WRITTEN CURRICULUM

FELLOWSHIP GOALS AND OBJECTIVES

DIVISION OF RENAL DISEASES AND HYPERTENSION
INTRODUCTION

The mission of the Division of Renal Diseases and Hypertension is to educate and train physicians as clinically skilled Nephrologists and to generate new knowledge in the biomedical and Health Sciences. The cornerstone of this program is teaching at a level of excellence, which fosters excitement and enthusiasm for a lifetime commitment to scholarship.

GENERAL ASPECTS OF TRAINING

The training program at the University of Texas – McGovern Medical School is accredited by the ACGME (Accreditation Council for Graduate Medical Education). The Division offers a formal two year fellowship providing training in both clinical nephrology and clinical/basic investigation, to physicians who have already completed Internal Medicine Residency training. The educational objective of the fellowship is to teach fellows a formal Nephrology Core Curriculum, which develops expertise in the evaluation and management of patients with kidney disease. Experience is attained by clinical rotations in three different hospitals, exposure to a large population of chronic dialysis outpatients, rotations on renal transplant, ICU, Cardiovascular, Onco-nephrology and general nephrology consultation services, and a two-year continuity clinic in general nephrology and renal transplantation. Fellow’s education is supplemented by numerous didactic sessions presented by full time division faculty, fellows, and visiting faculty. At the end of this training, fellows should have obtained the knowledge and technical skills necessary to be an expert consultant and/or principle care provider for patients with kidney disease. The following are considered key elements of the definition of a nephrologist:

1. An in-depth knowledge of the pathophysiology, clinical manifestations and presentations, diagnosis, appropriate laboratory, imaging, and pathologic studies, and appropriate treatment and management of all conditions outlined in the Nephrology core Curriculum.
2. Knowledge and understanding of the basic science disciplines relevant to kidney diseases including anatomy, physiology, biochemistry, immunology and genetics.
3. Experience and skill to perform and/or interpret procedures necessary to the practice of nephrology:
   a) placement of temporary vascular access for hemodialysis
   b) percutaneous renal biopsy of native and transplanted kidneys
   c) urinalysis
   d) placement of peritoneal dialysis catheters
   e) renal nuclide scans
   f) renal arteriography
   g) management of acute and chronic dialysis, including continuous modalities
   h) radiology of vascular access
   i) balloon angioplasty of vascular access
   j) therapeutic plasmapheresis
   k) ultrasonography
1) Lithotripsy

4. Lifetime commitment to scholarship and self-directed learning to foster continued intellectual growth for application of new knowledge to patient care.

5. Excellent communication skills, both oral and written, in order to provide the highest standard of care to patients and their families, and to effectively work with primary care providers, consultants, other health care providers (dietitians, social workers), the community, and health care agencies.

6. High ethical and professional standards to provide the most compassionate and cost-effective patient care.

7. A strong background in evidenced based medicine utilizing the disciplines of epidemiology, biostatistics, outcomes research, and critical appraisal of the literature.

SPECIFIC PROGRAM CONTENT

- Disorders of mineral metabolism including nephrolithiasis and renal osteodystrophy.
- Disorders of fluid, electrolyte, and acid-base regulation.
- Acute renal failure.
- Chronic kidney disease and its management including nutritional management of uremia.
- ESRD
- Hypertensive disorders.
- Renal disorders in pregnancy.
- Urinary tract infections.
- Tubulointerstitial disorders including inherited diseases of transport, cystic diseases, and other congenital disorders.
- Glomerular and vascular diseases including the glomerulonephridies, diabetic nephropathy, and atheroembolic renal disease.
- Disorders of drug metabolism and renal drug toxicity.
- Genetic and inherited renal disorders.
- Geriatric aspects of nephrology including disorders of the aging kidney and urinary tract.

GENERAL GUIDELINES

Order Writing
All orders pertaining to dialysis must be ordered through the computer order entry system by the nephrology fellow. Verbal orders are only acceptable at the discretion of the nursing staff in situations where access to the computer is unavailable, and must be cosigned by the prescribing physician within a 24-hour period. No orders may be entered by any other physician and will not be followed by the dialysis nurse. Since the fellow is responsible for meaningful patient care, attendings are discouraged from writing any orders on patients...
followed by the fellow. Rather, their role should be reviewing the orders with the fellow and providing educational feedback on the treatment plan. On the inpatient consult services at Memorial Hermann Hospital order writing by the fellow is discouraged unless it has been discussed with the primary service for that patient. In order to foster communication between services, a treatment plan for the patient should be relayed to the consulting service in a timely manner. At that juncture, the orders pertaining to further evaluation can be written either by the primary service or if requested by them, by the renal fellow. On the inpatient consult service at MD Anderson, order writing by the fellow regarding consultative issues is allowed and often preferred.

**Lines of Responsibility**
As consultants, our primary role is to suggest a diagnostic evaluation and treatment plan to the primary service. In this role, all decisions related to the care of the patient are the purview of the primary service. It is expected that fellows will teach both students and residents assigned to the various renal services as well as the residents who have called consults. Timely communication with the consulting physicians will expedite work-up. The renal service is only directly responsible for care and management of issues directly related to dialysis.

**Private/Non-Teaching Patients**
Renal fellows are not responsible for the care or evaluation of patients of private nephrologists. When called about a renal patient, the physician calling must ascertain the name of that patient’s outpatient Nephrologist. If the private Nephrologist has admitting privileges (a list is posted in the emergency room), the physician in charge of the patient’s care should contact that Nephrologist. For patients, whose Nephrologist does not admit to the hospital, they become teaching patients and we provide the necessary renal care.

**Days Off**
Fellow will as a minimum have one 24-hour period off each 7-day period averaged over four weeks. Pagers are to be turned off during this period.

**Call**
Fellows are expected to see and evaluate any and all patients when consulted on-call. After the evaluation, they should secure message (PerfectServe) or phone the appropriate attending to discuss their findings and devise a treatment plan.

Time spent in the hospital by fellows on at-home call counts towards the 80-hour maximum weekly hour limit.

**Work-Hours**
On average, fellows will work less than 80 hours per week. When averaged over a year, excluding vacation, fellows are provided a minimum of 48 days free of patient care duties, including home-call responsibility. Fellows must not be scheduled for more than six consecutive nights of night float.
Conference Responsibilities
Fellows are expected to prepare and present in a variety of conference settings. The year presentation schedule is available at the beginning of the academic year. Details regarding each conference are discussed in the Conference section of this document.

Personal Conduct/Ethical Behavior
Fellows must have the welfare of their patients as their primary professional concern. Fellows must demonstrate humanistic qualities that foster empathetic, constructive, and effective patient/physician relationships. Such qualities include integrity, respect, compassion, professional responsibility, courtesy, sensitivity to patient needs for comfort and encouragement, and a professional attitude and behavior towards colleagues.

A disciplinary policy specific to the fellowship is provided in your fellowship manual and online at the fellowship Canvas site.

Evaluation/Promotion
The Attending Nephrologist evaluates the fellow’s performance at the end of each month with formal evaluations provided quarterly. The fellow’s performance is discussed in person. These evaluations are in turn monitored by the Clinical Competency Committee that meets quarterly. The Program Director meets with each fellow a minimum of twice per year. Each fellow is assigned a faculty advocate which they meet with at a minimum of twice per year. Satisfactory performance is necessary for promotion and certification to sit for the Medicine Boards in Nephrology. If a fellow’s performance is poor, the Program Director outlines the deficiencies and devises a course of action for improvement. Performance is then monitored on a weekly basis. If substantial improvement is not made after a reasonable time period, the fellow may not be promoted, or may be dismissed. Such fellows have the right to a grievance hearing as outlined in the UT GME Handbook distributed at the beginning of the year.

Moonlighting policy
Fellows are not required or encouraged to engage in moonlighting. At no time will the fellow represent the University of Texas Health Science Center while moonlighting. The Fellow will not be allowed to moonlight in nephrology (the area in which they are currently being trained), or risk jeopardizing his/her status in the fellowship program with the University of Texas.

Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program nor interfere with their clinical responsibilities. Fellows are strongly encouraged not to moonlight during their clinical training, since the clinical training portion of the fellowship demands your complete attention.

Moonlighting is prohibited during standard work hours for a given service and when on-call. Time spent by fellows moonlighting must be counted towards the 80-hour Maximum Weekly Hour Limit.
All fellows engaged in moonlighting must be licensed for unsupervised medical practice in Texas. It is the responsibility of the institution hiring the fellow to moonlight to determine whether such licensure is in place, whether adequate liability coverage is provided (the University of Texas Health Science Center will not provide liability coverage for moonlighting activities), and whether the fellow has the appropriate training and skills to carry out assigned duties. The sponsoring institution must ensure the Nephrology fellowship program director acknowledges in writing that she/he is aware that the fellow is moonlighting and that this information is made part of the fellow’s file. According to the ACGME institutional policy, each fellow who engages in moonlighting activities must provide written notification of their intent and participation. The Program Director for Nephrology Fellowship Program of the Division of Renal Diseases and Hypertension, and receive approval prior to starting.

**Supervisory policy**
Attending’s should be notified immediately if a patient’s status changes resulting in transfer to ICU or death (excluding palliative care expected death).

Fellows should be under direct supervision by an attending for all procedures including dialysis line placement, and renal biopsy until such time that they have achieved competency themselves and it is so documented by the appropriate form given to the program director.

Fellows should be under direct or indirect supervision by an attending for all procedures including Hemodialysis, Peritoneal Dialysis, and CRRT until such time that they have achieved competency themselves and it is so documented by the appropriate form given to the program director.

Fellows should be under direct supervision while evaluating new renal or transplant consults until they achieve the level of apprentice on patient care and medical knowledge after which they may be under oversight.

Attending’s will always be available to be contacted for indirect supervision or oversight at the fellows’ discretion no matter what the fellows’ level of competency including teacher.

**CORE COMPETENCIES**

As directed by the ACGME, we have implemented a system to provide fellows a means to achieve competency in the defined core areas. The clinical and teaching venues where these core areas are taught are outlined below as well as in the specific rotation goals and objective document. Core competencies are also taught during didactic session. Please see the specific content and objective in the didactic section.
Please refer to the ACGME Program Requirements for Graduate Medical Education in Nephrology (Internal Medicine). Pages: Nephrology 14-22.

Core content along with rotation experiences listed in margins

Rotation abbreviations:

HVI – Memorial Hermann Heart and Vascular Institute Consult Service
MICU – Memorial Hermann ICU Nephrology Consult Service
MIT – Memorial Hermann Inpatient Transplant Consult Service
MOT – Memorial Hermann Outpatient Transplant Clinic
LBJ – LBJ Inpatient Service
MDA – M.D. Anderson Inpatient Consult Service
OC – Outpatient Nephrology Continuity Clinic
OD – Outpatient Dialysis Rotation

1. PATIENT CARE (PC)

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows are expected to:

- communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- gather essential and accurate information about their patients
- make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- develop and carry out patient management plans
- counsel and educate patients and their families
- use information technology to support patient care decisions and patient education
- perform competently all medical and invasive procedures considered essential for the area of practice
- provide health care services aimed at preventing health problems or maintaining health
- work with health care professionals, including those from other disciplines, to provide patient-focused care

2. MEDICAL KNOWLEDGE (MK)
Fellows must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care. Fellows are expected to: demonstrate an investigatory and analytic thinking approach to clinical situations and know and apply the basic and clinically supportive sciences which are appropriate to their discipline.

3. PRACTICE-BASED LEARNING AND IMPROVEMENT (PBL)

Fellows must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices. Fellows are expected to:

- analyze practice experience and perform practice-based improvement activities using a systematic methodology
- locate, appraise, and assimilate evidence from scientific studies related to their patients’ health problems
- obtain and use information about their own population of patients and the larger population from which their patients are drawn
- apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- use information technology to manage information, access on-line medical information; and support their own education
- facilitate the learning of students and other health care professionals

4. INTERPERSONAL AND COMMUNICATION SKILLS (ICS)

Fellows must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates. Fellows are expected to:

- create and sustain a therapeutic and ethically sound relationship with patients
- use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- work effectively with others as a member or leader of a health care team or other professional group

5. PROFESSIONALISM (P)

Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Fellows are expected to:
• demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
• demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
• demonstrate sensitivity and responsiveness to patients’ culture, age, gender, and disabilities

6. SYSTEMS-BASED PRACTICE (SBP)

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value. Fellows are expected to:

• understand how their patient care and other professional practices affect other health care professionals, the health care organizations, and the larger society and how these elements of the system affect their own practice
• know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
• practice cost-effective health care and resource allocation that does not comprises quality of care
• advocate for quality patient care and assist patients in dealing with system complexities
• know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance.

CONFERENCES

As part of our fellowship training program, we maintain an active teaching conference schedule. We expect regular attendance by all our fellows at the following conferences. Attendance will be tracked.

1. Fellows Introductory Series: Lectures in the first two months geared to provide important didactic information on core topics.

2. Methodist Renal Grand Rounds: Held on Wednesdays at 1:30pm year-round. This is a clinical conference, which includes a core course in renal pathology, radiology
and urology along with series of clinical talks on renal related subject matter from experts in the field across the local and national level.

3. Nephrology Clinical Conferences: Monday conference mixed with fellow led journal club and morning report and faculty led case conferences, physiology conferences and Renal Grand Rounds.

4. Renal Pathology Conference: Meets once monthly from September-June. This is a joint conference with UT/Baylor. The assigned fellow will prepare the case history for distribution prior to the scheduled conference with the assistance and case selection by Dr. Glass, UT Renal Pathologist. Fellows are expected to come to conference prepared with a differential diagnosis. Fellows will be chosen to share their differential diagnosis as well as review the biopsy slides with the assistance of Dr. Glass.

5. Board Review: Monthly meeting among fellows and faculty, led by the chief fellow. Content will include board type questions for review and discussion.

6. MDACC Renal Rounds: Meets weekly on Fridays with MDA faculty and fellows assigned to the MDA service. Aimed to cover current issues in nephrology with a specific focus on renal physiology, cancer related renal disease and chemotherapeutic related renal issues. Fellows present on the 2nd and 4th Friday while on service at MDA.

7. Transplant Biopsy Conference: Meets weekly on Tuesday, led by renal pathology and transplant nephrology. Fellows are expected to attend while on service.

8. Internal Medicine Grand Rounds: Thursday at noon, Weekly didactic lecture by faculty or visiting Professors on a wide range of topics, many relevant to nephrologists

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**ROTATIONS:**

**MEMORIAL HERMANN HOSPITAL:**

Memorial Hermann Hospital is a 1000+ bed tertiary care center and level one trauma center located in the Texas Medical Center.

All major-medical services, an emergency room, trauma center, and intensive care units are present, and it offers state of the art clinical laboratories and imaging facilities: renal pathology with election microscopy and immunofluorescence, a diagnostic radio nuclide laboratory, biochemistry and serologic laboratories, nutritional support services, social
services, CT/spiral CT scans, MRI/MRA, PET scanning, gamma knife, and an active Interventional Radiology department.

Patients are of varied ethnicity and include self-pay, managed care and private insurance. The patients may be under the care of faculty or private physicians. By its founding charter, Memorial-Hermann Hospital has a strong commitment to indigent care in the greater Houston area.

**MEMORIAL-HERMANN HOSPITAL**

**HVI CONSULT SERVICE**

**Educational Purpose**
The purpose of this rotation is to develop expertise in the evaluation and management of nephrologic disorders in a patient with cardiovascular disease. This rotation also stresses effective communication skills and cost containment.

**Principle Teaching Method**
The principle teaching method on this rotation is daily teaching rounds with the Attending nephrologist. Rounds are made every day where bedside teaching takes place.

**Educational Content**
Memorial-Hermann Hospital Heart and Vascular Institute is a private general hospital adjacent to the medical school in the Texas Medical Center. It is a primary and tertiary care center, as well as a trauma hospital, and exposes trainees to a wide variety of patients and a broad mix of diseases. Consults on this service are derived from patients admitted to the cardiovascular unit and includes patients in both the ICU and IMU of the surgical and medical floors.

Fellows are assigned on a 4-week block basis, and are supervised by a full-time faculty attending. The Attending nephrologist meets with the team daily to evaluate and discuss new patients and to see all follow up patients. Fellows, no more than every fourth night, take call from home for any night or weekend consults/emergencies, always under supervision of an Attending nephrologist. Patients who require follow-up after discharge are referred to the continuity clinic of the consulting fellow.

*Rotation specific Goals and Objective can be found in New Innovations*
MEMORIAL-HERMANN HOSPITAL

ICU SERVICE

Educational Purpose
The purpose of this rotation is to develop expertise in the evaluation and management critically ill patients in a large primary and tertiary care center. This rotation also stresses effective communication skills.

Principle Teaching Method
The principle teaching method on this rotation is daily teaching rounds with the Attending nephrologist. Rounds are made once per day where bedside teaching takes place.

Educational Content
Memorial-Hermann Hospital is a private general hospital adjacent to the medical school in the Texas Medical Center with 150 ICU beds. It is a primary and tertiary care center, as well as a trauma hospital, and exposes trainees to a wide variety of patients and a broad mix of diseases. Consults are derived from all ICU services at the hospital (excluding the Heart and Vascular Institute), including Pulmonary-Critical Care, Cardiovascular Surgery, General Surgery and its subspecialty services, OB/GYN, and Neurology.

Fellows are assigned on a block basis one to two times per year, and are supervised by a full-time faculty attending. The Attending nephrologist meets with the team daily to evaluate and discuss new patients and to see all follow up patients. Patients on continuous renal replacement therapies are seen twice daily by the team. Fellows, no more than every fourth night, take call from home for any night or weekend consults/emergencies, always under supervision of an Attending nephrologist.

Rotation specific Goals and Objective can be found in New Innovations

M.D. ANDERSON CANCER CENTER

CONSULT SERVICE

Educational Purpose
The purpose of this rotation is to develop expertise in the evaluation and management of nephrologic disorders in a rather unique patient population, namely patients receiving treatment for various malignancies.

The University of Texas M.D. Anderson Cancer Center (MDACC), located within the Texas Medical Center, is a facility that provides care to patients with cancer. It provides care too all Texans regardless of the ability to pay, and as an internationally recognized center of excellence, it has many patients from out of state and foreign countries.
Therefore, the mix of diseases ranges from simple toxin mediated renal disease to rare, or previously unrecognized, paraneoplastic renal syndromes. MDACC has a busy emergency room, multiple outpatient clinics, medical and surgical intensive care units, and active medical and surgical services from which consultations are derived. The hospital offers a full array of clinical laboratory biochemistry and serologic laboratories, Interventional Radiology, nutritional support services, and social services. Renal biopsy specimens obtained at MDACC are processed and evaluated by the Pathology Department at Hermann Hospital.

Fellows are assigned on a 4-week block basis two to three times per year. The consult team is composed of the full time U.T. nephrology faculty member and the fellow who evaluates and presents all patients on a daily basis to the Attending nephrologist. No more than every fourth night, the fellow takes call from home for any night or weekend consults/emergencies under the supervision of the Attending nephrologist. Patients requiring outpatient follow-up after discharge are referred to the outpatient clinics at MDACC.

Rotation specific Goals and Objective can be found in New Innovations

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**L.B.J. GENERAL HOSPITAL**

**CONSULT SERVICE**

**Educational Purpose**

The purpose of this rotation is to develop expertise in the evaluation and management of nephrologic disorders in a county hospital, which provides care mainly to the poor and uninsured. During this rotation, the fellow will have the opportunity to assess a wide variety of acute and renal conditions. The fellow will participate in increasing levels of management/treatment involvement with patient needs depending on the fellow’s level of experience. The fellow will be expected to formulate the differential diagnosis, institute diagnostic studies and recommend therapy. The amount of learning obtained from this rotation is directly proportional to the amount of time spent in the evaluation of the patients.

**Educational Content**

Lyndon B. Johnson (LBJ) General Hospital is an acute care facility operated by the Harris Country Hospital District and staffed solely by the faculty of the University of Texas – Houston Medical School. It serves as one of two county hospitals providing care to indigent people in Harris County, and is located approximately 12 miles from the Texas Medical Center. It has a busy emergency room and intensive care unit, and active medical, surgical and obstetrical services from which consultations are derived. LBJ General Hospital offers full clinical laboratories and imaging facilities: CT scan diagnostic radionuclide laboratory, biochemistry and serologic laboratories, MRI/MRA,
Interventional Radiology, nutritional support services, and social services. Renal biopsy specimens obtained at LBJ General Hospital are processed and evaluated by the Pathology Department at Hermann Hospital.

Fellows are assigned on a 4-week basis two to three times per year. The fellow, under the supervision of a full-time faculty Attending coordinates the teaching of rotating internal medicine residents and medical students, and meets daily with the Attending nephrologist to evaluate and discuss new patients and all follow-up patients. Patients requiring outpatient follow-up after discharge are referred to the outpatient renal clinics at LBJ General Hospital.

The mix of disease on this rotation is quite diverse. Given the patient population, in many circumstances, the trainee will see late or severe manifestations of common diseases because of inadequate, or lack of, previous treatment.

*Rotation specific Goals and Objective can be found in New Innovations*

**MEMORIAL-HERMANN HOSPITAL**

**RENAL TRANSPLANTATION**

**Educational Purpose**
The purpose of this rotation is to develop expertise in the evaluation and management of Transplant patients in a large primary and tertiary care center. This rotation also stresses effective communication skills and cost containment.

**Principle Teaching Method**
The principle teaching method is daily teaching rounds with the Attending nephrologist and Transplant Surgeon at the bedside.

**Educational Content**
The transplant service at Memorial-Hermann Hospital (previously described) is quite busy, having performed more than 100 transplants per year. The hospital provides a full array of clinical, laboratory, and imaging facilities as previously described.

Fellows are assigned to the transplant service for at least 2-months over the course of their fellowship, where they provide care to all patients on the service. The patients are seen on a daily basis with both an Attending Nephrologist and Attending Transplant Surgeon. During the rotation, the fellow functions as an integral part of the transplant service and will spend time in the operation suite to observe both organ harvesting and transplantation. All patients are followed after discharge in the Renal Transplant clinic (see Ancillary Education).
The mix of diseases is quite varied. The leading causes for transplantation include diabetes, hypertension and chronic glomerulonephritis. Problems encountered include rejection, unusual infections and secondary malignancies.

Physicians in the local community or adjacent states refer most patients for transplantation. There is also a large contingent of international clients.

Fellows are expected to check out and read the book “The Handbook of Renal Transplantation,” during the rotation and are expected to attend all Transplant Conferences including the Morbidity & Mortality Conference.

Outpatient Transplant Clinics: Each fellow throughout the 2-year training period is assigned to a monthly renal transplant clinic. This provides fellows an opportunity to follow more than 20 transplant patients longitudinally in an ambulatory setting. The patients are derived from the inpatient service described above. See Transplant Continuity Clinic below.

*Rotation specific Goals and Objective can be found in New Innovations*

**RENAL CONTINUITY CLINIC**

Each fellow is assigned for two years to an outpatient renal continuity clinic directly supervised by an Attending nephrologist. It meets one-half day per week, and it is expected that the fellow will attend the clinic during all rotations. Typically, the fellow in each clinic sees 1-3 new patients and 3-6 return patients, with a maximum of 6-8 patients each half day of clinic.

**Educational Purpose**

The educational purpose of this experience is to provide trainees an opportunity to evaluate and manage patients with a variety of renal diseases in a longitudinal manner. In this way, trainees gain insight into the progression of renal disease and the impact of therapy. Several patients are over the age of 70 allowing for an opportunity to manage the physical, social, and psychological problems prevalent in elderly/geriatric patients.

**Principle Teaching Method**

The principle teaching method on the rotation is discussion at the bedside with the Attending nephrologist.

Renal fellows will understand how to counsel patients on the need for renal replacement therapy and counsel the patients on the options available.

**Educational Content**
The Renal Continuity Clinic takes place in the UT Professional Building located in the Texas Medical Center directly across the street from Memorial-Hermann Hospital, connected by an elevated walkway. The full array of clinical laboratory and imaging facilities are provided at UTPB or Memorial-Hermann Hospital as previously described. There is also Renal Continuity clinic at LBJ Hospital, which provides the same array of services to a diverse county health population. Fellows evaluate all patients first and then present them to the Attending nephrologist who then also evaluates the patient. Together, the fellow and faculty determine diagnostic procedures and therapeutic plans. By example of the faculty, the fellow learns the skills necessary to provide outpatient consults in the managed care environment and effective communication with primary care providers. The mix of diseases typifies what outpatient nephrologists in the community traditionally see. In addition, many unusual or rare disorders are referred to the clinic because of its association with the Medical School.

The patients are diverse and are referred from faculty in other divisions of the Medical School, private physicians in the community, and occasionally other nephrologists in the community. This renal clinic also provides hospital follow-up for patients seen by the fellow while on the Inpatient Consult Service at Hermann Hospital. Most patients have Medicare/caid, managed care, or private health insurance.

*Rotation specific Goals and Objective can be found in New Innovations*

**TRANSPLANTATION CONTINUITY CLINIC**

Each fellow is assigned to 6 total months over the course of the two year to an outpatient renal transplant clinic that meets monthly. An Attending Nephrologist/Transplant Surgeon directly supervises the fellow.

**Educational Content:**
Renal Transplant Clinic takes place at Memorial-Hermann Transplant Clinic located in the Memorial Hermann Hospital. Physicians in the local community or adjacent states refer most patients for transplantation. There is also a large contingent of international clients. Follow-up transplant patients are derived from the previously described renal Transplant Inpatient Service.

**Educational Purpose:** The educational purpose of this experience is to provide trainees an opportunity to evaluate and manage renal transplant patients in an ambulatory setting.

**Principal Teaching Method:**
The principle teaching method on the rotation is discussion in the clinic with the Attending Nephrologist/Transplant Surgeon.

*Rotation specific Goals and Objective can be found in New Innovations*
OUTPATIENT DIALYSIS/AMBULATORY ROTATION
Memorial Hermann Hospital QI Initiative Rotation

Educational Purpose:
The purpose of this rotation is to gain exposure to the chronic outpatient dialysis patient via real time along with guided self-learning. The rotation allows for activities in all aspects of outpatient dialysis care. Incorporated into this rotation is active participation in a quality improvement initiative aimed and education and communication related to the longitudinal care of chronic end stage renal disease patients.

Educational Content:
Fellows are required to complete the Outpatient Dialysis and Memorial Hermann Hospital QI Initiative Checklist. Material is provided for review to cover the outlined objectives and in accordance with the ACGME Nephrology curriculum.

The educational purpose of this rotation is for the trainees to gain experience in the outpatient management of chronic dialysis patients, including patients on home-based therapies.

The mix of diseases is typical of what is seen in chronic dialysis patients such as heart disease, hypertension, diabetes, and peripheral vascular disease. The rotation takes place in 2 outpatient hemodialysis centers and one peritoneal dialysis unit staffed by faculty of the Medical School. These centers provide care for 200 hemodialysis and 60 peritoneal dialysis patients. Full laboratory and serologic services are provided. All imaging and inpatient services are provided at Hermann Hospital as well as outpatient Interventional Radiology Services.

The fellow also attends, under the supervision of the Attending Nephrologist, the monthly Patient Care Conference (PCC), a multidisciplinary meeting composed of the nephrologist, dietitian, social worker and head nurse of the unit to discuss each patient’s medical, social and emotional needs.

The dialysis patients are predominantly African American and Hispanic, are often derived from Memorial-Hermann Hospital or LBJ General Hospital, and are the patients of the Attending nephrologists in the Renal Division of University of Texas – Houston McGovern Medical School.

Fellows are expected to check out and read the book “The Handbook of Dialysis and The Handbook of Peritoneal Dialysis” during the rotation.

*Rotation specific Goals and Objective can be found in New Innovations and in the specific ESRD curriculum objective document*
RESEARCH TRAINING

**Education Purpose:** The educational purpose is for trainees to learn scientific methods and the means by which to understand and conduct scientific investigations.

**Educational Content:**
Participation in research is required by the American Board of Internal Medicine to be eligible to take the Nephrology subspecialty boards. 6-9 months of protected time for research are provided during the 2-years of clinical training. We have compiled a list of ongoing or future research projects of the renal faculty and ask the fellows to select a project/mentor. The fellow, under the supervision of the full-time faculty mentor, then designs and performs a research project. Novel ideas by the fellows are also encouraged. Although protected time is provided, many projects can be continued while fellows are on service since most projects are clinically based research.

Fellows may participate in the Clinical Research Curriculum offered on a revolving 2-year schedule. Classes are held on Wednesdays from 5:00 pm to 6:30 pm. Classes begin in late August. Upon completion of the curriculum, fellows will receive a certificate of completion and 9-12 credit hours can be applied towards the Master’s of Clinical Research Degree Program.

Selected fellows interested in a career in clinical research can apply for the Master’s of Clinical Research in their 2nd year which would require a 3rd year of fellowship training devoted to research. Consideration for this pathway is made on a case-by-case basis by the Program Director and awarded to individuals who demonstrate a high aptitude for becoming a successful researcher.

Fellows attend and present papers in a regularly scheduled Clinical Journal Club. In this forum, papers are presented in the style of critical appraisal of the literature specifically conforming to the ideals formulated in the McMasters series. Study design and validity of data are scrutinized rather than content. The purpose of this exercise is to foster the practice of evidence-based medicine.

Fellows are expected to submit their research for presentations at national scientific meetings and submit manuscripts to peer reviewed journals.

Fellows meet monthly with either their research mentor or the Fellowship Research Director to discuss the progress of their projects.

ELECTIVE ROTATIONS

**Education Purpose:** To provide structured interest focused exposure to various subspecialties within nephrology.
Educational Content:
Fellows are expected to meet with the program director and program coordinator at the start of their elective time to complete the elective form and determine whether they will have a research focus (as above) or a clinical focus. From that meeting a plan for the specified elective time will be formulated.

ETHICS/MEDICAL LEGAL

1. Fellows are required to attend a risk management course on medical documentation and communication.
2. Fellows and faculty are required to read and report on selected journal articles on topics ranging from withdrawal of dialysis to the importance of the doctor–patient relationship.
3. Fellows attend Patient Care Conferences (PCC) on chronic dialysis patients, which address the medical, nutritional, social and emotional needs of each patient.

EVALUATIONS

Formal Verbal evaluations are completed at the end of each rotation. Milestone evaluations are completed in New Innovations and available for fellow review quarterly. Areas assessed are available for review in the sample evaluation document in your fellowship binder given out at orientation. Twice yearly you will meet with the program director for ongoing evaluation and feedback. Rotation specific Goals and Objective with milestones for each year of fellowship can be found in New Innovations. Fellows are also assigned a faculty mentor which they meet with semiannually at the 3 and 9 month time point.