renal disease of pregnancy, basic transplantation topics (see ‘Transplantation’ above), primary and secondary glomerular diseases, renal osteodystrophy, dialysis adequacy, access recirculation, hypertensive disorders, urinary tract infections, tubulointerstitial disorders, disorders of drug metabolism and renal drug toxicity, genetic and inherited disorders, geriatric aspects of Nephrology, and the business of ESRD. The schedule is provided 12 months in advance and is posted in the schedule section of the MedHub website. The Lectures repeat yearly so that if a Fellow misses a lecture he/she will be able to attend it the next year.

Research

Fellows are given one to two one-month blocks each year in their schedule designated for research. It is the goal of the Fellowship that most if not every Fellow partakes in some type of “research” project. This may include a case report with critical literature review, a retrospective analysis of clinical material, or involvement in a short-term prospective clinical trial. Projects may be provided by Attendings, or may be developed by the Fellow. All projects will be supervised by an Attending, which may or may not be the Fellow’s preceptor. All projects need to be approved by the Program Director through a formal application form (see Appendix C: *Nephrology Fellow Research Proposal*) before a project is to be embarked upon. It is expected that all Fellows submit their work as a manuscript for publication (for case reports) or as an abstract (for research projects) to one of the national meetings. If an abstract is accepted for oral or poster presentation, the Section of Nephrology will cover expenses for the Fellow to attend that meeting.

As part of the training in “research”, the Fellows are expected to present important research articles at Journal Club (see above). This exercise requires extensive preparation and review of pertinent literature and is felt to represent an important part of a Fellow’s “Research” training.

Procedures

Fellows will be trained by Attendings to be competent in following invasive procedures: percutaneous renal biopsy of native and transplant kidneys, and hemodialysis access line placement. An Attending is present at all procedures until the Fellow has demonstrated competence as determined by the Program Director or other Faculty members by Direct Observation. Procedure competence will be tracked and documented by the CCC. By the end of the Fellowship it is expected that the Fellow learn to competently perform the following:

- 1) Acute and chronic hemodialysis – learned through in-patient rotations and out-patient clinic rotations as well as Core Curriculum lectures
- 2) Acute and chronic peritoneal dialysis – learned through in-patient rotations and out-patient clinic rotations as well as Core Curriculum lectures
- 3) Continuous renal replacement therapies - learned through in-patient rotations and Core Curriculum lectures
- 4) Plasmapheresis - learned through in-patient rotations and Core Curriculum lectures
- 5) Placement of temporary access for hemodialysis and related procedures
 - a. Formal training in simulation lab and on IN rotation
- 6) Percutaneous renal biopsy of native and transplant kidneys
 - a. Formal training by Renal Attending and Ultrasonographer, never performed unsupervised regardless of level and experience
- 7) Urinalysis
 - a. Formal training by pathology lab and Urinalysis Lecture in core curriculum

A Faculty member is present at all procedures until the Fellow has demonstrated competence. The complete procedure description by level is found in Appendix B: *Nephrology Fellow Job/Procedure Descriptions*. It is the Fellow's responsibility to keep a log of all invasive procedures through the procedure section of the MedHub website: rush.medhub.com. The Program Director will determine competency of these procedures and document such in the semi-annual narrative based comprehensive Fellow evaluations.

Curriculum

The curriculum is based on multiple venues and experiences as outlined above. The Fellowship program has in effect many diverse means by which all program requirements as defined by the ACGME for training in Nephrology are fulfilled. It is not expected that any single experience will fulfill all Goals and Objectives. Monthly rotations differ in exposures, responsibilities, and experiences and there is considerable overlap by rotation and experience. Still, there are goals and objectives for each rotation that the Attending and the Fellows must focus on. These are outlined by rotation and distributed to Fellows and Attending at the start of each rotation. The specific rotation documents and appendices (attached) are

- a) Clinical Service, Appendix D
- b) Transplantation, Appendix E
- c) Chronic Hemodialysis, Appendix F
- d) Peritoneal Dialysis, Appendix G
- e) Pediatric Nephrology, Appendix H
- f) Renal Pathology, Appendix I
- g) Interventional Nephrology, Appendix J

The Program Evaluation Committee meets once a year to review and evaluate the curriculum, with changes made as deemed appropriate.

The weekly lecture series is meant to cover many of the goals and objectives as defined in Appendices E-J. The majority of Nephrology Basic Science training occurs through this series of lectures and workshops. A sample of one year's lecture topics are presented in the following table:

Date	Attending	Topic
7/11/12	BL	Tx complications: infectious
7/18/12	BL	Tx complications: non-infectious
7/25/12	WW	ATN
8/1/12	SK	Renal Biopsy, procedure and complications
8/8/12	SS	HLA system & role in renal Tx
8/15/12	SK	KT/V HD Measurement: URR v KT/V, factors etc.
8/22/12	CG	HD Water treatment
8/29/12	CG	Urinalysis performance and interpretation
9/5/12	WW	Diabetic Nephropathy
9/12/12	MS	Hyperkalemia
9/19/12	MS	Hypokalemia
9/26/12	CG	Peritonitis
10/3/12	BL	W/U of transplant donor and recipient
10/10/12	SS	Tx immunosupp induction/pheresis/ALG/ATG/OKT3
10/17/12	SS	Tx immunosupp maintenance: CSA, FK, steroids, rapa, cellcept
10/24/12	RR	Na & Water 1
10/31/12		ASN
11/7/12	RR	Na & Water 2
11/14/12	RR	KT/V PD, measurement, DOQI, ADEMEX
11/21/12	SK	Paraproteinemias, ITG, amyloid, LCDD, etc.
11/28/12	RR	Acid Base 1
12/5/12	CG	Recirculation, access and cardiopulmonary
12/12/12	SK	Nephritic syndromes: Vasculitis, PSGN, MPGN, IgA etc.
12/19/12	SK	Nephrotic syndromes: FSGS, Min. change, MGN etc
12/26/12	CG	Renal Ca, PO4 and Mg handling
1/2/13	RR	Acid Base 2
1/9/13	WW	Pregnancy: normal physiology , GFR, BP, Na, H2O, acid base etc.
1/16/13	MS	Home HD
1/23/13	SK	Ethical Issues of Nephrology: non-transplant
1/30/13	WW	Renal complications of pregnancy and pregnancy in ESRD (dialysis and transplantation)
2/6/13	SS	Allograft dysfunction (non-disease-recurrence)
2/13/13	CG	Tubulointerstitial diseases
2/20/13	MS	HD acute complications/emergencies
2/27/13	MS	HD chronic complications, amyloid etc
3/6/13	RR	Urine Chemistries
3/13/13	WW	Metabolic alkalosis: generation and maintenance
3/20/13	MS	HD for toxicities and other uses (hypothermia etc)
3/27/13	CG	Renal osteodystrophy
4/3/13		NKF Spring meetings
4/10/13	SF	The Business of ESRD, Practice management
4/17/13	SK	KT/V HD: Clinical Significance: National Cooperative Study and HEMO Study
4/24/13	SK	PET and PD membrane failure
5/1/13	WW	Thrombotic Microangiopathy
5/8/13	WW	Nephrolithiasis and lithotripsy
5/15/13	WW	Renovascular HTN
5/22/13	CG	Plasmapheresis
5/29/13	MS	Geriatric nephrology
6/5/13	BL	Tx, recurrent diseases in allograft
6/12/13	RR	CRRT: CVVH, CVVHD, CVVHDF
6/19/13	CG	Nephrology Board Preparation
6/26/13		Make-up

Core Competencies

The ACGME has identified six “Core Competencies” applicable to all physicians in training that require specific education and documentation of completion. The six general competencies are:

- 1) Patient Care
- 2) Medical Knowledge
- 3) Professionalism
- 4) Systems-based Practice
- 5) Practice-based Learning and Improvement
- 6) Interpersonal and Communication Skills

The Core Competencies are addressed in each of the Appendices D-J that list the Goals and Objectives for each of the Rotations.

In addition, all Fellows are required to prepare Medical Summaries on all end-stage renal disease (ESRD) patients entering our dialysis program. These are comprehensive documents that not only cover the standard medical history (with HPI, PMH, PSH, SH, medications and allergies etc), but also includes information on the dialysis modality decision, transplantation decisions and dialysis access decisions. The Fellows are also required to dictate practice-specific discharge summaries (independent from the standard discharge summary prepared by the patient’s primary Attending or housestaff) on all patients within our practice that were hospitalized. The Fellows, when they rotate on the out-patient Hemodialysis rotation, are also required to write an “Annual Dialysis Patient Medical Summary” which updates the original ESRD Medical Summary and includes PMH, PSH, access history, problem list and transplant status. We feel that these are excellent examples of “System based practice” and “Practice-based learning and improvement” and aid in teaching the fellows specific approaches to the practice of nephrology that may improve patient care. The Fellows are also required to input data into our Renal Biopsy Registry in which all renal biopsies are documented, with blood pressure, bleeding times, all if any complications, and number of glomeruli obtained, etc. These cumulative data are discussed with the fellows annually and we feel that this is an excellent example of Practice-based learning and improvement. The Fellows give approximately 4 conferences each year. These are always based on topics that arise in the care of patients in the hospital or out-patient clinics. Some of these presentations are Journal Clubs. All of these presentations are based on comprehensive literature reviews and we feel are excellent tools to help understand the importance of Practice-based learning and improvement.

All competencies are part of every evaluation form of Fellows by Faculty.

Milestones

The ACGME has identified 24 subspecialty Milestones www.acgme.Milestones that the CCC reports for each Fellow twice a year. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME competencies that describe the development of competence from an early subspecialty learner up to and beyond that expected for unsupervised practice.

Fellows are evaluated for essentially all their activities, and each evaluation question is linked to one or more of the 24 Milestones. The Milestones are linked to the Curriculum as follows:

Milestone	General Consult Service	Transp. Consult Service	Out-pt HD Service	Out-pt PD/HHD Service	Int. Rad. Service	Pediatric Neph. Service	Renal Path. Rotation	Cont. Clinics	Fellow Conf. Present.
Gathers and synthesizes essential and accurate information to define each patient's clinical problem(s) (PC1)	X	X	X	X		X		X	
Develops and achieves comprehensive management plan for each patient (PC2)	X	X	X	X		X		X	
Manages patients with progressive responsibility and independence (PC3)	X	X	X	X				X	
Demonstrates skill in performing and interpreting invasive procedures (PC4a)	X	X			X		X	X	
Demonstrates skill in performing and interpreting non-invasive procedures (PC4b)	X	X	X	X		X		X	
Requests and provides consultative care (PC5)	X	X	X	X		X		X	
Possesses Clinical Knowledge (MK1)	X	X	X	X	X	X	X	X	X
Knowledge of diagnostic testing/procedures (MK2)	X	X	X	X	X		X	X	
Scholarship (MK3)	X	X						X	X
Works effectively within interprofessional team (SBP1)	X	X	X	X					
Recognizes system error and advocates for system improvement (SBP2)	X		X	X				X	
Identifies forces that impact cost of health care, and advocates for and practices cost-effective care (SBP3)	X	X	X	X				X	
Transitions patients effectively within and across health delivery systems (SBP4)	X	X	X	X				X	
Monitors practice with a goal for improvement (PBL1)	X		X	X				X	
Learns and improves via performance audit (PBL2)	X	X						X	Inservice Exam
Learns and improves via feedback (PBL3)	X	X	X	X		X	X	X	X
Learns and improves at the point of care (PBL4)	X	X	X	X		X		X	
Has professional and respectful interactions with patients, caregivers, members of the interprofessional team (PROF1)	X	X	X	X				X	
Accepts responsibility and follows through on tasks (PROF2)	X	X	X	X				X	
Responds to each patient's unique characteristics and needs (PROF3)	X	X	X	X				X	
Exhibits integrity and ethical behavior in professional conduct (PROF4)	X	X	X	X				X	
Communicates effectively with patients and caregivers (ICS1)	X	X	X	X		X		X	
Communicates effectively in interprofessional teams (ICS2)	X	X	X	X		X		X	
Appropriate utilization and completion of health records (ICS3)	X	X	X	X				X	

Appendix A: Resident Duty Hours and the Working Environment

1. Supervision of Residents

- a. All patient care must be supervised by qualified faculty. The program director must ensure, direct, and document adequate supervision of residents at all times. Residents must be provided with rapid, reliable systems for communicating with supervising faculty.
- b. Faculty schedules must be structured to provide residents with continuous supervision and consultation.
- c. Faculty and residents must be educated to recognize the signs of fatigue and adopt and apply policies to prevent and counteract the potential negative effects.

2. Duty Hours

- a. Duty hours are defined as all clinical and academic activities related to the residency program, i.e., patient care (both inpatient and out-patient), 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.
- b. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.
- c. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a four week period, inclusive of call. One day is defined as one continuous 24- hour period free from all clinical, educational, and administrative activities.
- d. A-10 hour time period for rest and personal activities must be provided between all daily duty periods, and after in-house call.

3. On-Call Activities

The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24 hour period. In-house call is defined as those duty hours beyond the normal work day when residents are required to be immediately available in the assigned institution.

- a. In-house call must occur no more frequently than every third night, averaged over a four-week period.
- b. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6 additional hours to participate in didactic activities, maintain continuity of medical and surgical care, transfer care of patients, or conduct out-patient continuity clinics.
- c. No new patients may be accepted after 24 hours of continuous duty except in out-patient continuity clinics. A new patient is defined as any patient for whom the resident has not previously provided care.
- d. At-home call (pager call) is defined as call taken from outside the assigned institution.
 - 1.) The frequency of at-home call is not subject to the every third night limitation. However, at-home call must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.
 - 2.) When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.

3.) The program director and the faculty must monitor the demands of at-home call in their programs and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.

4. Moonlighting

a. Because residency education is a full-time endeavor, the program director must ensure that moonlighting does not interfere with the ability of the resident to achieve the goals and objectives of the educational program.

b. The program director must comply with the sponsoring institution's written policies and procedures regarding moonlighting, in compliance with the Institutional Requirements III. D.1.k.

c. Moonlighting that occurs within the residency program and/or the sponsoring institution or the non-hospital sponsor's primary clinical site(s), i.e., internal moonlighting, must be counted toward the 80-hour weekly limit on duty hours.

5. Oversight

a. Each program must have written policies and procedures consistent with the Institutional and Program Requirements for resident duty hours and the working environment. These policies must be distributed to the residents and the faculty. Monitoring of duty hours is required with frequency sufficient to ensure an appropriate balance between education and service.

b. Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create resident fatigue sufficient to jeopardize patient care.

6. Duty Hours Exception

An RRC may grant exceptions for up to 10 % of the 80-hour limit, to individual programs based on a sound educational rationale. However, prior permission of the institution's GMEC is required.

Appendix B: Nephrology Fellow Job/Procedures Descriptions

- 1) The Nephrology Fellowship consists of Fellows at each of two levels of training, first year Fellows (PGY 4) and second year fellows (PGY 5). All Nephrology Fellows have completed training in an ACGME approved Internal Medicine program prior to commencing training in the Fellowship.
- 2) The ultimate responsibility for care rendered by the Nephrology Fellow is via a Nephrology Attending.
- 3) Supervision can be provided by an Attending Physician through Direct, Indirect, Oversight Supervision.
- 4) All Nephrology fellows are permitted to perform routine care procedures such as histories and physical examinations, order writing, and documentation of same, without direct observation by a supervisory person.
- 5) Certain technical procedures are necessary for training:
 - a. Percutaneous renal biopsy: All renal biopsy procedures are performed under Direct supervision of an Attending Physician.
 - i. Native and Transplant Kidney biopsy under ultrasound guidance
 - b. Placement of temporary vascular access for hemodialysis and related procedures: Placement of vascular access lines is performed by the Fellow on the Clinical Service. These lines are placed under Direct supervision by an Attending physician until competence is determined by the Program Director.
 - c. Acute peritoneal dialysis: Orders for acute peritoneal dialysis are written by the Fellow on the Clinical service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that Service.
 - d. Chronic peritoneal dialysis: Orders for chronic peritoneal dialysis are written by the Fellow on the out-patient Peritoneal Dialysis rotation. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
 - e. Acute hemodialysis: Orders for acute hemodialysis are written by the Fellow on the Clinical Service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
 - f. Chronic hemodialysis: Orders for chronic hemodialysis are written by the Fellow on the out-patient Hemodialysis service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
 - g. Continuous renal replacement therapy: Orders for continuous renal replacement therapies are written by the Fellow on the on the Clinical service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that Service.
 - h. Plasmapheresis: Orders for plasmapheresis are written by the Fellow on the on the Transplant service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that Service.

Expertise acquired by the end of the first year of Nephrology Fellowship training includes placement of temporary vascular access for hemodialysis and related procedures acute peritoneal dialysis, chronic peritoneal dialysis, acute hemodialysis, chronic hemodialysis, plasmapheresis, continuous renal replacement therapy and urinalysis.

Expertise acquired by the end of the second year of Nephrology Fellowship training: percutaneous renal biopsy.

It is the Fellow's responsibility to keep track of above procedures a and b through the procedure tracking section of MedHub.

Appendix C: Nephrology Fellow Research Proposal

Participating Fellow(s): _____

Supervising Attending(s): _____

Project description:

Hypothesis to be tested:

Proposed Statistical analysis:

Funding (if applicable):

Fellow(s) _____ Date _____

Attending(s) _____ Date _____

Approval _____ Roger A. Rodby, MD

Appendix D: Goals and Objectives of the Rotation “Clinical Service”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of *Medical Knowledge*: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to *Patient Care*. Although much of this information is taught during and through daily patient rounds, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“*Practice-based learning and improvement*”).

- 1) Disorders of mineral metabolism, including nephrolithiasis and renal osteodystrophy
- 2) Disorders of fluid, electrolyte, and acid-base regulation
- 3) Acute renal failure
- 4) Chronic renal failure and its management by conservative methods, including nutritional management of uremia
- 5) End-stage renal disease
- 6) Hypertensive disorders
- 7) Renal disorders of pregnancy
- 8) Urinary tract infections
- 9) Tubulointerstitial renal diseases, including inherited diseases of transport, cystic diseases, and other congenital disorders
- 10) Glomerular and vascular diseases, including the glomerulonephritides, diabetic nephropathy, and atheroembolic renal disease
- 11) Disorders of drug metabolism and renal drug handling
- 12) Genetic and inherited renal disorders
- 13) Geriatric aspects of nephrology, including disorders of the aging kidney and urinary tract, including physiology and pathology of the aging kidney and drug dosing and renal toxicity in elderly patients
- 14) Indications for and interpretations of radiologic tests of the kidney and urinary tract
- 15) Drug dosage modification during dialysis and other extracorporeal therapies
- 16) Evaluation and management of medical complications in patients during and between dialyses and other extracorporeal therapies, including dialysis access, and an understanding of the pathogenesis and prevention of such complications
- 17) Long-term follow-up of patients undergoing long-term dialysis, including their dialysis prescription and modification and assessment of adequacy of dialysis
- 18) Understanding of the principles and practice of peritoneal dialysis, including the establishment of peritoneal access, the principles of dialysis catheters, and how to choose appropriate catheters
- 19) Understanding of the technology of peritoneal dialysis, including the use of automated cyclers
- 20) Assessment of peritoneal dialysis efficiency, using peritoneal equilibration testing and the principles of peritoneal biopsy
- 21) An understanding of how to write a peritoneal dialysis prescription and how to assess peritoneal dialysis adequacy
- 22) An understanding of the complications of peritoneal dialysis, including peritonitis and its treatment, exit site and tunnel infections and their management, hernias, plural effusions, and other less common complications and their management

- 23) An understanding of the special nutritional requirements of patients undergoing hemodialysis and peritoneal dialysis
- 24) The pharmacology of commonly used medications and their kinetic and dosage alteration with peritoneal dialysis

The Fellow will also learn the:

- 1) Evaluation and selection of patients for acute hemodialysis or continuous renal replacement therapies
- 2) Writing of acute hemodialysis orders including decisions related to anticoagulation, potassium, calcium, sodium and bicarbonate dialysate concentrations as well as appropriate fluid removal with ultrafiltration
- 3) Evaluation and management of medical complications in patients during acute hemodialysis and other extracorporeal therapies including dialyzer reactions, air emboli, hemolytic reactions, and hemorrhage.
- 4) Complications of vascular access and how to evaluate for recirculation
- 5) Evaluation and treatment of poor vascular access blood flow
- 6) Utilization of thrombolytics for poor access function

In addition, it is expected that the Fellow will learn the, or develop an:

- 1) Evaluation and selection of patients for acute hemodialysis or continuous renal replacement therapies
- 2) Evaluation of end-stage renal disease patients for various forms of therapy and their instruction regarding treatment options

Systems-based Practice:

The initiation of a patient into an end-stage renal disease program (directly above 1&2) encompasses a large percentage of the time a Fellow interacts with patients on the in-patient Consult Service and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate with patients, families and other health professionals. It assumes and requires the Fellow working effectively within the health care system that provides these therapies and determines the appropriate modality of treatment for each patient. Specific patient needs must be taken in consideration including ambulation, socioeconomic factors, a patient's self-confidence, a patient's living situation and family support. In addition there must be effective communication between The Fellow and the ancillary services within and outside of the hospital, e.g. Social workers, Dieticians, Access Surgeons, Discharge planners, and Primary physicians. The Fellow must show compassion for patients entering an ESRD program and respect patients' autonomy and privacy while discussing ESRD options and sites of placement.

The Fellows are required to dictate practice-specific discharge summaries (independent from the standard discharge summary prepared by the patient's primary Attending or housestaff) on all patients within our practice that were hospitalized. We feel that this is an excellent example of "System based practice" and aids in teaching the Fellows specific approaches to the practice of nephrology that may improve patient care.

Patient Care:

Renal diseases are complicated for patients and families to understand, comprehend, and often have devastating effects on quality of life as well as life expectancy. Fellows must be cognizant of these concerns and be able to provide care that is compassionate, appropriate, educational and effective for the promotion of physical as well as mental health, a critical component to the entering of an end-stage renal disease program. This requires direct meetings and conversations with appropriate family in addition to the patient. Adequate *Medical Knowledge* is mandatory to achieve these goals, as *Patient Care* requires offering and explaining all treatment options: Dialysis or no-dialysis, hemodialysis, peritoneal dialysis, home-hemodialysis, renal transplantation.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will improve the care of all patients, nothing should seem routine. The treatments for the vast array of renal diseases are often complicated and even controversial. The Fellows must explore all treatment options utilizing multiple resources: the Attending physician, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the patient and family in a way that is understandable and leads to patients and their families being part of the treatment decision process. The Fellow is expected to serve as a role model in this regard to the residents and Medical students on the service. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by their Attending after each Clinical Service rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As consultants themselves, they must interact directly with patients, families, other Attending and Fellow consultants, Residents, and Medical Students, Social Workers, Dieticians and Discharge Planners. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with renal disease, it is important to respect patient privacy. Finally, renal disease crosses all ages, races, genders, socioeconomic classes and sexual orientations and the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

Renal diseases are often complicated and have potentially devastating outcomes. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records by overseeing the Residents notes.

Technical Skills (see also next section "Delineation...")

The Fellow should gain expertise in the following procedures:

- 1) Placement of temporary vascular access for hemodialysis and related procedures
- 2) Urinalysis
- 3) Percutaneous biopsy of both autologous and transplanted kidneys
- 4) Peritoneal dialysis
- 5) Acute and long-term hemodialysis
- 6) Continuous renal replacement therapy

Delineation of Fellow Responsibilities by Year

The requirements of this Rotation do not differ between first and second year Fellows. This rotation will be completed 4 times during the two-year period of Fellowship. It is understood that a Fellow's first rotation month on this service (of the 4) will require a period of orientation to the role of Fellow on the Service as the transition from Resident to Fellow may be daunting at first. However, it is the responsibility of the Attending to be cognizant of this and provide direction and feedback as to the success of this transition. It is expected that by the end of a Fellow's first month on this rotation, that the Fellow will have successfully made this transition. From that point on, it is expected that the Fellow take full responsibility for patient care and management by supervising such care as determined through the patient rounds and subsequent discussions and interactions between the Attending, Fellow, Medical Residents, and Medical Students. It is the responsibility of the Attending to evaluate (<https://rush.medhub.com/index.mh>) the Fellows in the context of their Fellowship year. In other words, as the Fellow transitions from first year Fellow to second year Fellow, the Fellow is expected to have a higher level of Medical Knowledge and to be 100% in control of the service in terms of Patient Care.

Certain technical skills may occur while on this service:

- 1) Percutaneous renal biopsy: All renal biopsy procedures are performed under Direct supervision of an Attending Physician.
 - ii. Native kidney under ultrasound guidance
 - iii. Transplant kidney under ultrasound guidance

- 2) Placement of temporary vascular access for hemodialysis and related procedures: Placement of vascular access lines is performed by the Fellow on the Clinical Service. These lines are placed under Direct supervision by an Attending physician until competence is determined by the Program Director.
- 3) Acute peritoneal dialysis: Orders for acute peritoneal dialysis are written by the Fellow on the Clinical service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that Service.
- 4) Chronic peritoneal dialysis: Orders for chronic peritoneal dialysis are written by the Fellow on the out-patient Peritoneal Dialysis rotation. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
- 5) Acute hemodialysis: Orders for acute hemodialysis are written by the Fellow on the Clinical Service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
- 6) Chronic hemodialysis: Orders for chronic hemodialysis are written by the Fellow on the out-patient Hemodialysis service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that service.
- 7) Continuous renal replacement therapy: Orders for continuous renal replacement therapies are written by the Fellow on the Clinical service. These orders are written under Direct supervision of an Attending physician for the Fellow's first month on that Service.

Expertise acquired by the end of the first year of Nephrology Fellowship training includes placement of temporary vascular access for hemodialysis and related procedures, acute peritoneal dialysis, chronic peritoneal dialysis, acute hemodialysis, chronic hemodialysis, continuous renal replacement therapy and urinalysis).

Expertise acquired by the end of the second year of Nephrology Fellowship training: percutaneous renal biopsy.

It is the Fellow's responsibility to keep track of above procedures a and b through the procedure tracking section of MedHub.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix E: Goals and Objectives of the Rotation “Renal Transplantation”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of **Medical Knowledge**: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to **Patient Care**. Although much of this information is taught during and through daily patient rounds, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“**Practice-based learning and improvement**”).

- 1) Immediate postoperative management of transplant recipients, including administration of immunosuppressants, evaluation of primary nonfunction
- 2) Clinical diagnosis of all forms of rejection including laboratory, histopathologic, and imaging techniques
- 3) Medical management of rejection, including use of immunosuppressant drugs and other agents
- 4) Recognition and medical management of the surgical and nonsurgical complications of transplantations
- 5) Long-term follow-up of transplant recipients in the ambulatory setting
- 6) Interpretation of histopathology of the renal transplant
- 7) Biology of transplantation rejection
- 8) Indications for and contraindications to renal transplantation
- 9) Principles of transplant recipient evaluation and selection
- 10) Principles of evaluation of transplant donors, both live and cadaveric, including histocompatibility testing
- 11) Principles of organ harvesting, preservation, and sharing
- 12) Psychosocial aspects of organ donation and transplantation
- 13) The pathogenesis and management of urinary tract infections
- 14) The pathogenesis and management of acute renal failure
- 15) Indications for and interpretations of radiologic tests of the kidney and urinary tract
- 16) Disorders of fluids and electrolytes and acid-base balance in the renal transplant patient
- 17) The HLA immunologic system
- 18) Evaluation and selection of transplant candidates
- 19) Pre-operative evaluation and preparation of transplant recipients and donors
- 20) Plasmapheresis

System-Based Practice:

Skills 18 & 19 encompass a large percentage of the time a Fellow interacts with patients on the in-patient Transplant Service. This skill needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate with patients, families and other health professionals. It assumes and requires the Fellow working effectively within the health care system that provides these therapies and determines the appropriate transplant option for each patient. Specific patient needs must be taken in consideration, ambulation, socioeconomic factors, a patient’s self-confidence, a patient’s living situation, family support and ability to afford transplant anti-rejection medication. In addition there must be effective communication between The Fellow and the ancillary services within and outside of the hospital, e.g. Social workers, Dieticians, Transplant Surgeons,

Discharge planners, and Primary physicians. The Fellow must show compassion for patients as they try to secure a renal transplant, and must respect patients' autonomy and privacy while discussing the various pros and cons of renal transplant.

Patient Care:

End-stage renal disease and the pros and cons of renal transplantation and the various options (cadaver, living-related, living-unrelated) are complicated topics and decisions for patients and families to understand and comprehend. End-stage renal disease itself can have devastating effects on a patient's quality of life as well as life expectancy, both of which may improve considerably with a successful renal transplant. Fellows must be cognizant of these concerns and be able to provide care that is compassionate, appropriate, educational and effective for the promotion of physical as well as mental health, all critical to the long-term success of a renal transplant. This requires direct meetings and conversations with appropriate family in addition to the patient. Adequate *Medical Knowledge* related to the intricacies of renal transplantation is mandatory to achieve these goals, as *Patient Care* requires offering and explaining each transplant treatment options: cadaver, living-related, living-unrelated, and "extended donor" transplants.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will improve the care of all patients, nothing should seem routine. Renal transplant options and who should be considered a candidate for renal transplantation are often complicated and even controversial topics. The Fellows must explore all treatment options utilizing multiple resources: the Nephrology Attending Transplant Physician, the renal Transplant Surgeon, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the patient and family in a way that is understandable and leads to patients and their families being part of the treatment decision process. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by their Attending after each Transplant Service rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As consultants themselves, they must interact directly with patients, families, other Attending and Fellow consultants, Residents, and Medical Students, Social Workers, Dieticians and Discharge Planners. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with a renal transplant, it is important to respect patient privacy. Finally, renal

disease crosses all ages, races, genders, socioeconomic classes and sexual orientations and the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

End-stage renal disease has a potentially devastating outcome. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records.

Technical Skills (see also next section "Delineation...")

- 1) Percutaneous biopsy of transplanted kidneys

Delineation of Fellow Responsibilities by Year:

The requirements of this Rotation do not differ between first and second year Fellows. This rotation will be completed 4 times during the two-year period of Fellowship. It is understood that a Fellow's first rotation month on this service (of the 4) will require a period of orientation to the role of Fellow on the Service as the transition from Resident to Fellow may be daunting at first. However, it is the responsibility of the Attending to be cognizant of this and provide direction and feedback as to the success of this transition. It is expected that by the end of a Fellow's first month on this rotation, that the Fellow will have successfully made this transition. From that point on, it is expected that the Fellow take full responsibility for patient care and management by supervising such care as determined through the patient rounds and subsequent discussions and interactions with the Attending. It is the responsibility of the Attending to evaluate (<https://rush.medhub.com/index.mh>) the Fellows in the context of their Fellowship year. In other words, as the Fellow transitions from first year Fellow to second year Fellow, the Fellow is expected to have a higher level of Medical Knowledge and to be 100% in control of the service in terms of Patient Care.

Certain technical skills may occur while on this service:

- a. Percutaneous renal biopsy: All renal biopsy procedures are performed under direct supervision of an Attending Physician.
 - 1) Transplant kidney under ultrasound guidance
- b. Placement of temporary vascular access for hemodialysis and related procedures: Placement of vascular access lines are placed under direct supervision by an Attending physician or a second year Nephrology Fellow for the Fellow's first month of rotation.
- c. Acute peritoneal dialysis: Orders for acute peritoneal dialysis are written by the Fellow under direct supervision of an Attending physician for the Fellow's first month on that Service.

- d. Acute hemodialysis: Orders for acute hemodialysis are written by the Fellow under direct supervision of an Attending physician for the Fellow's first month on that service.
- e. Continuous renal replacement therapy: Orders for continuous renal replacement therapies are written by the Fellow under direct supervision of an Attending physician for the Fellow's first month on that Service.

Expertise acquired by the end of the first year of Nephrology Fellowship training includes placement of temporary vascular access for hemodialysis and related procedures, acute peritoneal dialysis, chronic peritoneal dialysis, acute hemodialysis, chronic hemodialysis, continuous renal replacement therapy and urinalysis).

Expertise acquired by the end of the second year of Nephrology Fellowship training: percutaneous renal biopsy.

It is the Fellow's responsibility to keep track of above procedures a and b through the procedure tracking section of MedHub.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix F: Goals and Objectives of the Rotation “Chronic Hemodialysis”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of *Medical Knowledge* for chronic hemodialysis: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to *Patient Care*. Although much of this information is taught during rounding in the hemodialysis unit and in reviewing the Fellows’ monthly notes with the Attending, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“*Practice-based learning and improvement*”).

- 1) Writing of chronic hemodialysis orders including time on dialysis, blood flow rate, determination of dry weight, dialysate flow rate, dialysate electrolyte composition
- 2) The pharmacology of commonly used medications and their kinetic and dosage alteration with hemodialysis
- 3) Evaluation and management of medical complications in patients during acute hemodialysis and other extracorporeal therapies including dialyzer reactions, air emboli, hemolytic reactions, and hemorrhage.
- 4) Long-term follow-up of patients undergoing long-term hemodialysis, including their dialysis prescription and modification and assessment of adequacy of dialysis, management of anemia, osteodystrophy, and blood pressure
- 5) Understanding of the hemodialysis machine and each of the pumps, pressure monitors and other data measured throughout the treatment
- 6) Complications of vascular access and how to evaluate for recirculation
- 7) Utilization of thrombolytics for poor access function
- 8) Drug dosage modification during dialysis and other extracorporeal therapies
- 9) Evaluation and treatment of poor vascular access blood flow
- 10) Dialysis water treatment, delivery systems, and reuse of artificial kidneys
- 11) The artificial membranes used in hemodialysis and biocompatibility
- 12) The psychosocial and ethical issues of dialysis
- 13) Understanding of the special nutritional requirements of patients undergoing hemodialysis
- 14) Understanding of the special social services requirements of patients undergoing hemodialysis

Systems-based Practice:

Some of the specific factors in the management of patients in an end-stage renal disease program (13 & 14) encompass a large percentage of the time a Fellow interacts with patients in the hemodialysis unit and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate with patients, families and other health professionals. It assumes and requires the Fellow working effectively within the health care system that provides these therapies and determines the appropriate modality of treatment for each patient. Specific patient needs must be taken in consideration including ambulation, socioeconomic factors, a patient’s self-confidence, a patient’s living situation and family support. In addition there must be effective communication between The Fellow and the ancillary services within and outside of the hemodialysis unit, e.g. Social

workers, Dieticians, Access Surgeons, Discharge planners, and Primary physicians. The Fellow must show compassion for patients entering an ESRD program and respect patients' autonomy and privacy while discussing aspects of the hemodialysis therapy.

The Fellows are required to write an "Annual Dialysis Patient Medical Summary" on a predetermined list of patients on Chronic Hemodialysis, which updates the original ESRD Medical Summary and includes PMH, PSH, access history, problem list and transplant status. We feel that this is an excellent example of "System based practice" and aids in teaching the fellows specific approaches to the practice of nephrology that may improve patient care.

Patient Care:

The management of patients receiving out-patient hemodialysis proposes many challenges including management of anemia, adequacy of dialysis, dry weight determinations, renal osteodystrophy, and maintenance of an adequate hemodialysis blood access. This requires working as a team with multiple ancillary services as well as the patients family. In addition, end-stage renal disease itself can have devastating effects on a patient's quality of life as well as life expectancy. Fellows must be cognizant of these concerns and be able to provide care that is compassionate, appropriate, educational and effective for the promotion of physical as well as mental health, all critical to the long-term success of a patient receiving hemodialysis. This requires direct meetings and conversations with appropriate family members in addition to the patient. Adequate *Medical Knowledge* related to the intricacies of hemodialysis is mandatory to achieve these goals, as *Patient Care* also requires offering and explaining the need for dietary restriction, phosphate binders, and dialysis compliance.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will improve the care of all patients, nothing should seem routine. The Fellows must explore all treatment options utilizing multiple resources: the Attending physician, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the patient and family in a way that is understandable and leads to patients and their families being part of the treatment decision process. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by their Attending after each Chronic Hemodialysis rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As they manage the patient on chronic hemodialysis, they must interact directly with patients, families, other Attendings, Social Workers and Dieticians. They must realize that the common goal is patient care that is

compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with receiving chronic hemodialysis, it is important to respect the patient's privacy which can be challenging in the setting of an open hemodialysis unit. As the need for hemodialysis crosses all ages, races, genders, socioeconomic classes and sexual orientations, the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

End-stage renal disease has a potentially devastating outcome. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records.

Delineation of Fellow Responsibilities by Year

The requirements of this Rotation do not differ between first and second year Fellows. This rotation will be completed 4-6 times during the two-year period of Fellowship.

It is expected that the Fellow take full responsibility for patient care and management by supervising such care as determined through the patient rounds and subsequent discussions and interactions with the Attending.

It is the responsibility of the Attending to evaluate (<https://rush.medhub.com/index.mh>) Fellows in the context of their Fellowship year. In other words, As the Fellow transitions from first year Fellow to second year Fellow, The Fellow is expected to have a higher level of Medical Knowledge and to be 100% in control of the service in terms of Patient Care.

Certain technical procedures may occur while on this service:

- a. Chronic hemodialysis: Orders for chronic hemodialysis are written by the Fellow on the out-patient Hemodialysis service. These orders are written under direct supervision of an Attending physician for the Fellow's first month on that service.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix G: Goals and Objectives of the Rotation “Peritoneal Dialysis”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of *Medical Knowledge* for chronic peritoneal dialysis: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to *Patient Care*. Although much of this information is taught during peritoneal dialysis clinic patient visits, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“*Practice-based learning and improvement*”).

- 1) Understanding of the principles and practice of peritoneal dialysis, including the establishment of peritoneal access, the principles of dialysis catheters, and how to choose appropriate catheters
- 2) Understanding of the technology of peritoneal dialysis, including the use of automated cyclers
- 3) Assessment of peritoneal dialysis efficiency, using peritoneal equilibration testing and the principles of peritoneal biopsy
- 4) An understanding of how to write a peritoneal dialysis orders
- 5) The pharmacology of commonly used medications and their kinetic and dosage alteration with peritoneal dialysis
- 6) Long-term follow-up of patients undergoing long-term peritoneal dialysis, including their dialysis prescription and modification and assessment of adequacy of dialysis, management of anemia, osteodystrophy, and blood pressure
- 7) An understanding of the complications of peritoneal dialysis, including peritonitis and its treatment, exit site and tunnel infections and their management, hernias, plural effusions, sclerosing encapsulating peritonitis, leaks, and other less common complications and their management
- 8) An understanding of the special nutritional requirements of patients peritoneal dialysis
- 9) An understanding of the special social services requirements of patients peritoneal dialysis

Systems-based Practice:

Some of the specific factors in the management of patients in a peritoneal dialysis program (6-9 above) encompass a large percentage of the time a Fellow interacts with patients receiving peritoneal dialysis and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate with patients, families and other health professionals. It assumes and requires the Fellow working effectively within the health care system that provides these therapies and determines the appropriate modality of treatment for each patient. Specific patient needs must be taken in consideration including ambulation, socioeconomic factors, a patient’s self-confidence, a patient’s living situation, family support and the ability of the patient or a family member to perform peritoneal dialysis as well as adequate room to store the large amount of supplies needed for chronic peritoneal dialysis. In addition there must be effective communication between The Fellow and the ancillary services within and outside of peritoneal dialysis clinic, e.g. Social workers, Dieticians, Access Surgeons, Discharge planners, and Primary physicians. The Fellow

must show compassion for patients beginning peritoneal dialysis and respect patients' autonomy and privacy while discussing aspects of the peritoneal dialysis.

Patient Care:

The management of patients receiving peritoneal dialysis proposes many challenges, including management of anemia, adequacy of dialysis, dry weight determinations, renal osteodystrophy, and recognition of catheter related problems. This requires working as a team with multiple ancillary services as well as the patient's family. In addition, end-stage renal disease itself can have devastating effects on a patient's quality of life as well as life expectancy. Fellows must be cognizant of these concerns and be able to provide care that is compassionate, appropriate, educational and effective for the promotion of physical as well as mental health, all critical to the long-term success of a patient receiving peritoneal dialysis. This requires direct meetings and conversations with appropriate family members in addition to the patient. Adequate **Medical Knowledge** related to the intricacies of peritoneal dialysis is mandatory to achieve these goals, as **Patient Care** also requires offering and explaining the need for dietary restriction, phosphate binders, and dialysis compliance.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will improve the care of all patients, nothing should seem routine. The Fellows must explore all treatment options utilizing multiple resources: the Attending physician, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the patient and family in a way that is understandable and leads to patients and their families being part of the treatment decision process. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by their Attending after each Peritoneal Dialysis rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As they manage the patient on chronic peritoneal dialysis, they must interact directly with patients, families, other Attendings, Social Workers and Dieticians. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with receiving peritoneal dialysis, it is important to respect a patient's privacy. As the need for peritoneal dialysis crosses all ages, races, genders, socioeconomic classes and sexual orientations, the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

End-stage renal disease has a potentially devastating outcome. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records.

Delineation of Fellow Responsibilities by Year

The requirements of this Rotation do not differ between first and second year Fellows. This rotation will be completed at least 4 times during the two-year period of Fellowship. It is understood that a Fellow's first rotation month on this service will require a period of orientation and it is the responsibility of the Attending to be cognizant of this and provide direction and feedback as to the success of this transition. It is expected that by the end of a Fellow's first month on this rotation, that the Fellow will have successfully made this transition. From that point on, it is expected that the Fellow take full responsibility for patient care and management by supervising such care as determined through the patient visits in clinic and subsequent discussions and interactions with the Attending. It is the responsibility of the Attending to evaluate (<https://rush.medhub.com/index.mh>) the Fellows in the context of their Fellowship year. In other words, as the Fellow transitions from first year Fellow to second year Fellow, the Fellow is expected to have a higher level of Medical Knowledge and to be 100% in control of the service in terms of Patient Care.

Certain technical skills may occur while on this service:

- b. Chronic peritoneal dialysis: Orders for chronic peritoneal dialysis are written by the Fellow on the out-patient Peritoneal Dialysis rotation. These orders are written under direct supervision of an Attending physician for the Fellow's first month on that service.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix H: Goals and Objectives of the Rotation “Pediatric Nephrology”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of *Medical Knowledge*: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to *Patient Care*. Although much of this information is taught during and through daily patient rounds, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“*Practice-based learning and improvement*”).

- 1) Congenital and acquired disorders of fluid, electrolyte, and acid-base regulation
- 2) Acute renal failure in the neonate, infant and adolescent
- 3) End-stage renal disease management in the pediatric population and the use of growth hormone
- 4) Secondary hypertensive disorders seen in the pediatric population
- 5) Urinary tract infections and reflux nephropathy
- 6) Tubulointerstitial renal diseases, including inherited diseases of transport, cystic diseases, and other congenital disorders
- 7) Glomerular diseases common to the pediatric population
- 8) Drug dosing in pediatric patients
- 9) Indications for and interpretations of radiologic tests of the urinary tract

The Fellow should gain expertise in the following procedures:

- 1) Percutaneous biopsy of autologous kidneys in infants and adolescents
- 2) Acute hemodialysis in infants and adolescents
- 3) Continuous renal replacement therapy in neonates, infants and adolescents
- 4) Long-term hemodialysis in infants and adolescents

Systems-based Practice:

The specific factors in the management of pediatric patients with end-stage renal disease (4 above) encompass a considerable amount of the time a Fellow spend while on the Pediatric Nephrology Service and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate with patients, families and other health professionals. It assumes and requires the Fellow working effectively within the health care system that provides these therapies and determines the appropriate modality of treatment for each patient. Specific patient needs must be taken in consideration including ambulation, socioeconomic factors, a child’s self-confidence, the child’s living situation, family support and the ability of the child or a family member to contribute to the care of the child. In addition there must be effective communication between The Fellow and the ancillary services within and outside of the pediatric hemodialysis unit, e.g. Social workers, Dieticians, Access Surgeons, Discharge planners, and Primary physicians. The Fellow must show compassion for patients beginning pediatric renal replacement therapy and respect patients’ autonomy and privacy while discussing aspects of the treatment with the child and or the parents.

Patient Care:

Renal diseases are complicated for children and families to understand, comprehend, and often have devastating effects on quality of life as well as life expectancy. This is compounded considerably when dealing with a child. Fellows must be especially cognizant of these concerns and be able to provide care that is compassionate, appropriate, educational and effective for the promotion of physical as well as mental health, a critical component to the entering of an end-stage renal disease program. This requires direct meetings and conversations with appropriate family in addition to the patient. Adequate *Medical Knowledge* is mandatory to achieve these goals, as *Patient Care* requires offering and explaining all treatment options: dialysis or no-dialysis, hemodialysis, peritoneal dialysis, home-hemodialysis, renal transplantation.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will improve the care of all patients, nothing should seem routine. The Fellows must explore all treatment options utilizing multiple resources: the Attending physician, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the patient and family in a way that is understandable and leads to patients and their families being part of the treatment decision process. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by their Attending after each Pediatric Nephrology rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As consultants themselves, they must interact directly with patients, families, other Attending and Fellow consultants, Residents, and Medical Students, Social Workers, Dieticians and Discharge Planners. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with renal disease, it is important to respect patient privacy. Finally, renal disease crosses all races, genders, socioeconomic classes and sexual orientations and the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

Renal diseases are often complicated and have potentially devastating outcomes. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health

professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records by overseeing the Residents notes.

Delineation of Fellow Responsibilities by Year

This rotation is done for only one month during the entire Fellowship.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix I: Goals and Objectives of the Rotation “Renal Pathology”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of **Medical Knowledge**: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to **Patient Care**. Although much of this information is taught during and through pathology histologic slide examination with Dr. Cimbaluk, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“**Practice-based learning and improvement**”).

- 1) Normal renal histology including the recognition of different normal and abnormal cells within the glomerulus and interstitium
- 2) The handling and processing of renal biopsy specimens
- 3) The normal staining characteristics of the trichrome, PAS, H&E, and silver stains
- 4) A systematic approach to reading renal histopathologic slides
- 5) A systematic approach to reading renal immunofluorescence slides
- 6) A systematic approach to reading renal electron micrographs
- 7) The renal histopathologic features of the major nephrotic, nephritic, microvascular, and tubulointerstitial diseases including an understanding of the criteria of acute rejection in the renal transplant

Systems-based Practice:

Interpretation of renal histopathology encompass the vast majority of the time a Fellow spends while on the Renal Pathology rotation and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate the pathology results to other healthcare professionals.

Patient Care:

There is no direct patient care in this rotation.

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will impact on the findings of renal histopathology, nothing should seem routine. The Fellows must explore the literature related to all histologic findings utilizing multiple resources: the Attending Pathologist, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of patient management. This also requires the ability to relay this information and treatment options to the admitting physician in a way that is understandable. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Pathology Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated by Dr. Cimbaluk after each renal Pathology Nephrology rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this

will also help the Fellow identify strengths, deficiencies, and limits in one's knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient with renal disease, it is important to respect patient privacy. Finally, renal disease crosses all ages, races, genders, socioeconomic classes and sexual orientations and the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

Renal diseases are often complicated and have potentially devastating outcomes. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records.

Delineation of Fellow Responsibilities by Year

This rotation is done for only one month during the entire Fellowship.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix J: Goals and Objectives of the Rotation “Interventional Nephrology”

Medical Knowledge:

It is expected that the Fellow will learn the evaluation and management of the following areas of **Medical Knowledge**: This includes an understanding of the clinical and epidemiologic aspects of each of these topics and how it applies to **Patient Care**. Although much of this information is taught during observation in the Interventional Nephrology Suite, it is expected that the Fellow make a habit of localizing and assimilating medical evidence from appropriate medical journals as well as other sources of information technology (“**Practice-based learning and improvement**”).

- 1) The radiologic placement of temporary and tunneled hemodialysis catheters
- 2) The radiologic diagnosis and treatment of problems associated with hemodialysis access including
 - a. thrombosis
 - b. stenosis
 - c. inadequate arterial blood flow
 - d. elevated venous outflow pressure
 - e. central large vein stenosis
 - f. steal syndrome.

Systems-based Practice:

Observation of dialysis access related procedures encompasses the vast majority of the time a Fellow spends while on the Interventional Radiology rotation and needs to be undertaken with an awareness and responsiveness to the larger context of system health care, as well as an ability to effectively communicate the outcome of the procedure results to other healthcare professionals.

Patient Care:

Depending on the case the fellow may assist on procedures

Practice Based Learning and Improvement:

Practice-based learning and improvement is paramount as Fellows and Attendings explore the literature to assimilate scientific evidence that will impact on the evaluation and treatment of access related issues, nothing should seem routine. The Fellows must explore the literature utilizing multiple resources: the Attending Radiologist, recent as well as remote literature, both written and electronic. This requires an understanding of HOW to obtain information as well as How to interpret it in the context of access management. This also requires the ability to relay this information and treatment options to the admitting physician in a way that is understandable. If these approaches are routine, Fellows should be able to establish habits that will lead to life-long standards of care. The Radiology Attending will serve as a role model to the Fellow and help identify strengths and weaknesses, limitations in knowledge and expertise, so that as the Fellow completes training, these habits become second nature to the Fellow. Fellows are evaluated after each interventional radiology rotation. It is expected that the Fellow incorporate this evaluation feedback into daily practice and that this will also help the Fellow identify strengths, deficiencies, and limits in one’s knowledge and expertise.

Professionalism:

All medical care and interactions must occur with the utmost amount of professional behavior. Fellows are now closer to the primary care-taker than ever before in their training career. They must increase their level of professionalism appropriately. As consultants themselves, they must interact directly with other Attending and Fellow consultants, Residents, and Medical Students. They must realize that the common goal is patient care that is compassionate and respectful of all parties (just named) involved. Patient needs always supersede personal needs. Given the many parties involved in the care of a patient requiring radiologic intervention, it is important to respect patient privacy. Finally, renal disease crosses all ages, races, genders, socioeconomic classes and sexual orientations and the Fellow must be aware of the sensitivity of the different needs and concerns as it relates to this diverse population.

Interpersonal and Communication Skills:

Renal diseases are often complicated and have potentially devastating outcomes. Fellows must demonstrate interpersonal and communication skills that are effective, constructive, selfless and appropriate for the level of the other party, whether it be a patient, their family or other health professionals. The Fellow must be able to alter his/her approach based on the education, ethnicity, language skills and socioeconomic status of the patient. The Fellow must also be able to do the same based on the level of health care provider, from Attending physician to Discharge planner. The Fellow must be in direct contact with all parties involved in a patient's care, acting in a consultative role to the whole spectrum of professional health care providers, and this must be done (again) in an effective, constructive and selfless manner. The Fellow must also be directly involved in maintaining comprehensive, legible, problem oriented medical records.

Delineation of Fellow Responsibilities by Year

The Fellow will rotate on out-pt HD 4 months a year and thus may be able to attend up to 32 IN clinics over the course of two years.

Reading Lists:

Reading lists are available on-line. The fellow can download any or all articles/resources by going to Google Docs.

Appendix K: Gifts to Physicians From Industry

Many gifts given to physicians by companies in the pharmaceutical, device, and medical equipment industries serve an important and socially beneficial function. For example, companies have long provided funds for educational seminars and conferences. However, there has been growing concern about certain gifts from industry to physicians. Some gifts that reflect customary practices of industry may not be consistent with the Principles of Medical Ethics. To avoid the acceptance of inappropriate gifts, physicians should observe the following guidelines:

1. Any gifts accepted by physicians individually should primarily entail a benefit to patients and should not be of substantial value. Accordingly, textbooks, modest meals, and other gifts are appropriate if they serve a genuine educational function. Cash payments should not be accepted. The use of drug samples for personal or family use is permissible as long as these practices do not interfere with patient access to drug samples. It would not be acceptable for non-retired physicians to request free pharmaceuticals for personal use or use by family members.
2. Individual gifts of minimal value are permissible as long as the gifts are related to the physician's work (e.g., pens and notepads).
3. The Council on Ethical and Judicial Affairs defines a legitimate "conference" or "meeting" as any activity, held at an appropriate location, where (a) the gathering is primarily dedicated, in both time and effort, to promoting objective scientific and educational activities and discourse (one or more educational presentation(s) should be the highlight of the gathering), and (b) the main incentive for bringing attendees together is to further their knowledge on the topic(s) being presented. An appropriate disclosure of financial support or conflict of interest should be made.
4. Subsidies to underwrite the costs of continuing medical education conferences or professional meetings can contribute to the improvement of patient care and therefore are permissible. Since the giving of a subsidy directly to a physician by a company's representative may create a relationship that could influence the use of the company's products, any subsidy should be accepted by the conference's sponsor who in turn can use the money to reduce the conference's registration fee. Payments to defray the costs of a conference should not be accepted directly from the company by the physicians attending the conference.
5. Subsidies from industry should not be accepted directly or indirectly to pay for the costs of travel, lodging, or other personal expenses of physicians attending conferences or meetings, nor should subsidies be accepted to compensate for the physicians' time. Subsidies for hospitality should not be accepted outside of modest meals or social events held as a part of a conference or meeting. It is appropriate for faculty at conferences or meetings to accept reasonable honoraria and to accept reimbursement for reasonable travel, lodging, and meal expenses. It is also appropriate for consultants who provide genuine services to receive reasonable compensation and to accept reimbursement for reasonable travel, lodging, and meal expenses. Token consulting or advisory arrangements cannot be used to justify the compensation of physicians for their time or their travel, lodging, and other out-of-pocket expenses.

6. Scholarship or other special funds to permit medical students, residents, and fellows to attend carefully selected educational conferences may be permissible as long as the selection of students, residents, or fellows who will receive the funds is made by the academic or training institution. Carefully selected educational conferences are generally defined as the major educational, scientific or policy-making meetings of national, regional or specialty medical associations.

7. No gifts should be accepted if there are strings attached. For example, physicians should not accept gifts if they are given in relation to the physician's prescribing practices. In addition, when companies underwrite medical conferences or lectures other than their own, responsibility for and control over the selection of content, faculty, educational methods, and materials should belong to the organizers of the conferences or lectures. (II) Issued June 1992 based on the report, "Gifts to Physicians from Industry," adopted December 1990; (JAMA. 1991; 265: 501 and Food and Drug Law Journal.1992; 47: 445-458); Updated June 1996 and June 1998.

Appendix L: Maternity/Paternity/Family Leave

RUSH GME HOUSESTAFF LEAVE FORM

Parental Leave (Maternity/Paternity/Adoptive) Leave – The House Officer must provide the GME Housestaff Leave Form to the program director with 30 days notice (or as much notice as possible). The completed form must then be received by GME, and the House Officer must assume responsibility for notifying both the program director and GME of the exact date of birth/adoption when known, so the leave can be accurately calculated and recorded. Upon birth/adoption of a child, two weeks paid salary with benefits are provided. After the two weeks, house officers may elect to use their available vacation time for up to an additional four calendar weeks with salary and benefits. If no vacation time is available, the House Officer must apply for Family Medical Leave (“FMLA”), and then any subsequent leave is unpaid with the house officer paying health/dental premiums to maintain benefits for a maximum of twelve weeks.

Any leave required due to medical complications ante-partum or post-partum would fall under medical leave/short term disability (STD) benefits. The FMLA can provide further leave options (see below). *As an example*, Parental Leave may be structured as follows:

2 weeks paid Parental Leave and 4 weeks paid vacation for a total of 6 weeks paid leave with benefits

Medical Leave/Short Term Disability (STD)– The House Officer may qualify for up to three months of leave with benefits because of health condition, extended illness or disability, where appropriate. The House Officer must provide the request for leave with at least 30 days notice (or as much as possible) to GME and the program director, complete the GME Housestaff Leave form, and submit certification from the treating physician. Additional certification from the treating physician may be requested at intervals and certification for a clearance must be received by GME prior to the House Officer’s return to work.

Long term disability (LTD) benefits – contact GME for more information.

Family Medical Leave Act (FMLA) - Up to twelve weeks total leave to care for a spouse, parent, or child with a serious health condition, two weeks of which shall be paid, where appropriate. After these two weeks, subsequent leave is either paid vacation (if available) or unsalaried. If unpaid leave is elected, the House Officer may maintain benefits by paying the Health and Dental insurance premium contribution as described in The Housestaff Agreement. The House Officer must provide of the request for leave with at least 30 days notice (or as much as possible) to his/her Program Director and GME, and complete the GME Housestaff Leave Form.

Unpaid Leave of Absence - May be extended at the request of the House Officer and the discretionary approval of his/her Program Director. Extension does not guarantee that the House Officer’s position will be held open pending his/her return to work; the unavailability of a position when a House Officer wishes to return to work shall result in termination of the Housestaff Agreement. House Officers may elect to maintain benefits during this leave by making arrangements with GME and paying COBRA rates for health insurance coverage.

Circle type(s) of leave: **PARENTAL** **Maternity** **Paternity** **Adoptive** **FMLA** **STD** **LTD**
Unpaid

House Officer _____ PGY/ FEL level ____ Date form completed ___ / ___ / 0__

Department _____ Program (if different) _____

Dates of **anticipated** leave: ___ / ___ / 0__ to ___ / ___ / 0__ (subject to change; notify GME and program)

Number of vacation days to apply toward leave _____ (28 maximum = 4 weeks)

Plus 2 weeks paid leave (Parental/FMLA only) + 14 (14 days = 2 weeks)

Total # days to be paid: _____

Additional unpaid leave (if any): _____ (circle: days weeks)

Program Director's pre- approval _____ **Date** ____/____/0__

It is essential that your Program Director and GME be notified of your **exact leave dates** or any/all **changes to the dates** as soon as they are finalized. Please do so in writing (email or fax OK).

Bring your child's hospital birth certificate to GME within 30 days of birth in order to be added to your health insurance plan!

Return this form to GME (527 AAC) with your Program Director's signature approval as soon as possible. Thank you.

GME Use Only

Date received ____/____/0__ by _____ **Payroll entered** ____/____/0__ by _____

Actual start date ____/____/0__ by _____

Actual Return date ____/____/0__ **# Vacation days** _____ **+ 14 = # Paid days** _____ **# Unpaid days** _____

Appendix M: Policy on Expenses for Fellows Attending Meetings

The Section will cover expenses for Fellows attending meetings under the following guidelines:

- 1) Expenses will only be covered during the time period of the meeting.
- 2) No expense will be reimbursed without proper receipt and documentation.
- 3) Air reservations must be made at least 30 days in advance and through our travel agency, *Pleasure Travel*. The lowest cost direct flight will be selected. See Evelyn Wheelock for help in this regard.
- 4) Same gender Fellows should room together unless otherwise approved.
- 5) Hotel expenses covered are room rate and applicable taxes, one call home/day and calls to work.
- 6) Transportation costs covered are transportation to and from airport from home and hotel, and to meeting events.
- 7) Meal allowance is \$50.00/day.
- 8) Other expenses may be covered but must be pre-approved.
- 9) Meeting registration is covered. Pre-meeting Courses should be approved with the Fellowship Director.

Appendix N: RUMC GME Policy on Selection, Evaluation, Promotion and Dismissal

Rush University Medical Center Graduate Medical Education Policy

Each program must establish written policies for the *selection, evaluation, promotion, and dismissal of housestaff*. These policies must be consistent with the Program Requirements of the appropriate Residency Review Committee as well as the institutional policies below:

Eligibility and Selection of Residents

Applicants matriculated into Rush graduate medical education programs must possess one of the following qualifications:

>Graduation from a medical college in the United States or Canada which is accredited by the Liaison Committee on Medical Education (LCME)

>Graduation from a college of osteopathic medicine in the United States which is accredited by the American Osteopathic Association (AOA)

>Graduation from a medical college outside the United States or Canada and possession of **either** a currently valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG) **or** a full and unrestricted license to practice medicine in the State of Illinois

>Graduation from a non-US medical college **and** completion of a Fifth Pathway program provided by an LCME-accredited medical college

Programs must select from among eligible applicants on the basis of their preparedness, ability, aptitude, academic credentials, communication skills, motivation, and integrity. Programs must not discriminate with regard to gender, race, age, religion, color, national origin, ethnic background, disability, veteran status, sexual orientation, marital status, or parental status. Programs will establish criteria and protocols for soliciting applicants, evaluating applications, granting interviews, and making offers, whether directly or through a matching program when available. No housestaff may be required to sign a non-competition guarantee.

Evaluation of Residents

All housestaff will be evaluated in writing not less than **two times in each academic year**. Programs will establish policies on the methods of evaluation and the manner in which the results are presented to the housestaff. These policies will be made known to the faculty and the housestaff.

Assessment methods must be accurate in assessing performance and in achieving progressive improvement in competency. Evaluation records are to be maintained by the program and communicated to each resident in a timely manner. At the completion of the program, the program director is to document a **final evaluation** in the resident's permanent record that verifies that the resident has demonstrated sufficient competence to enter practice without direct supervision.

Promotion of Residents

Each program will establish **written** criteria for promotion through the levels of the training program through completion. These criteria will be made known to the faculty and housestaff. Each program director will develop detailed written job descriptions for each year of training in the program. Privilege matrices for each year of training will be maintained on the Rush website.

Dismissal of Residents

Programs will follow **institutional Graduate Medical Education policies** regarding dismissal, discipline, adjudication of housestaff grievances and complaints relevant to the Graduate Medical Education programs.

Programs must keep their housestaff policies and procedures on file and communicate these to housestaff and faculty as appropriate. MedHub is strongly recommended for these purposes. such policies are formulated or revised, a copy is to be sent to the Office of Graduate Medical Education for purposes of institutional oversight.

Approved at GMEC May 24, 1999

Revised and Approved at GMEC November 26, 2001

Revised and Approved at GMEC March 26, 2007

Revised and Approved at GMEC September, 2009

Appendix O: Policy on The Effect of Leave of Absence on Satisfying Criteria for Program Completion and Board Certification Eligibility

Absence: Fellows need to arrange coverage if they are gone or unavailable during the time they are on active rotations including Transplantation, Out-pt. Hemodialysis, Out-pt. peritoneal dialysis, or the RUMC Clinical service. Pre-arranged Fellow absences should be cleared with the appropriate Attending for absence from the Clinical and Transplantation services, or the Program Director for Fellows absent from the Out-pt. Hemodialysis (HD) or Out-pt. Peritoneal dialysis (PD) services. A memo or email with the dates and covering Fellow must be circulated. The Fellow needs to make sure that the designated covering person is available and on-site. For instance, The Out-pt. PD Fellow can cover the Out-pt. HD Fellow, but should be at the out-patient office site during the coverage time. The Fellow covering the unavailable Fellow should let the other service's "charge" nurse know that they are covering and available. Absence from Pediatric Nephrology and Renal Pathology is strongly discouraged and must be approved by the Program Director. Fellows do not need to arrange coverage for these two services if absent.

Fellows are allowed up to 4 weeks paid time away from training which they may use for vacation, illness, parental or family leave or pregnancy related illness. This time off will not impact the Fellow's Program Completion. If a Fellow takes a leave of absence greater than this month period, the Fellow may require further training to satisfy criteria for Program Completion. In this case the program director will ask the ACGME for approval of extension of the fellowship for an appropriate time period (up to but not in excess to time missed) and in parallel will ask the local DIO for an approval as well as extension of payroll. The "Program Completion" and "Board Eligibility" will be delayed until that period has been fulfilled.