



**Tufts-New England Medical Center  
Floating Hospital for Children**

**William B. Schwartz Division of Nephrology  
2005 Annual Report**



**We dedicate this year's report to two senior Division physicians:**

**Klemens B. Meyer, MD and Ronald D. Perrone, MD.**

**In addition to their outstanding long-term contributions to the Division,  
their accomplishments in 2005 were exceptional.**



**Tufts University School of Medicine**

# Table of Contents

<b>Message From The Chief.....</b>	<b>1</b>
<b>Administration .....</b>	<b>2</b>
Location .....	2
Staffing .....	3
2005 Administrative Accomplishments .....	14
Pratt Medical Group Nephrology and Hypertension, Concord MA .....	14
Initiation of The Center for Polycystic Kidney Disease at Tufts-NEMC .....	14
New Billing Cards.....	15
New Faculty Assignments.....	15
Service .....	16
Administrative and Professional Awards and Honors .....	19
<b>Patient Care.....</b>	<b>19</b>
2005 New Clinical Initiatives .....	20
Continuing Clinical Initiatives .....	20
Outpatient Program Descriptions .....	20
Outpatient Volume .....	22
Inpatient Program Descriptions.....	22
Inpatient Volume .....	24
Division Quality Improvement .....	24
Tufts-NEMC GFR Reporting .....	25
Physician Staff Assessment Survey.....	26
Community Service/Patient Education.....	27
Patient Care Awards and Honors .....	28
<b>Research.....</b>	<b>28</b>
Total Amount and Type of Research Awards .....	30
2005 Division Publications.....	33
Research Awards and Honors .....	38
<b>Education.....</b>	<b>39</b>
New Teaching Initiatives in 2005 .....	39
Fellowship Programs .....	41
Clinical Fellowship Training.....	41
Research Fellowship Training.....	42
2005 Research Fellowship Training Accomplishments .....	42
Continuing Research Fellowship Training Initiatives .....	42
Continuing Medical Education .....	45
Editorial Appointments.....	50
Education Awards and Honors .....	51
<b>Public Policy .....</b>	<b>51</b>
2005 Policy Initiatives .....	51
Continuing Policy Initiatives .....	52

# Tables and Figures

## Tables

Table 1: Onsite Locations of Division Activities at Tufts-NEMC .....	3
Table 2: Offsite Clinical Nephrology Activities Affiliated with Tufts-NEMC .....	3
Table 3: Outpatient Hemodialysis Units Affiliated with Tufts-NEMC.....	21
Table 4: Comparison of Tufts-NEMC Outpatient Activity: Fiscal Year 2005 to 2004.....	22
Table 5: Outpatient Dialysis Visits by Division Physicians at Affiliated Units 2005.....	22
Table 6: Comparison of Inpatient Activity: Fiscal Year 2005 to 2004 .....	24
Table 7: Inpatient Physician Days of Service at Affiliated Hospitals 2005.....	24
Table 8: 2005 Physician Staff Assessment Survey Results .....	26
Table 9: 2005 Community Service Events .....	27
Table 10: Areas of Research Emphasis in the Division.....	29
Table 11: New Research Awards Received In 2005 .....	31
Table 12: Ongoing Awards Received Prior To 2005 .....	32
Table 13: Longstanding Graduate-level Teaching Initiatives By Division Members .....	40
Table 14: Long-term Postgraduate-level Teaching Initiatives By Division Members .....	40
Table 15: Graduated Clinical Fellows.....	41
Table 16: Current Clinical Fellows.....	41
Table 17: Graduated Research Fellows.....	44
Table 18: Current Research Fellows.....	44
Table 19: Local, National and International Presentations By Division Faculty In 2005	46
Table 20: Stages of CKD and Their Respective New ICD-9 Codes .....	52

## Figures

Figure 1: Pocket GFR Card.....	25
Figure 2: Division of Nephrology Research Awards 2003-2005, by Type .....	30
Figure 3: Research Fellowship Training Tracks .....	42

## Message From The Chief

Welcome to our fourth Annual Report. This year has been one of our most exciting and productive years ever! We have grown to include 15 full-time physicians, 4 part-time physicians, 3 Special and Scientific staff and 25 staff to support our growing clinical, research, educational and administrative endeavors, which are described in the following pages.



As in previous years, caring for patients remains the core of what we do. We are also highly committed to scientific inquiry and solving problems relating to kidney disease. A large proportion of our Division members are actively involved in research. In addition, the Division is dedicated to the educational mission of academic medicine, engaged in the education of medical students and residents, and providing subspecialty training in Nephrology and post-graduate medical education.

Highlights from this year include opening a new nephrology practice in Concord MA, creating a new multidisciplinary polycystic kidney disease center, increasing clinical activity at Tufts-NEMC, introducing ambulatory blood pressure monitoring through the Kidney and Blood Pressure Center, increasing grant support, expanding production of clinical practice guidelines to the international community, and implementing new policies for detection, evaluation and management of chronic kidney disease (CKD) here at Tufts-NEMC and around the globe.

Individual Division member highlights include Dr. Gilbert receiving awards from the Tufts-NEMC Medicine residents and the TUSM class of 2004 and Dr. Madias co-editing and authoring a new textbook on acid-base. Dr. Stevens assumed the role as Director of Quality Improvement and Dr. Richardson took on the responsibility as Director of Communications, including preparation of this year's Annual Report. Especially important this year were Dr. Meyer being selected by the National Kidney Foundation of Massachusetts, Rhode Island, New Hampshire & Vermont to receive the prestigious 2006 Boston Gift of Life Outstanding Physician - Nephrology Award, and Dr. Perrone creating the new multidisciplinary Polycystic Kidney Disease Center. Drs. Meyer and Perrone are senior members of the Division and have had made exemplary contributions to the Division not only in 2005, but also during their entire tenures. We dedicate this year's Annual Report to them and honor their outstanding contributions.

We are very proud of what we have accomplished this past year and are looking forward to a successful 2006!

Sincerely yours,

A handwritten signature in black ink that reads "A Levey". The signature is written in a cursive, flowing style.

Andrew S. Levey, MD  
Chief, William B. Schwartz Division of Nephrology  
Tufts-New England Medical Center  
Dr. Gerald J. and Dorothy R. Freidman Professor of Medicine  
Tufts University School of Medicine

## Administration

The William B. Schwartz Division of Nephrology is an integral part of the Tufts-New England Medical Center (Tufts-NEMC) and the Tufts University School of Medicine (TUSM) communities. As listed below in the Staffing section, many Division members have other appointments within Tufts-NEMC and TUSM. In addition, the Division also enjoys a close and long-term relationship with Dialysis Clinic, Incorporated (DCI), the largest not-for-profit provider of dialysis care in the United States. In a broader organizational structure, Division members are also active participants within our professional organizations. Through these relationships, the Division is able to provide excellent patient care, perform high-level research, and educate students and practitioners about kidney disease.



2005 William B. Schwartz Division of Nephrology

## ***Location***

The Division maintains offsite and onsite ambulatory, dialysis and inpatient operations, with administrative and research operations located within the Tufts-NEMC campus. Table 1 and Table 2 list the location of activities performed both onsite at Tufts-NEMC and at offsite affiliates, respectively.

Table 1: Onsite Locations of Division Activities at Tufts-NEMC

35 Kneeland St.	4 <sup>th</sup> Floor 5 <sup>th</sup> Floor 5 <sup>th</sup> & 6 <sup>th</sup> Floors	Kidney and Blood Pressure Center Outpatient dialysis services provided by DCI Majority of Division support operations, physician offices and research staff
75 Kneeland St.	11 <sup>th</sup> Floor	National Kidney Foundation Center for Clinical Practice Guideline Development and Implementation at Tufts-NEMC
Ziskind Building	7 <sup>th</sup> Floor	V.S. Balakrishnan, MD's research lab
Floating Building	7 <sup>th</sup> Floor	Inpatient dialysis services provided by DCI
North Building	7 <sup>th</sup> Floor	Primary location for inpatient ward service

Table 2: Offsite Clinical Nephrology Activities Affiliated with Tufts-NEMC

Area	Physicians	Practice Sites	Services Offered
Concord	Andrei Kouznetsov, MD Valerie R. Price, MD	<ul style="list-style-type: none"> <li>Pratt Medical Group Nephrology and Hypertension</li> <li>Emerson Hospital</li> <li>DCI Walden Pond</li> </ul>	<ul style="list-style-type: none"> <li>Outpatient nephrology</li> <li>Inpatient consultation and dialysis services</li> <li>Outpatient dialysis services</li> <li>Outpatient nephrology</li> </ul>
Greater Boston	Michael B. Cohen, MD Anthony Z. Dash, MD Samina S. Khan, MD	<ul style="list-style-type: none"> <li>Hospital-based clinics at Lawrence Memorial and Melrose-Wakefield hospitals</li> <li>Caritas St. Elizabeth's Medical Center, Kindred, Lawrence Memorial, Melrose-Wakefield, Mt. Auburn and Whidden hospitals</li> <li>DCI Ball Square, Caritas St. Elizabeth's Medical Center, Malden, Medford, Saugus, Stoneham, and Woburn dialysis units</li> </ul>	<ul style="list-style-type: none"> <li>Inpatient consultation and dialysis services</li> <li>Outpatient dialysis services</li> </ul>

## Staffing

### Physician Staff

Andrew S. Levey, MD, Chief	Dr. Gerald J. and Dorothy R. Friedman Professor of Medicine
Ronald D. Perrone, MD, Associate Chief	Professor of Medicine
V. S. Balakrishnan, MD, MRCP, PhD	Assistant Professor of Medicine
Jeanine A. Carlson, MD	Associate Clinical Professor of Medicine
Carmen Castaneda-Sceppa, MD, PhD	Assistant Professor of Medicine
	Associate Professor of Nutrition
	Friedman School of Nutrition Science and Policy
	Scientist
	Jean Mayer USDA Human Nutrition Research
	Center on Aging at Tufts University
Michael B. Cohen, MD	Assistant Professor of Medicine

Anthony Z. Dash, MD  
Scott J. Gilbert, MD  
John T. Harrington, MD

Annamaria T. Kausz, MD, MS  
Samina S. Khan, MD, MPH, MBA  
Andrei Kouznetsov, MD  
Amy B. Kuhlik, MD

Klemens B. Meyer, MD  
Dana C. Miskulin, MD, MS  
Brian J. G. Pereira, MD, MBA  
Valerie R. Price, MD  
Mark J. Sarnak, MD, MS  
Lesley A. Stevens, MD, MS  
Katrin Uhlig, MD, MS  
Daniel E. Weiner, MD, MS

### **Special and Scientific Staff**

Vandana Menon, MD, PhD, MPH, MS  
Madhumati Rao, MD  
Michelle M. Richardson, PharmD,  
BCPS, FCCP

### **Associate Physician Staff**

Bertrand L. Jaber, MD

Orfeas Liangos, MD

Nicolaos E. Madias, MD

### **Adjunct Physician Staff**

Miguel Cendoroglo, MD

John Gill, MD, MS

Assistant Professor of Medicine  
Assistant Professor of Medicine  
Professor of Medicine  
Dean Emeritus  
Tufts University School of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine  
Dean of Students  
Tufts University School of Medicine  
Associate Professor of Medicine  
Assistant Professor of Medicine  
Professor of Medicine  
Assistant Clinical Professor of Medicine  
Associate Professor of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine

Assistant Professor of Medicine  
Assistant Professor of Medicine  
Assistant Professor of Medicine

Associate Professor of Medicine  
Vice Chairman of Medicine for Clinical Affairs  
Caritas St. Elizabeth's Medical Center  
Assistant Professor of Medicine  
Division of Nephrology  
Caritas St. Elizabeth's Medical Center  
Maurice S. Segal, MD Professor of Medicine  
Chairman, Department of Medicine  
Caritas St. Elizabeth's Medical Center  
Chief Academic Officer  
Caritas Christi Health Care System

Associate Professor of Medicine  
Federal University of Sao Paulo  
Sao Paulo, Brazil  
Assistant Professor of Medicine  
University of British Columbia and St. Paul's Hospital  
Vancouver, Canada

Tazeen H. Jafar, MD, MPH

Associate Professor  
Head of the Section of Nephrology  
Director of the Clinical Epidemiology Unit Departments of  
Medicine and Community Health Sciences  
Aga Khan University  
Karachi, Pakistan

Gregorio Obrador, MD, MPH

Professor of Medicine  
Academic Dean  
Panamerican University School of Medicine  
Mexico City, Mexico

## Management Staff

Anna M. Suffoletta, MBA

Administrator  
William B. Schwartz Division of Nephrology and  
Pratt Medical Group Nephrology and Hypertension  
Concord

Timothy Rinner, MA

Research Administrator  
William B. Schwartz Division of Nephrology

## Faculty Descriptions

### Andrew S. Levey, MD

**Dr. Levey's** interests are in patient care, research, clinical practice guidelines, training in research and education, and health care policy related to chronic kidney disease (CKD).

His *patient care interests* are in CKD, diabetic kidney disease, polycystic kidney disease, systemic lupus erythematosus, and transplantation.

His *research interests* include measurement of kidney function; epidemiology of CKD, treatments to slow the progression of CKD, cardiovascular disease in CKD, nutrition in CKD, and assessment of outcomes in patients treated by dialysis and kidney transplantation. He was the principal nephrologist co-investigator for the NIDDK-sponsored Modification of Diet and Renal Disease (MDRD) Study. He and his colleagues have developed new equations to estimate GFR from serum creatinine using this large database, and he is now leading the NIDDK-sponsored CKD Epidemiology Collaboration (CKD-EPI) to pool databases from other studies to develop improved estimating equations. He was Principal Investigator for the ACE Inhibition in Progressive Renal Disease (AIPRD) Study Group, a collaboration of investigators who have pooled individual patient data on clinical trials of ACE inhibitors in nondiabetic kidney disease. He was Principal Investigator for the NIDDK-sponsored Hemodialysis (HEMO) Study, comparing the standard dose of dialysis with high dose of dialysis. He was the principal nephrologist co-investigator for the AHRQ-sponsored CHOICE Study, a Patient Outcomes Research Team, studying kidney failure treated by dialysis.

Dr. Levey is a widely recognized authority on *clinical practice guidelines* in CKD. He led the National Kidney Foundation (NKF) Task Force on Cardiovascular Disease in 1998. He was the Chair for two NKF Kidney Disease Outcome Quality Initiation (K/DOQI) Work Groups. "Chronic Kidney Disease: Evaluation, Classification and Stratification of Risk" was published in 2002. "Hypertension and Antihypertensive Agents in Chronic Kidney Disease" was published in 2004. He recently led a Kidney Disease Improving Global Outcomes (KDIGO) conference on definition

and classification of CKD. He is Director of the NKF Center on Clinical Practice Guideline Development and Implementation at Tufts-NEMC.

Dr. Levey's interests in *training* are focused primarily at the level of post-graduate fellowship training and mentoring junior faculty. He directs the large research fellowship-training program of the Division. He is Principal Investigator of the Division's 5-year NIDDK grant (T32) "Epidemiology, Clinical Trials and Outcomes Research." The research program is also funded, in part, by the NKF Center, the joint fellowship-training program of Tufts-NEMC and Caritas St. Elizabeth's Medical Center, and grants and contracts from foundations and industry.

Dr. Levey's contributions to *policy* are focused primarily on research and guideline implementation related to CKD. He is a member of the National Kidney Disease Education Program (NKDEP) of the NIDDK. He is Associate Editor for Kidney Disease and Hypertension for the *Annals in Internal Medicine*. Beginning in 2006, he will be the Editor-in-Chief of the *American Journal of Kidney Diseases*.

#### Ronald D. Perrone, MD

**Dr. Perrone's** patient care interests are in polycystic kidney disease, general nephrology, acid-base disorders, hypertension, and kidney transplantation medicine. His research interests are largely focused in the area of polycystic kidney disease, including slowing progression and determining the natural history of the extrarenal complications. In prior studies, he addressed the mortality of extrarenal complications of polycystic kidney disease after end-stage renal disease. He will continue this work in collaboration with Drs. Alan Collins and Blanche Chavers of the United States Renal Data System. Dr. Perrone also is the principal investigator of the Boston Patient Care Center of an NIH-funded multi-center clinical trial (HALT Progression in PKD, part of the Polycystic Kidney Disease Clinical Trials Network). This study will use angiotensin converting enzyme inhibitors in combination with angiotensin receptor blockers to slow the progression of polycystic kidney disease and will utilize the unique endpoint of kidney volume growth as assessed using magnetic resonance imaging. Tufts-NEMC is one of the four national HALT-PKD Study centers that will conduct this 6-year, \$25 million study sponsored by the NIH. Drs. Perrone (the PI) and Miskulin will direct the study that is anticipated to start in the winter of 2006.

#### Vaidyanatha S. Balakrishnan, MD, PhD

**Dr. Balakrishnan's** clinical specialties are CKD, dialysis, transplantation and the treatment of kidney stones. His research interests focus on factors modulating inflammation and oxidative stress and their impact on clinical outcomes among patients with CKD, particularly those on hemodialysis. He is interested in the impact of pro-inflammatory and anti-inflammatory cytokines and cytokine-specific inhibitory proteins on clinical outcomes in patients on hemodialysis. In recent years, Dr. Balakrishnan has focused on the role of genetic factors, particularly single nucleotide polymorphisms involving the cytokine genes, modulating the micro-inflammatory state and clinical outcomes among hemodialysis patients. As listed on page 31, Dr. Balakrishnan has received several research awards for his work on oxidative stress and inflammation.

#### Jeanine A. Carlson, MD

**Dr. Carlson's** clinical practice is within the Pratt Diagnostic Center. She continues to be an active nephrologist, with particular expertise in the medical complications of pregnancy. The Pratt Diagnostic Center is a concierge-style medical practice that is offered to patients who want to spend more time with their doctors, while exploring preventative and wellness techniques.

Patients pay an annual fee for this service, and the funding benefits Tufts-NEMC's primary care practice, General Medical Associates.

#### Carmen Castenada-Sceppa, MD, PhD

**Dr. Sceppa's** research focuses on the role of protein nutrition (primarily protein) and exercise (primarily resistance training) to counteract the loss of muscle mass and function with age and with diabetes and CKD. She studies mechanisms associated with muscle wasting including insulin resistance and inflammation. Dr. Sceppa's research efforts include reaching out to populations of diverse ethnic backgrounds as well as translating her research findings into clinical practice.

#### Michael B. Cohen, MD

**Dr. Cohen's** focus is on the clinical practice of nephrology at Melrose-Wakefield Hospital in affiliation with Tufts-NEMC. He consults in both the inpatient and outpatient settings on the care of patients with kidney disease, hypertension, and those treated with hemodialysis and peritoneal dialysis. Dr. Cohen is Co-Medical Director at the DCI Ball Square dialysis unit in Somerville. Additionally he is involved with teaching medical students, residents, and fellows in nephrology.

#### Anthony Z. Dash, MD

**Dr. Dash's** focus is on the clinical practice of nephrology in the community. He consults in both the inpatient and outpatient settings on the care of patients with kidney disease, hypertension, and those treated with hemodialysis and peritoneal dialysis. Dr. Dash is the Co-Medical Director at the DCI Ball Square dialysis unit in Somerville.

#### Scott J. Gilbert, MD

**Dr. Gilbert** coordinates the educational activities within the Division. He is the Associate Director of the Fellowship Training Program and coordinates housestaff nephrology education, overseeing rotations on the Ward and Consult services and in the Kidney and Blood Pressure Center. Dr. Gilbert is active in reform of the educational curriculum at Tufts-NEMC. As described on page 40, he also plays a major role in medical student education at TUSM where he directs the Renal Pathophysiology course and teaches Consultative Nephrology. Dr. Gilbert's other educational activities include teaching renal pharmacology at the Sackler School of Graduate Biomedical Sciences at Tufts University. Dr. Gilbert is also the medical director of the Kidney and Blood Pressure Center. His clinical interests are the treatment of CKD, hemodialysis and transplantation. Dr. Gilbert's research interests include the prevention and treatment of lupus nephritis.

#### John T. Harrington, MD

**Dr. Harrington** has been a part of the Nephrology Division at Tufts-NEMC since his fellowship training under Drs. William B. Schwartz and Jerome P. Kassirer in the mid-1960s. Now Dean Emeritus and Professor of Medicine at TUSM, Dr. Harrington focuses on outpatient care, inpatient consultation and medical education of nephrology fellows, internal medicine house staff and medical students. In December 2005, he completed 28 years as a founding co-editor of the Nephrology Forum, which had been published monthly in *Kidney International*, the journal of the International Society of Nephrology. His intellectual interests remain the broad field of clinical nephrology and specifically the arcane world of acid-base, fluid and electrolyte disturbances.

Bertrand L. Jaber, MD

**Dr. Jaber's** research interests are broad and include: biocompatibility of hemodialysis membranes, apoptosis of leukocytes in uremia, dialysis delivery in acute renal failure, novel extracorporeal adsorptive therapies in end-stage renal disease, the role of daily hemofiltration in end-stage renal disease, in vivo and in vitro performance of dialyzers, effect of kidney transplantation on sleep apnea, and cytokine gene polymorphisms in acute renal failure. Dr. Jaber is the Vice President for Clinical Affairs at Caritas St. Elizabeth's Medical Center.

Annamaria T. Kausz, MD

**Dr. Kausz** completed a K08 grant award from the NIDDK and currently has a Health Services Research Scholar Award from the American Society of Nephrology. Her research encompasses evaluation of the care of patients with CKD at all phases, including prior to and after initiation of dialysis, and following kidney transplantation. Her research has focused on the impact of the complications associated with decreased kidney function and comorbid conditions on outcomes among patients with CKD. Dr. Kausz is now studying the importance of barriers to care on quality of care among kidney transplant recipients. In the first half of 2005, Dr. Kausz accepted a position as the Nephrology Editor at UpToDate, an internationally known Web-based resource for practicing physicians. She remains affiliated with the Division, participating in patient care, research and other academic activities. Dr. Kausz's clinical interests are in CKD, dialysis, transplantation, and pediatric nephrology.

Samina S. Khan, MD, MPH, MBA

**Dr. Khan's** primary research interests involve resource utilization and costs of care, medication adherence among patients with CKD, and renal osteodystrophy. Dr. Khan is developing an economic model in collaboration with statisticians in the department of Clinical Care Research at Tufts-NEMC and an economist at Brandeis University. This model will help to project future costs of care of patients with CKD. Dr. Khan directs the Bone Biopsy Program in the Kidney and Blood Pressure Center. Extending her services beyond the Tufts-NEMC, Dr. Khan has recently set up a Bone Biopsy Program at Caritas St. Elizabeth's Medical Center. She serves as a faculty member in the department of Continuing Medical Education at TUSM and also provides significant clinical coverage for outside nephrology practices affiliated with the Division. Her clinical practice interests are CKD, dialysis, transplantation, and bone biopsy.

Andrei Kouznetsov, MD

**Dr. Kouznetsov** joined the full-time staff of the Division on July 1<sup>st</sup> 2005. Upon completing his nephrology fellowship at Tufts-NEMC, Dr. Kouznetsov was appointed as Assistant Professor of Medicine, TUSM. He practices at the Pratt Medical Group Nephrology and Hypertension clinic in Concord and provides nephrology consultative services at Emerson Hospital. Dr. Kouznetsov is also the Associate Medical Director of DCI Walden Pond in Concord. His clinical specialties are CKD, hypertension, diabetes, dialysis, transplantation and general nephrology.

Amy B. Kuhlik, MD

**Dr. Kuhlik** is the Dean for Student Affairs at TUSM. She maintains a clinical practice within the Division by holding one half-day clinic a week and also attending on the nephrology consult service several weeks a year. Dr. Kuhlik's clinical specialties are CKD, pregnancy, and polycystic kidney disease.

Orfeas Liangos, MD

**Dr. Liangos** is the Director of Acute Renal Failure Research at Caritas St. Elizabeth's Medical Center (CSEMC), member of the Kidney and Dialysis Research Laboratory at CSEMC and

member of the Dialysis Research Laboratory at Tufts-NEMC. He directs the acute renal failure research efforts at CSEMC and Tufts-NEMC, as well as in collaboration with outside institutions. Dr. Liangos also trains Tufts-NEMC research fellows. Dr. Liangos' research interests within acute renal failure include: genetic polymorphisms, device-related research, dialysis delivery and anemia. Dr. Liangos also participates in resident and student teaching at CSEMC and at TUSM. In addition, he performs clinical duties for the Department of Medicine at CSEMC.

#### Nicolaos E. Madias, MD

**Dr. Madias** is interested in the broad field of acid-base and electrolyte metabolism. This year, along with three colleagues, he co-edited and authored a new text on acid-base physiology and pathophysiology (*Acid-Base Disorders and Their Treatment*. F. John Gennari, Horacio J. Adrogué, John H. Galla, and Nicolaos E. Madias, editors; Taylor & Francis, Boca Raton, 2005). He is also pursuing several projects on the epidemiology of hyponatremia.

#### Vandana Menon, MD, PhD, MPH, MS

**Dr. Menon** is the recipient of a K23 Career Development Award from the NIDDK to investigate the role of non-traditional risk factors in the development of cardiovascular disease in CKD. Using data from the MDRD Study cohort, Dr. Menon is studying novel risk factors, including oxidative stress and insulin resistance, in non-diabetic kidney disease. In addition, she will conduct an ancillary study to the HALT-PKD trial examining the interrelationships between inflammation, oxidative stress and endothelial function in patients at different stages of PKD. Dr. Menon has also received funding from the Polycystic Kidney Disease Foundation and Satellite Healthcare to study the epidemiology of endothelial function in PKD. Dr. Menon's publications during the past year include examination of CRP, albumin, hyperglycemia, phosphorus, and calcium, as risk factors for outcomes in the MDRD Study cohort.

#### Klemens B. Meyer, MD

**Dr. Meyer** is Director of Dialysis Services, and Medical Director at DCI Boston and DCI Walden Pond. His clinical interests are nephrolithiasis, diabetic nephropathy, CKD, dialysis, and kidney transplantation. Dr. Meyer's research interests are the measurement of patient experience and dialysis informatics. He continues to work with other HEMO and CHOICE Study investigators on the analysis of quality of life data from those studies, and with Dr. Richardson on observations collected in the course of clinical care by DCI. They are currently collaborating with Drs. Stevens and Miskulin, and with John E. Ware, Jr. PhD and his colleagues at QualityMetric, Inc., on the development of computerized adaptive testing of quality of life in CKD. In his capacity as DCI's Medical Director for Information Systems, Dr. Meyer participates in the development and operations of both medical and business information systems, supervising a team of approximately 45 information technology and three nurses at DCI and Keane, Inc. in Nashville and Chicago.

#### Dana C. Miskulin, MD, MS

**Dr. Miskulin** is the Principal Investigator of a Career Development Award from the National Institutes of Health pertaining to the measurement of case-mix severity in dialysis patients and its application to clinical trials and quality of care analyses. Her clinical care interests are polycystic kidney disease and outcomes and quality of care in CKD. Dr. Miskulin also directs the DCI Comorbidity Assessment Project whose goal is to develop and implement procedures for the collection of high quality comorbidity as part of routine care at DCI dialysis units. Dr. Miskulin is also interested in autosomal dominant polycystic kidney disease. She is a Co-Investigator for the HALT-PKD Study, an NIH-sponsored multicenter, randomized clinical trial that will assess the efficacy of dual vs. single level blockade of the renin angiotensin system as

well as two levels of blood pressure control on slowing kidney growth and functional decline in autosomal dominant polycystic kidney disease.

#### Brian J.G. Pereira, MD, MBA

**Dr. Pereira** has three major areas of research interest. In the laboratory he is interested in cytokines and cellular mechanisms in dialysis; his work in clinical trials focuses on hepatitis in dialysis and transplantation; and finally his interest in outcomes and economics focus on the indices and costs of care among patients with CKD. He has mentored more than 25 post-doctoral trainees, the majority of who are in senior leadership positions in academia and industry in the US and abroad. In 2005, Dr. Pereira assumed a new position as President of Advanced Magnetics. He has retained his appointment within the Division.

#### Valerie R. Price, MD

**Dr. Price** joined the part-time staff of the Division on March 1<sup>st</sup> 2005. Dr. Price is a Clinical Nephrologist who cares for patients at Emerson Hospital, as well as outpatients in Concord and its surrounding communities. Her areas of interest include acute and chronic kidney failure, management of chronic dialysis patients, and electrolyte disorders. In addition, Dr. Price works closely with community urologists to manage kidney stone disease. She volunteers at a local school, teaching children about human anatomy and physiology.

#### Madhumati Rao, MD

**Dr. Rao's** research interests are related to the impact of genetic variation upon inflammatory mediators and growth factors among patients with CKD and the ultimate translation of these relationships into improved patient outcomes. She is a recipient of a career development award from the NIH/NIDDK to study the role of genetic polymorphisms of TGF- $\beta$ 1 and PAI-1 in cardiovascular and kidney disease progression among patients with CKD. In addition she will extend these studies to the development and progression of kidney disease in patients with type I diabetes followed by the Genetics of Kidney Disease in Diabetes (GoKinD) study conducted by the Joslin Diabetes Center and George Washington University Biostatistics Center. In collaboration with Dr. Balakrishnan, she is also initiating a study to evaluate the role of mitochondrial dysfunction among dialysis patients, funded by DCI.

#### Michelle M. (Chapman) Richardson, PharmD, FCCP, BCPS

**Dr. Richardson's** research interest is the study of quality of life and satisfaction in patients with CKD. As a pharmacist, her clinical interests involve appropriate dosing and use of medications in patients with CKD. Dr. Richardson continues to receive contract funding from DCI to direct the Outcomes Monitoring Program (OMP). The OMP is responsible for coordinating routine assessments of health status and patient satisfaction throughout DCI's national chain of dialysis units. Dr. Richardson is also a Clinical Associate Professor of Pharmacy at Northeastern University where she is responsible for teaching pharmacy students both in the classroom and in the dialysis unit.

#### Mark J. Sarnak, MD, MS

**Dr. Sarnak** is the Associate Director of the Research Training Program in Nephrology. He is interested in cardiovascular epidemiology in CKD. His research focuses on traditional and non-traditional cardiovascular risk factors. Drs. Sarnak and Levey have undertaken the Cardiovascular Disease Pooling Project, pooling multiple NHLBI databases to evaluate the effect of kidney function and anemia on cardiovascular disease. Drs. Sarnak and Weiner collaborate with Marshal Folstein, MD of the Department of Psychiatry forming a multidisciplinary research team to study the association of homocysteine, cognition and

cerebrovascular disease in the homebound elderly. Dr. Sarnak is funded by the NIDDK and the National Institutes of Aging to perform these research projects. Dr. Sarnak's clinical specialties are in cardiovascular disease in patients with kidney disease, dialysis, kidney transplantation, and nephrolithiasis.

#### Lesley A. Stevens, MD, MS

**Dr. Stevens's** primary interests are in epidemiology and outcomes related to CKD. She is the principal co-investigator of the Chronic Kidney Disease-Epidemiology (CKD-EPI) Study Group, a collaborative effort to use pooled individual patient data to address central questions in the epidemiology of CKD. As part of the first question of this collaboration, Dr. Stevens is also developing improved glomerular filtration rate (GFR) estimation equations and analyzing administrative data from a national managed care organization with the goal to assess the current levels of care provided to patients with and at risk for CKD. The second major focus of Dr. Stevens's work is research and policy related to implementation of CKD Guidelines. She is Program Director, Implementation in the NKF Center for Guidelines Development and Implementation. Dr. Stevens works with NKF leadership and national organizations to implement CKD guidelines. As described on page 51, Dr. Stevens was instrumental in developing the new ICD-9-CM codes for CKD. She is a member of the Kidney Disease Early Evaluation Program (KEEP) Steering Committee and has been responsible for coordinated calibration of the serum creatinine assay. Dr. Stevens's clinical interests are general nephrology and the detection and treatment of CKD.

#### Katrin Uhlig, MD, MS

**Dr. Uhlig** is the Nephrology Program Director of the NKF Center for Clinical Practice Guideline Development and Implementation at Tufts-NEMC. This Center is described in detail in the later in this report. Dr. Uhlig currently co-directs the evidence review teams of several guideline projects: the K/DOQI Anemia in Chronic Kidney Disease workgroup, updates for the K/DOQI Guidelines on Hemodialysis Adequacy, Peritoneal Adequacy, Vascular Access workgroups, and the KDIGO Prevention, Diagnosis, Evaluation and Treatment of Hepatitis C in Chronic Kidney Disease workgroup. Dr. Uhlig is co-chairing an international KDIGO Evidence Rating Group tasked with achieving consensus on the methodology of grading the strength of evidence and of guideline recommendations. She also trains fellows in the development of evidence-based clinical practice guidelines. She lectures and writes on care related to CKD, and aspects of development and implementation of evidence-based clinical practice guidelines. Another focus of her research is the study of lipoprotein (a) in CKD. Dr. Uhlig's clinical focus is on CKD, dialysis, and transplantation.

#### Daniel E. Weiner, MD, MS

**Dr. Weiner** is the recent recipient of a K23 Career Development Award from the NIDDK to investigate cerebrovascular disease and cognitive impairment in individuals with CKD. Using data from the CKD Pooling Project, Dr. Weiner will assess CKD as a risk factor for CKD outcomes and examine the role of traditional CVD risk factors in modifying this relationship. Dr. Weiner is also conducting an ancillary study to the National Institute of Aging-funded Nutrition and Memory in the Elderly study in which he is investigating microalbuminuria as a risk factor for magnetic resonance imaging findings of cerebrovascular disease and cognitive impairment. Dr. Weiner is also continuing his research into cardiovascular disease risk factors in kidney disease. In addition, Dr. Weiner is the Associate Medical Director of DCI Boston. In this role, he is working to enhance care for dialysis patients and dialysis education at Tufts-NEMC. Dr. Weiner's clinical specialties are nephrology, internal medicine, dialysis and cardiovascular disease in patients with CKD.

## **Division Support Staff**

Members of the support staff sustain the Division's administrative, clinical, and research operations. Anna M. Suffoletta, Administrator, supervises 22 onsite and 3 offsite personnel. The personnel are diverse and each staff member brings specialized knowledge and skills to their respective positions. All staff function within a team (i.e., administrative, clinical or research) supporting operations and each other. Personnel are cross-trained, enabling each team to support the other when the need arises. Our ambulatory support staff works very closely with the physicians, fellows and nurses to provide high-quality service to our patients.

### Administrative Support Personnel

Patricia Collins, Administrative Assistant II  
Lorna Davies, Administrative Assistant II  
Gabrielle Nosek, Administrative Assistant II  
Open Position, Administrative Assistant II

### Ambulatory Supervisory Personnel

**Kidney and Blood Pressure Center, Boston**  
Helen Freedman, Patient Service Coordinator III

**Pratt Medical Group, Concord**  
Julie Flynn, Office Manager

### Ambulatory Support Personnel

**Kidney and Blood Pressure Center, Boston**  
Debbie Mitchell-Dozier, RN, Staff Nurse  
Open Position, Patient Service Coordinator III  
Zainab Shah, Patient Service Coordinator II  
Aga Szydelko, Patient Service Coordinator I  
Chau Truong, Medical Assistant

**Pratt Medical Group, Concord**  
Mary Gregoire, RN, Staff Nurse  
Gail Seaburg-Grendon, Receptionist

### Research Administration and Support Personnel

Priya Chandra, Research Assistant II  
Amy Deysher, Research Assistant II  
Amy Earley, Research Assistant II  
Alice Martin, RN, Research Nurse  
Payal Parikh, Research Assistant II  
Rebecca Persson, Research Assistant II  
Timothy Rinner, MA, Research Administrator  
Polchevi Sengo, Research Assistant II  
Gertrude (Peachy) Simon, RN, Clinical Coordinator II  
Lucy Zhang, Statistician  
Open Position, Statistician  
Open Position, Clinical Coordinator II

## Faculty and Staff Changes in 2005

### Faculty Changes

- Dr. Kausz became the Nephrology Editor at Up-To-Date as of April 4<sup>th</sup> 2005. She retains an appointment within the Division, maintaining a part-time clinical role.
- Dr. Kouznetsov joined the full-time staff of the Division on July 1<sup>st</sup> 2005 and was appointed as Assistant Professor of Medicine. He is a clinician at the Pratt Medical Group Nephrology and Hypertension clinic, Associate Medical Director DCI Walden Pond, and also provides consultation services at Emerson Hospital.
- Paul Muntner, PhD was a Visiting Professor in the Division from October through December 2005. Dr. Muntner holds an appointment in the Department of Epidemiology at Tulane University School of Public Health and Tropical Medicine. Due to the temporary shutdown of Tulane University in New Orleans following Hurricane Katrina, Dr. Muntner temporarily moved to Boston and forged a professional affiliation with the Division and Tufts-NEMC pending the reopening of Tulane University. Dr. Muntner returned to Tulane in December, but we expect that the relationships forged during his tenure here will continue to be productive.
- Dr. Pereira left New England HealthCare Foundation in November 2005 to become Chief Executive Officer of Advanced Magnetics, Incorporated. Advanced Magnetics develops and commercializes nanoparticle technology for use in therapeutic iron compounds to treat anemia, as well as novel imaging agents to aid in the diagnosis of cardiovascular disease and cancer. Dr. Pereira has retained his appointment within the Division.
- Dr. Price joined the part-time staff of the Division on March 1<sup>st</sup> 2005. Dr. Price was appointed Assistant Clinical Professor of Medicine, TUSM and practices with Dr. Kouznetsov at the Pratt Medical Group Nephrology and Hypertension office in Concord. Dr. Price also provides consultation services at Emerson Hospital and outpatient dialysis services at DCI Walden Pond.
- Dr. Weiner joined the full-time staff of the Division on July 1<sup>st</sup> 2005. Dr. Weiner has been appointed as Assistant Professor of Medicine, TUSM and is the Associate Medical Director at DCI Boston.

### Staff Changes

- Jena Beach, RN, NP resigned her position as transplant coordinator.
- Debbie Chabot, MSN, RN, CS, NP, staff nurse in the Kidney and Blood Pressure Center, resigned her position in June 2005.

- Asha Masurekar left the Outcomes Monitoring Program as Program Assistant to study for her Masters degree in Public Health at the Harvard School of Public Health. Joy Falk, a graduate of Wellesley College, replaces her.
- Debbie Mitchell-Dozier, RN joined the Division as a staff nurse in the Kidney and Blood Pressure Center in June 2005.
- Maria Silveira, Patient Service Coordinator II in the Kidney and Blood Pressure Center, resigned her position in October 2005.
- Cheryl Williams, RN, NP was hired as transplant coordinator.

### ***2005 Administrative Accomplishments***

The Division enjoyed many administrative accomplishments this year. Two of the most exciting accomplishments were the opening of a nephrology practice in Concord, Massachusetts and the initiation of The Center for Polycystic Kidney Disease at Tufts-NEMC.

#### **Pratt Medical Group Nephrology and Hypertension, Concord MA**

In January 2005, the Division was offered the opportunity to open a nephrology practice in Concord, Massachusetts, to assume the medical directorship at DCI Walden Pond, and to participate in the care of patients hospitalized at Emerson Hospital. DCI Walden Pond currently treats approximately 55 chronic hemodialysis patients, and provides inpatient hemodialysis services at Emerson Hospital. Dr. Meyer became Medical Director of DCI Walden Pond on March 1. Dr. Valerie Price, who has been practicing nephrology in Concord for several years, joined the Pratt Medical Group. On July 1, Dr. Kouznetsov completed his training as a clinical fellow in the Division, joined the Concord practice, and was appointed the Associate Medical Director of DCI Walden Pond. Over the past year, the practice has grown substantially and the dialysis unit has opened an evening patient shift. A number of patients have been referred for kidney transplantation at Tufts-NEMC.

#### **Initiation of The Center for Polycystic Kidney Disease at Tufts-NEMC**

Dr. Perrone, leading a team of internationally recognized experts, has created The Center for Polycystic Kidney Disease (PKD) at Tufts-NEMC. This Center offers comprehensive, coordinated, multidisciplinary care for patients with polycystic kidney disease. Areas of expertise include dialysis and transplantation, treatment of hypertension, and evaluation and management of the complications of liver and kidney cysts, and cardiovascular issues. The services available to patients are:

- Nephrology care with PKD expertise
- Coordinated care for CKD
- Nutritional counseling
- Laparoscopic cyst reduction
- Interventional urology
- Preparation for dialysis
- Dialysis access surgery
- Kidney transplantation
- Extended PKD family kidney donor planning
- Genetic counseling
- Presymptomatic screening and family planning
- Leading edge clinical trials

## **New Billing Cards**

Dr. Perrone spearheaded the development of new billing cards for the Division to enhance the efficiency and accuracy of the billing process. There are two cards, one for physicians at Tufts-NEMC and one for all other offsite locations. The new billing cards are easy to use. Billing areas, locations, and frequently used ICD-9 codes and diagnoses are printed directly onto the cards and are selected using checkboxes. We anticipate that the new billing cards will decrease physician billing effort and will increase the accuracy and timeliness of billing card submission.

## **New Faculty Assignments**

- In July, Dr. Kouznetsov was appointed Associate Medical Director for DCI Walden Pond.
- On March 1, 2005, Dr. Meyer was appointed Medical Director for DCI Walden Pond.
- Dr. Richardson was appointed Director of Communications for the Division. She will coordinate all Division communications including the Web site and Annual Report.
- Dr. Stevens was appointed the Director of Quality Improvement for the Division. Her responsibilities include: reporting and collecting data related to Division quality improvement activities, providing methodological expertise in assessment and implementation of quality care, implementing activities upon requests from people outside of the division, and educating Division members on methods of quality improvement activities.
- Dr. Weiner was appointed Associate Medical Director of DCI Boston. His focus is on increasing the use of AV fistulae as hemodialysis access by engaging transplant surgery and interventional radiology in a multidisciplinary approach to both obtain and maintain dialysis access.

## Service

Members of the Division are involved in service on local, national and international levels.

### Service to Tufts-NEMC

- Dr. Menon was appointed to the Human Investigations Review Committee (i.e., Investigational Review Board).
- Dr. Meyer serves on the Information Systems Advisory Committee, which provides overall user input about the general direction and oversight of information systems at Tufts-NEMC.
- Dr. Meyer chairs the Health Information Committee and has since 1993. The Committee continues to play an important role in maintaining and improving the quality of care at Tufts-NEMC. Working with David Budding, Phillip Argyris and Melissa Pike of Information Systems and with Michele Ciampolillo of Medical Records, over the past year, the Committee has achieved a significant and continuing improvement in the timeliness of dictation and signature of operative notes and discharge summaries hospital-wide.
- For several years, Dr. Meyer has been a member of the Care Review and Patient Safety Committee that is responsible for overseeing hospital-wide quality improvement projects.
- Dr. Stevens was appointed to the Care Review and Patient Safety Committee.
- Dr. Miskulin serves on the Hospital Pharmacy and Therapeutics Committee, a policy setting and monitoring committee of the medical staff responsible for the appropriate use of drugs.
- Dr. Perrone continues to serve as the United Network for Organ Sharing (UNOS) Transplant Physician at Tufts-NEMC.
- Drs. Perrone and Meyer serve on the Information Systems Clinical Working Group. This committee provides clinician input regarding development of the hospital's clinical systems. It is currently focusing on implementation of Soarian, the new hospital-wide clinical information interface developed by Siemens.
- Dr. Sarnak is a member of the Tufts-NEMC Internal Medicine Residency Selection Committee.

### Service to TUSM/Sackler School of Graduate Biomedical Sciences

- Dr. Levey chaired the Search Committee for Chair of the Department of Urology at TUSM and Urologist-in-Chief at Tufts-NEMC.
- Dr. Levey is a member of the Clinical Research Advisory Committee at the Sackler School of Graduate Biomedical Sciences at Tufts University.
- Dr. Madias is a member of the Committee on Clinical Appointments and Promotions at TUSM.
- Dr. Perrone was elected to serve as the representative of the Tufts-NEMC Department of Medicine on the TUSM Faculty Senate.

### Service to Professional Organizations

In addition to providing local service, Division members are actively involved in providing service to our professional organizations on the local, national, and international levels.

- In 2005, the Division submitted a proposal to house the editorial offices of the *American Journal of Kidney Diseases* (AJKD), the official journal of the NKF, beginning in 2007. This bid was accepted and the Division will be leading a multi-institution effort to continue to make AJKD the preeminent clinical journal in nephrology. Additionally, we will use this opportunity to enhance fellow and staff education in the manuscript writing, review, and operations.
- Dr. Balakrishnan was a member of the abstract review committee for the Annual Meeting of the American Society of Nephrology. He also co-chaired a session on "Inflammation and Oxidative Stress" during the Annual Meeting of the American Society of Nephrology in Philadelphia, PA.
- Drs. Carlson, Levey, Gilbert, Levey, Pereira, and Perrone serve as members of the Medical Advisory Board of the NKF Chapter of Massachusetts, Rhode Island, New Hampshire and Vermont.
- Dr. Harrington finished 10 years as co-chairperson of the Tufts Health Care Institute and completed his 5-year term (1999-2005) as a member of the Board of Directors of the NKF.
- Dr. Jaber participated as a member of the Scientific Program Committee and the Acute Renal Failure Abstract Review for the 2005 Spring Clinical Meetings of the NKF. Dr. Jaber also was a member of the Abstract Review Committee (Dialysis: Hemodialysis and other Renal Replacement Therapies: Methods, Modeling, Adequacy and Experimental Models) for the 2005 Annual Meeting of the American Society of Nephrology.

- Dr. Jaber was the co-director of the Integrated Hemodialysis and Peritoneal Dialysis Course at the 2005 Annual Spring Clinical Meetings of the NKF.
- Dr. Jaber is a member of the Kidney Disease Outcomes Quality Initiative (K/DOQI) Advisory Board of the NKF. He has held this position since 2004.
- Dr. Levey served as a moderator of the Heart and Kidney Interactions in the Basic and Clinical Science Symposium at the American Society of Nephrology Meeting held in Philadelphia, PA.
- Dr. Madias was an abstract reviewer for Electrolyte and Acid-Base Disorders, and Session Chairman, for the 2005 Annual Meeting of the American Society of Nephrology.
- Dr. Meyer concluded his term as Chair of the Board of Directors of the End-stage Renal Disease Network of New England. He presided at the Network's annual meeting, which was attended by more than 500 dialysis professionals. He remains a member of the Board and of its Executive Committee.
- Dr. Meyer continues to serve on the NKF KDOQI Hemodialysis Adequacy work group that is responsible for drafting a new clinical practice guideline on initiation of hemodialysis.
- Dr. Pereira has been a member of the Board of Trustees of the Kidney Disease Improving Global Outcomes (KDIGO) Holdings since 2004 and in 2005 was appointed as a member of the KDIGO Board of Directors.
- Dr. Pereira is also a member of the American Society of Nephrology's Member Advisory Committee on Chronic Kidney Disease since 2003. Also in 2003, he was appointed as a member of the Public Policy Advisory Board of the American Society of Nephrology and remains an active member.
- Dr. Pereira has been a member of the International Society of Nephrology's Executive Committee of Commission for the Global Advancement of Nephrology since 2004.
- Dr. Pereira is the Past President of the NKF.
- Dr. Pereira is a member of the Organizing Committee for the 10<sup>th</sup> International Conference on Continuous Renal Replacement Therapy.
- Dr. Richardson continues to serve on the NKF KDOQI Diabetes in Chronic Kidney Disease work group.

- Dr. Sarnak participated as a member of the Clinical Science Committee of the American Society of Nephrology and the National Kidney Disease Education Program (NKDEP) Evaluation Committee.
- Dr. Stevens was appointed to the NKF's Kidney Early Evaluation Program (KEEP) Steering Committee.

### ***Administrative and Professional Awards and Honors***

- Drs. Harrington and Madias ended 28 years as founding co-editors of the Nephrology Forum, which appeared monthly in *Kidney International*, the journal of the International Society of Nephrology, from 1978 until December 2005. During that interval, over 325 Forums were published, including 12 in 2005.
- Drs. Jaber and Sarnak each were promoted to Associate Professors of Medicine at TUSM.
- Dr. Levey received the Distinguished Faculty Award from TUSM.
- Dr. Madias was named a fellow of the American Society of Nephrology.
- Dr. Pereira received the NKF 2005 Distinguished Service Award.

### **Patient Care**

The Division provides diagnostic and treatment expertise for patients with acute and chronic kidney disease, including kidney failure, fluid and electrolyte disorders, and all forms of hypertension. The staff has expertise in evaluation and treatment of nephrotic syndrome, glomerulonephritis, diabetic kidney disease, polycystic kidney disease, urinary tract infections, urinary reflux and obstruction, kidney stones and all other kidney diseases. Special diagnostic and treatment modalities include glomerular filtration rate estimation, kidney biopsy, immunosuppression, percutaneous transluminal renal angioplasty and stenting, low protein diets, hemodialysis, peritoneal dialysis, continuous venovenous hemofiltration, vascular access monitoring and repair, and kidney transplantation.

All our clinical programs continue to expand, offering care for a wide range of complex and complicated issues associated with acute and chronic kidney disease. The following section highlights our clinical programs.

**In 2005, outpatient volume increased 4.4% in the Kidney and Blood Pressure Center at Tufts-NEMC.**

## ***2005 New Clinical Initiatives***

### **Outpatient**

- On July 1<sup>st</sup> 2005, Dr. Uhlig began seeing patients in the Kidney and Blood Pressure Center, bringing the total number of clinic sessions to nine.
- The Kidney and Blood Pressure Center began the Ambulatory Blood Pressure Monitoring (ABPM) Program to more reliably assess hypertensive risk for kidney disease, cardiovascular disease, cerebrovascular disease, or other hypertensive complications; diagnose and manage white coat hypertension; and better assess hypotensive symptoms on appropriate antihypertensive therapy or apparent resistance to antihypertensive therapy.

### **Inpatient**

- In November, the Department of Medicine added a second intern to the inpatient nephrology service, thereby allowing an increase in the daily census to 15-20 patients, with approximately 5-10 admissions and discharges daily.
- In May, the DCI dialysis nursing and technical staff presented a neonatal CVVH poster and along with the North 7 staff displayed peritoneal dialysis equipment in the Tufts-NEMC atrium as part of National Nurses Week.

## ***Continuing Clinical Initiatives***

### **Outpatient Program Descriptions**

#### **Kidney and Blood Pressure Center**

Outpatient clinical activities take place primarily in the Kidney and Blood Pressure Center (KBPC), directed by Dr. Gilbert. The KBPC continues to exhibit annual growth. There are currently nine half-day a week clinics staffed by Drs. Balakrishnan, Gilbert, Harrington, Kausz, Khan, Kuhlik, Levey, Meyer, Miskulin, Perrone, Sarnak, and Uhlig. The KBPC specializes in the diagnosis and management of CKD, hypertension, glomerular diseases, kidney transplantation, kidney stones, and peritoneal dialysis. Recently, ambulatory blood pressure monitoring has been added to the services offered by the Clinic.

The KBPC emphasizes a multi-disciplinary approach to kidney disease. Collaboration with the Department of Transplant Surgery, the DCI outpatient dialysis unit, and the

Frances Stern Nutrition Center improve the quality of care delivered. Studies on lupus nephritis are run through the clinic in conjunction with the Division of Rheumatology, as are studies on genetic predisposition to progression of CKD.

Bone Disease Program

Dr. Khan directs the Tufts-NEMC Bone Disease Program. Dr. Khan is the first physician in New England to perform bone biopsy using the modern electric bone drill, which represents an important technical advance over older techniques. Bone biopsy guides the treatment of a wide spectrum of bone diseases, ranging from metabolic derangements commonly associated with CKD to complicated cases of osteoporosis. Patients are being referred not only from Tufts-NEMC nephrologists and endocrinologists, but also from primary physicians, nephrologists and endocrinologists practicing in the community. Dr. Khan works in collaboration with the Mayo Clinic located in Rochester MN where all bone biopsy samples are prepared and evaluated.

Outpatient Dialysis

**The DCI Boston dialysis nurses have a median 23 years of experience in dialysis, and the technical staff a median of 9 years!**

At Tufts-NEMC, Drs. Meyer and Weiner are the Director of Dialysis Services and Associate Director of Dialysis Services, respectively. The DCI Boston outpatient hemodialysis unit operates 21 stations; the unit has physical capacity for 24 stations. Contained within 3 consecutive floors are the hemodialysis unit and Drs. Meyer’s and Weiner’s offices, the Division’s research and administrative offices, and the Kidney and Blood Pressure Center. Physical proximity makes frequent patient contact practical. Debbie Van Allen, RN, MS, who joined the dialysis program in 1976, manages the outpatient dialysis program. Additional outpatient hemodialysis units affiliated with Tufts-NEMC are listed in Table 3.

Table 3: Outpatient Hemodialysis Units Affiliated with Tufts-NEMC

<b>Location</b>	<b>Dialysis Unit</b>	<b>Medical Directors</b>
Tufts-NEMC	DCI Boston	Klemens B. Meyer, Medical Director Daniel E. Weiner, Associate Medical Director
Somerville	DCI Ball Square	Michael B. Cohen, MD Co-Medical Director Anthony Z. Dash, MD Co-Medical Director
Concord	DCI Walden Pond	Klemens B. Meyer, MD Medical Director Andrei Kouznetsov, MD Associate Medical Director

Peritoneal dialysis services are provided by one of two DCI home dialysis programs, based at the Ball Square unit. Jane Maxim, RN, a former Tufts-NEMC dialysis nurse, is the nurse manager, working with Shue-Yearn Hwang, RN. Dr. Meyer is Medical Director of the Ball Square home dialysis program.

## Outpatient Volume

As demonstrated in Table 4, outpatient volume at Tufts-NEMC increased 4.4% from the last fiscal year. In addition, the number of dialysis treatments performed at the DCI Walden Pond dialysis unit has increased steadily over the 7 months since the Division opened the unit. Table 5 shows the number of outpatient dialysis visits by Division-affiliated physicians. All volume numbers are for the Tufts-NEMC and DCI fiscal year 2005 which ran from October 2004 - September 2005, unless otherwise stated.

Table 4: Comparison of Tufts-NEMC Outpatient Activity: Fiscal Year 2005 to 2004

Institution and Location	Fiscal Year		Percent Change
	2005	2004	
<b><u>Tufts-New England Medical Center</u></b>			
Kidney Blood Pressure Center	4,571	4,379	+4.4
Pratt Medical Group Nephrology and Hypertension, Concord	424*	NA	
<b><u>Dialysis Clinic, Incorporated</u></b>			
Boston (Tufts-NEMC) dialysis treatments	14,065	14,201	-1
Ball Square dialysis treatments	9,919	8,837	+12
Walden Pond dialysis treatments	3,828*	NA	

NA – Not applicable.

\* Visits from March 1<sup>st</sup> – September 30<sup>th</sup> 2005 (7 months)

Table 5: Outpatient Dialysis Visits by Division Physicians at Affiliated Units 2005

Dialysis Unit	Numbers of Visits
Cambridge	29
Caritas St. Elizabeth's Medical Center	217
Malden	59
Medford	151
Saugus	53
Stoneham	209
Woburn	20

## Inpatient Program Descriptions

### Nephrology Inpatient Services

Every 14 days, the Division's nephrologists rotate responsibility for patients hospitalized on the inpatient nephrology service at Tufts-NEMC. The nephrology and dialysis staff work closely with the nursing staff on North 7, the inpatient nephrology floor, to maintain continuity of care. In addition, all Division attending physicians participate in the inpatient nephrology consultation service. The consultation service responds to over 70 requests monthly providing expertise in all forms of renal replacement therapy, including

but not limited to hemodialysis, peritoneal dialysis, continuous renal replacement therapy (CVVH and SCUF), and charcoal hemoperfusion and performing all temporary access procedures required for initiating hemodialysis, including femoral and central catheter insertions.

### Kidney Transplantation

Dr. Perrone is the Medical Director, and all Division attending physicians also participate in the Tufts-NEMC Kidney Transplant Program. A relatively high proportion of kidney transplants derive from related or unrelated living donors. Tufts-NEMC is also an active participant in the New England Program for Kidney Exchange (NEPKE) that has centralized the coordination of sharing by mismatched donor-recipient pairs so as to allow regional paired-donor exchanges. Patients who have received transplants are seen weekly in the Kidney and Blood Pressure Center in the initial months following the transplant, thereafter at increasing intervals.

### Inpatient Dialysis

Inpatient hemodialysis is performed in the Floating 7 inpatient dialysis unit and in Tufts-NEMC intensive care units. Dr. Meyer is the Director of Dialysis Services and Dr. Weiner is the Associate Medical Director. Table 4 lists the numbers of treatments performed this year. Dialysis Clinic, Inc., the hospital's dialysis provider, assigns three nurses to perform these treatments on a routine basis, and additional staff as needed. Linda Courtemanche, RN manages the inpatient dialysis program, which she joined in 1986. The staff performs pediatric as well as adult hemodialysis. The program is organized with particular attention to patient flow; most of the patients receiving hemodialysis treatment are also undergoing many other tightly scheduled tests and procedures. Response time for emergency hemodialysis after hours is 45 minutes; during the day, treatments can be initiated even more quickly.

### Continuous Renal Replacement Therapy

Dr. Perrone is the Director of this program that provides continuous renal replacement therapies such as continuous venovenous hemofiltration (CVVH) and slow continuous ultra filtration (SCUF) are provided in all intensive care units. These therapies are utilized with increasing success to support critically ill patients from other services who have developed acute renal failure as a complication of their underlying illnesses, other treatments, or surgery. Introduction of citrate regional anticoagulation has markedly improved the efficiency and efficacy of CVVH, thereby allowing its utilization in all intensive care units at Tufts-NEMC. Intraoperative SCUF is provided for patients with kidney failure who undergo liver transplantation. With the growth of solid organ and bone marrow transplantation, cardiac surgery, and oncology programs, increased utilization of continuous renal replacement therapies will be required.

## Inpatient Volume

All volume numbers are Tufts-NEMC and DCI fiscal year, October 2004 - September 2005, unless otherwise indicated. As Table 6 demonstrates, inpatient volume at Tufts-NEMC increased 2.2% from fiscal year 2004. Days of inpatient service at affiliated hospitals by Tufts-NEMC physicians are listed in Table 7.

Table 6: Comparison of Inpatient Activity: Fiscal Year 2005 to 2004

Institution and Location	Fiscal Year		Percent Change
	2005	2004	
<b>Tufts-New England Medical Center</b>			
Patient-days of service-Nephrology Consult and Ward Services	10,259	10,034	+2.2
Patient-days of service-New England Sinai Satellite unit	452	349	+29.5
Kidney transplants	37	48	-23
Bone biopsy day surgery procedures	14	NA	
<b>Dialysis Clinic, Incorporated</b>			
Inpatient hemodialysis treatments: Tufts-NEMC	2,358	2,533	-7
Inpatient hemodialysis treatments: Emerson	140*	NA	
Days of CVVH treatments: Tufts-NEMC	626	444	+41

\*Treatments from March 1<sup>st</sup> – September 30<sup>th</sup> 2005 (7 months)

**CVVH treatments increased an amazing 41% in 2005.**

Table 7: Inpatient Physician Days of Service at Affiliated Hospitals 2005

Dialysis Unit	Days
Caritas St. Elizabeth's Medical Center	751
Emerson Hospital	437
Kindred Hospital	395
Lawrence Memorial Hospital	1,051
Melrose Wakefield Hospital	1,858
Mt. Auburn Hospital	18
Whidden Hospital	187

## Division Quality Improvement

The division remains committed to improving the quality of care both for our patients and patients throughout the institution.

## Tufts-NEMC GFR Reporting

Our most wide-ranging quality improvement initiative this year was the design and implementation of automatic glomerular filtration rate (GFR) reporting by the Tufts-NEMC clinical information system. On January 18, 2005, Patient Links began reporting estimated GFR each time a serum creatinine is measured. Reporting of the GFR estimates along with the serum creatinine is an important step in improving the quality of care for patients at Tufts-NEMC and will help to improve detection of kidney disease.

**GFR reporting, a major advance in detecting kidney disease, was implemented hospital-wide.**

Drs. Stevens, Meyer, Levey, Gilbert, Uhlig and Perrone and Alice Martin, RN served as the implementation team and created an educational campaign including: presenting at Medicine and Anesthesia Grand Rounds; teaching medicine, anesthesia and surgery residents; distributing an electronic letter from Dr. Levey and Arthur Rabson MD explaining the new initiative and resources available for questions; publishing information in Pathfinder and the Tufts-NEMC News; making available laminated pocket GFR cards on the wards (Figure 1); sending weekly emails of 'GFR frequently asked questions'; providing Intranet resources to aid in data interpretation [http://intra.nemc.org/Nephrology/gfr\\_interpretation.asp](http://intra.nemc.org/Nephrology/gfr_interpretation.asp); and establishing a dedicated email address for GFR questions ([NE\\_NEPH\\_GFR](mailto:NE_NEPH_GFR)).


GFR REPORTING and CHRONIC KIDNEY DISEASE (CKD)	NEPHROLOGY REFERRALS
<p>GFR is automatically reported with all serum creatinine measurements in the CHEM-LYTES section of Patient Links.</p> <ul style="list-style-type: none"> <li>• NAA = GFR estimate for Non African Americans</li> <li>• AA = GFR estimate for African Americans</li> </ul> <p><b>GFR Estimate Interpretation</b></p> <ol style="list-style-type: none"> <li>1. Estimated GFR &lt;60 ml/min/1.73 m<sup>2</sup> may indicate acute or chronic kidney disease and may require adjustment in dosage of medications that are excreted by the kidney.</li> <li>2. Accurate GFR estimation requires a stable level of kidney function. GFR estimates are not accurate if GFR is changing from day to day.</li> <li>3. GFR estimates may be unreliable in patients on vegetarian diets, taking creatine supplements, with muscle wasting or limb amputation.</li> <li>4. The MDRD Study equation has not been validated in children (age &lt; 18 yrs), racial or ethnic subgroups, other than Caucasians and African Americans, or in individuals without kidney disease.</li> </ol> <p><b>CKD Definition</b></p> <p>Chronic kidney disease is defined as either of the following for ≥ 3 months</p> <ul style="list-style-type: none"> <li>• Kidney damage: manifested by either kidney biopsy OR markers of kidney damage, such as proteinuria, urinary casts, or imaging abnormalities. Proteinuria includes microalbuminuria &gt; 17 mg/g Cr for men and 25 mg/g Cr for women</li> <li>• GFR &lt;60 ml/min/1.73 m<sup>2</sup></li> </ul> <p><b>Recommendations for Referral for CKD</b></p> <ol style="list-style-type: none"> <li>1. GFR &lt;30 ml/min/1.73 m<sup>2</sup> should be referred to a nephrologist for evaluation and co-management.</li> <li>2. GFR ≥30 with any of the following conditions:             <ol style="list-style-type: none"> <li>a. Kidney disease diagnosis unknown or possibility of treatable condition.</li> <li>b. Proteinuria (dipstick ≥1+ protein to creatinine ratio &gt;500 mg/g or 24 hour urine &gt; 500 mg/day).</li> <li>c. Active urine sediment (hematuria or pyuria) without evidence of acute bacterial infection.</li> <li>d. Resistant hypertension ≥130/80 mm Hg despite treatment with multiple medications.</li> <li>e. Untreated complications of CKD such as anemia, malnutrition or abnormal levels of calcium, phosphate or parathyroid hormone .</li> <li>f. Difficult to manage drug complications.</li> </ol> </li> </ol>	<p style="text-align: center;"><b>NEPHROLOGY REFERRALS</b></p> <p><b>INPATIENTS:</b> Contact Nephrology Consult Team</p> <p><b>OUTPATIENTS</b></p> <p><b>Routine:</b> Call the Kidney and Blood Pressure Center at 6-5866 for appt.  <b>Urgent:</b> Dr. Scott Gilbert (pager 3129) or Dr. Ron Perrone (pager 2730)</p> <p><b>Need for Urgent Referral if:</b></p> <ol style="list-style-type: none"> <li>1. GFR DECLINE &gt; 30% (increase in serum creatinine by &gt;30%) from baseline in 4 months or less</li> <li>2. HYPERKALEMIA &gt; 5.5 mEq despite treatment</li> <li>3. METABOLIC ACIDOSIS: serum CO<sub>2</sub> ≤ 18 mEq despite treatment</li> </ol> <p><b>NOT SURE IF REFERRAL IS INDICATED?</b></p> <p>Contact: Dr. Scott Gilbert-pager 3129, Dr. Ron Perrone-pager 2730, Dr. Katrin Uhlig-pager 3684 or Dr. Lesley Stevens-pager 0049.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;"><b>Workup Prior to Outpatient Routine Nephrology Consult</b></p> <p><b>Blood tests:</b> GFR estimate (from serum creatinine, with repeat if possible), electrolytes, calcium, phosphorus, glucose, albumin, lipids.  <b>Urine:</b> Urinalysis, spot urine protein/creatinine ratio OR spot urine albumin/creatinine ratio in patients with known proteinuria.  <b>If GFR &lt; 60 ml/1.73 m<sup>2</sup>:</b> Add iron, transferrin, % iron saturation, ferritin and parathyroid hormone (PTH) level.</p> </div> <p><b>RESOURCES AVAILABLE</b></p> <ol style="list-style-type: none"> <li>1. <b>Division of Nephrology Staff</b> Email: <a href="mailto:NE_NEPH_GFR@tufts-nemc.org">NE_NEPH_GFR@tufts-nemc.org</a></li> <li>2. <b>Websites</b> <ul style="list-style-type: none"> <li>• Nephrology Division CKD Information <a href="http://intra.nemc.org/Nephrology">http://intra.nemc.org/Nephrology</a></li> <li>• National Kidney Foundation Guidelines and Clinical Action Plans <a href="http://www.kidney.org/professionals/kdoqi/index/cfm">http://www.kidney.org/professionals/kdoqi/index/cfm</a></li> <li>• FAQ's about GFR Estimates <a href="http://intra.nemc.org/Nephrology/gfr_interpretation.asp">http://intra.nemc.org/Nephrology/gfr_interpretation.asp</a></li> </ul> </li> </ol> <div style="text-align: center; margin-top: 10px;">  <p><b>Tufts-New England Medical Center</b> Floating Hospital for Children</p> </div>

Figure 1: Pocket GFR Card

## Physician Staff Assessment Survey

For the 3<sup>rd</sup> year in a row, the Division has surveyed the non-physician staff's assessment of attending physician performance. Non-physician staff members and health professionals of the outpatient and inpatient dialysis units, North 7 and the KBPC anonymously evaluate each Division physician. Overall, the survey was well received; 58% of individuals surveyed responded. Thirty-six respondents rated 11 attending physicians on each of 10 items. Table 8 lists the questions and the sum of the positive responses. Our faculty performed very well, receiving more than 80% positive responses in each of 11 areas surveyed.

Table 8: 2005 Physician Staff Assessment Survey Results

Questions	Sum of %Strongly Agree and % Agree
• This physician routinely exhibits caring and respectful behavior to patients and their families.	92
• This physician adequately and appropriately provides explanations to patients and their families.	87
• This physician is sensitive to patients' culture, age, gender, and disabilities.	88
• This physician strongly advocates for patients within the health system.	91
• The physician is attentive to the details of patient care.	85
• This physician routinely exhibits caring and respectful behavior to staff.	86
• This physician respects multidisciplinary input and integrates it into patient care.	87
• This physician responds in a timely manner when paged or called.	80
• This physician is responsive to the administrative needs of the dialysis unit, clinic or nursing unit (includes scheduling, adherence to regulations, discharge planning, instructions to house staff, etc).	87
• I would trust this physician to take care of members of my family.	82
• Overall rating of this physician (Note: result of this item is sum of Very Good and Excellent responses).	85

The Division is committed to providing quality patient care and a supportive learning environment for health professionals. These data show that we are meeting that commitment. The Division annually uses this tool yearly during physician annual assessments and as a component of credentialing to continuously improve the care and learning environment we provide. We are fortunate to have resources within our Division that allow us to successfully undertake this annual initiative.

In addition to GFR reporting and the physician assessment survey, ongoing Division quality improvement activities are aimed at improving the quality and continuity of patient care. Division members actively employ a multidisciplinary approach in meetings and initiatives throughout Tufts-NEMC and DCI.

## Community Service/Patient Education

Division staff members actively participation in community projects, particularly in neighboring Chinatown. In addition to health screenings, the Division has focused on education for health care providers, patients and the general community. Please refer to Table 9 for a detailed listing of events.

**More than 1,200 people were present at community service events hosted by the Division.**

Table 9: 2005 Community Service Events

<b>Date</b>	<b>Type of Event</b>	<b>Community</b>	<b>Partner and Location</b>	<b>Attendees</b>
2/1	Educational Lecture High Blood Pressure and CKD	Chinese Elders	Greater Boston Chinese Golden Age Center, Brighton	50
3/19	NKF KEEP	Diverse	Seaport Convention Center South Boston	250
3/22	Educational Lecture High Blood Pressure and CKD	Chinese	Brockton Unity Towers, Brockton	50
3/23	BP Screening for National Kidney Month	Tufts-NEMC Visitors and Employees	Tufts-NEMC Atrium	60
4/28	NKF KEEP - Spring into Wellness Chinese Health Fair	Chinatown	Wang YMCA, Boston	75
4/28	BP Screening - Spring into Wellness Chinese Health Fair	Chinatown	Wang YMCA, Boston	125
7/31	NKF KEEP	Cape Verdean	Cape Verdean Festival, Brockton	91
8/2	Educational Lecture: Diabetes and High Blood Pressure	Chinese Elders	Greater Boston Chinese Golden Age Center, Brighton	50
8/16	BP Screening	Chinatown	South Cove Community Health Center, Boston	75
9/17	BP Screening	Chinatown	Oak Street Fair, Boston	125
10/14	BP Screening – 3 days	Dorchester	Greater Love Tabernacle: Healthy Family Network, Dorchester	48
10/19	BP Screening	Chinatown	Benjamin Franklin Institute and Castle Square Apartments Tenants Organization, Boston	125
11/05	NKF KEEP	Chinatown	Tzu Chi Health Fair, Boston	75
11/12	BP Screening	Chinatown	Frances Stern Nutrition Center, Asian Food Pantry Arlington St Church, Boston	45

Division members participated in 4 NKF-sponsored screening programs. The Kidney Early Evaluation Program (KEEP) is a comprehensive screening program that includes a health risk questionnaire, blood pressure measurement, blood and urine tests, and individual consultation with a physician to discuss the patient's risks for diabetes, hypertension and CKD.

Slides for presentations given to Chinese elders have been translated into Chinese and interpreters are available at lectures and to give participants results of blood pressure screenings. In June 2005, an article on "High Blood Pressure and Kidney Disease" was published in the Sampan Chinese-English newspaper.

In addition, Drs. Perrone and Miskulin lectured at local and national meetings to patients about polycystic kidney disease.

### ***Patient Care Awards and Honors***

- Dr. Meyer was selected by the NKF of Massachusetts, Rhode Island, New Hampshire and Vermont to receive the prestigious 2006 Boston Gift of Life Outstanding Physician - Nephrology Award. The Gift of Life Award recognizes outstanding service to the NKF and commitment to the kidney and transplantation community.
- In May, the Boston Herald Sunday Magazine recognized Dr. Perrone as one of Boston's Top Nephrologists.
- Dr. Sarnak was the recipient of two Oliver Smith Awards (January and December) from Tufts-NEMC. The Oliver Smith Award was established in 1999 as a way for patients to recognize Medical Center staff and employees for exceptional care and service.

## **Research**

Research conducted in the Division is focused on solving clinical problems. Each research project has a domain expert, in most cases a nephrologist, a methodologic expert, and other multidisciplinary input. The location of the Division offices, the Kidney and Blood Pressure Center, and the DCI Boston dialysis unit on 3 adjacent floors in the same building has been a major reason for the Division's success in clinical research.

The Division's primary focus is on clinical research in CKD. However, there are a growing number of projects in acute kidney failure. Areas of emphasis are listed in Table 10.

**In 2005, greater than \$3.2M was awarded in new research grants to Division members.**

Table 10: Areas of Research Emphasis in the Division

Area of Emphasis	Research Examples
Epidemiology of CKD	<ul style="list-style-type: none"> <li>• Definition and staging of CKD</li> <li>• Prevalence in US population and subgroups defined by demographic and clinical characteristics</li> </ul>
Assessment of kidney function	<ul style="list-style-type: none"> <li>• Development and validation of GFR prediction equations</li> <li>• Development of a national program for standardization of serum creatinine assay</li> </ul>
Interventions to slow progression of kidney disease	<ul style="list-style-type: none"> <li>• Secondary analysis of studies of dietary modification</li> <li>• Anti-hypertensive agents and blood pressure goals</li> <li>• HALT-PKD clinical trial</li> </ul>
Clinical and epidemiologic studies of nutrition in CKD	<ul style="list-style-type: none"> <li>• Secondary analysis of studies of dietary modification in CKD</li> <li>• Clinical trials of strength training in CKD</li> <li>• Secondary analysis of obesity in transplant recipients</li> </ul>
Implementation of clinical practice guidelines in CKD	<ul style="list-style-type: none"> <li>• Demonstration projects in managed care organizations</li> <li>• Clinical trials in CKD populations</li> </ul>
Epidemiology of CVD in CKD	<ul style="list-style-type: none"> <li>• Studies of the burden of CVD and CVD risk factors in CKD</li> <li>• CKD as a risk factor for CVD</li> </ul>
Clinical and epidemiologic studies on cerebrovascular disease in CKD	<ul style="list-style-type: none"> <li>• Micronutrients and cognitive impairment in dialysis</li> <li>• Anti-hypertensive therapy to prevent stroke recurrence</li> </ul>
Epidemiologic studies on optimal care for kidney failure	<ul style="list-style-type: none"> <li>• Timing of initiation of dialysis</li> <li>• Treatments for anemia, malnutrition, bone disease</li> <li>• Utilization of preventive services</li> </ul>
Clinical studies of effects of dialysis modality and dose	<ul style="list-style-type: none"> <li>• HEMO Study</li> <li>• CHOICE Study</li> <li>• Daily dialysis trials</li> </ul>
Clinical and translational studies on mediators of inflammation and oxidative stress in kidney disease	<ul style="list-style-type: none"> <li>• Leukocyte function and apoptosis</li> <li>• Iron therapy, infection, and oxidative stress</li> <li>• Genetic factors influencing outcomes in acute and CKD</li> </ul>

Quality management in dialysis networks

Clinical studies of immunosuppression and infection in dialysis and kidney transplantation

Epidemiologic studies of CKD after kidney transplantation

Polycystic kidney disease

- Development of information systems
- Methods for assessment of quality of life, patient satisfaction and comorbidity
- Relationship of HCV, CMV, bacteremia to immunosuppressive drug regimens, iron therapy
- Complications after kidney transplantation
- Barriers to care
- Epidemiologic studies of the morbidity and mortality of extrarenal and renal complications of ADPKD after ESRD
- Clinical trials to slow kidney disease progression in ADPKD
- Cardiovascular disease in ADPKD

## Total Amount and Type of Research Awards

Figure 2, Table 11, and Table 12 demonstrate the increasing numbers and dollars of research awards received by the Division.

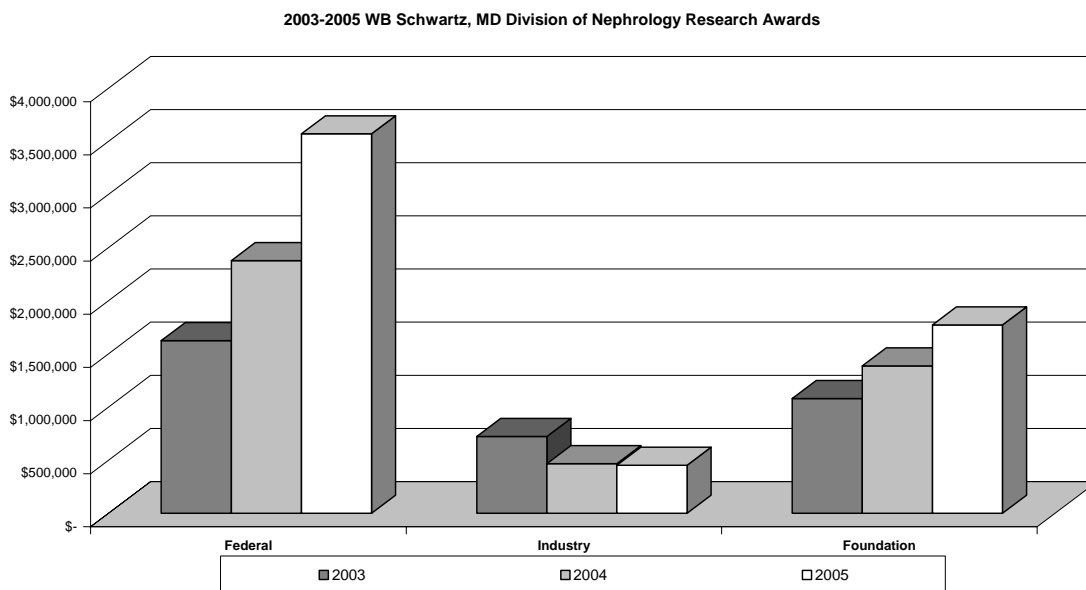


Figure 2: Division of Nephrology Research Awards 2003-2005, by Type

**In 2005, 6 Division Members held Career Development (K) Awards from NIDDK**

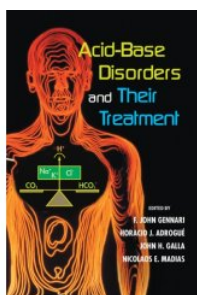
Table 11: New Research Awards Received In 2005

<b>Principal Investigator</b>	<b>Award Source</b>	<b>Type of Award</b>	<b>Title</b>	<b>Amount \$</b>	<b>Study Length</b>
Dr. Balakrishnan	National Kidney Foundation	Foundation	TGF-beta 1 and Interleukin-6 Gene Polymorphisms in CKD	\$150,000	3 Years
Dr. Menon	Polycystic Kidney Disease Foundation	Foundation	Endothelial Cell Dysfunction in Polycystic Kidney Disease	\$64,708	1 Year
	Satellite Healthcare	Foundation	Endothelial Function in Early Stage Polycystic Kidney Disease	\$50,000	3 Years
Dr. Liangos	American Heart Association	Foundation	Polymorphism of Neutrophil-Associated Genes: Pathogenesis of renal injury after cardiopulmonary bypass	\$260,000	4 years
Dr. Rao	DCI	Industrial	Somatic mitochondrial mutations as a genomic biomarker of hemodialysis clinical outcomes	\$50,000	1 year
Dr. Sarnak	NIH/NIDDK	Federal R01	Does Kidney Function Determine Aging Success?	\$1,262,024	4 years
	NIH/NIDDK	Federal R21	Cognition and Vascular Disease in Dialysis Patients	\$447,510	2 years
	NIH/NIDDK	Federal R21	Cardiac Risk Factors in Chronic Kidney Disease	\$448,250	2 years
Dr. Stevens	TUSM: Charlton Award	Foundation	Case Definitions for Chronic Kidney Disease in Administrative Data	\$7,500	1 Year
Dr. Weiner	NIH/NIDDK	Federal K23	Kidney Disease, Stroke and Cognitive Impairment	\$643,234	5 year

Table 12: Ongoing Awards Received Prior To 2005

Principal Investigator	Award Source	Type of Award	Title	Amount \$	Study Length
Dr. Balakrishnan	Satellite Healthcare	Foundation	Cytokines and Chronic inflammation in Hemodialysis	\$150,000	5 years
	NIH/NIDDK	Federal K08	Hemodialysis and Oxidative Stress	\$606,251	5 years
Dr. Kausz	American Society of Nephrology – American Society of Transplantation	Foundation	John Merrill Grant in Transplantation	\$200,000	2 years
Dr. Khan	Amgen	Industrial	Evaluation Of Resource Utilization Among Patients With Chronic Kidney Disease	\$68,000	1 year
Dr. Levey	NIH/NIDDK	Federal U01	Chronic Renal Disease-Individual Patient Meta Analysis	\$5,159,078	9 years
	NIH/NIDDK	Federal T32	Epidemiology, Clinical Trials and Outcomes Research	\$2,438,804	10 years
	NIH/Fogarty	Federal R03	Hypertension in the Pakistani Population	\$110,880	4 years
Dr. Menon	National Kidney Foundation	Foundation	Center for Clinical Practice Guidelines	\$2,912,293	3 years
	NIH/NIDDK	Federal K23	Novel Cardiac Risk Factors and Endothelial Function in Chronic Kidney Disease	\$779,700	5 years
Dr. Miskulin	Satellite Healthcare	Foundation	Risk-Adjusting Clinical Performance Measures for Quality Assessment Program in Dialysis Populations	\$150,000	4 years
	NIH/NIDDK	Federal K23	Case-Mix and its Effects on Quality Indicators in ESRD	\$628,880	5 years
Dr. Perrone	NIH/NIDDK	Federal U01	Polycystic Kidney Disease Clinical Trials Network	\$2,303,228	7 years
Dr. Rao	NIH/NIDDK	Federal K23	TGF-Beta 1 and PAI-1 Genotypes in CKD	\$649,350	5 years
Dr. Sarnak	NIH/NIDDK	Federal K23	Cardiovascular Risk Function-Chronic Renal Insufficiency	\$671,605	5 years
	Cleveland Clinic Foundation	Foundation	MDRD Follow-Up	\$89,669	2 years
Dr. Stevens	Kidney Foundation of Canada	Foundation	Biomedical Fellowship Award	\$48,298	5 years

## 2005 Division Publications



A total of 87 publications were authored and/or co-authored by Division members in 2005. The highlight of the year was Dr. Madias' new book, *Acid-Base Disorders and Their Treatment*, edited by FJ Gennari, HJ Adrogué, JH Galla and NE Madias. The book is published by Taylor & Francis of Boca Raton. The textbook in which Dr. Madias co-authored five chapters and was one of a team of prestigious editors, received very positive reviews. One review by Lee W. Henderson, MD was published in the *New England Journal of Medicine* (N Engl J Med 2005;353:23:2520-21). Another review by Stefan G. Kiessling, MD gave the book an 86 out of 100 points in a glowing review published in Doody's Review of Books.

The following is a listing of the Division's 2005 publications:

1. Alonso A, Lau J, **Jaber BL**. Biocompatible hemodialysis membranes for intermittent hemodialysis in acute renal failure. *Cochrane Library*, Issue 2:1-32, 2005.
2. Adrogué HJ, **Madias NE**. Renal Tubular Acidosis. In: Davison AM, Cameron JS, Grünfeld J-P, Ponticelli C, Ritz E, Winearls CG and van Ypersele C, editors. *Oxford textbook of clinical nephrology*. Third edition. Oxford: Oxford University Press; 2005. p. 975-94.
3. Adrogué HJ, **Madias NE**. Diabetic and other forms of ketoacidosis. In: Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-base disorders and their treatment*. Boca Raton: Taylor & Francis; 2005. p. 313-50.
4. Adrogué HJ, **Madias NE**. Measurement of acid-base status. In: Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-base disorders and their treatment*. Boca Raton: Taylor & Francis; 2005. p. 775-88.
5. Adrogué HJ, **Madias NE**. Normal acid-base values. In: Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-base disorders and their treatment*. Boca Raton: Taylor & Francis; 2005. p. 789-800.
6. Adrogué HJ, **Madias NE**. Tools for clinical assessment. In: Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-base disorders and their treatment*. Boca Raton: Taylor & Francis; 2005. p. 801-16.
7. Bailie GR, **Uhlig K, Levey AS**. Clinical Practice Guidelines in Nephrology: Evaluation, Classification and Stratification of Chronic Kidney Disease. *Pharmacotherapy* 2005;25:491-502.
8. Bailie GR, **Uhlig K, Levey AS**. Response to: Problems with the use of the Modified Diet in Renal Disease formula to estimate renal function. *Pharmacotherapy* 2005;25:1284-5.
9. Bailie GR, **Uhlig K, Levey AS**. Response to: Creatinine clearance versus glomerular filtration rate for the use of renal dosing in patients with kidney dysfunction. *Pharmacotherapy* 2005;25:1287.
10. **Balakrishnan VS, Rao M, Jaber BL**, for the DialGene Consortium. Genomic medicine, gene polymorphisms, and human biological diversity. *Semin Dial* 2005;18:37-40.

11. **Balakrishnan VS**, Guo D, **Rao M**, **Jaber BL**, Tighiouart H, Freeman RL, Huang C, King AJ, **Pereira BJG**, for the HEMO Study Group. Are inflammatory cytokines the “Evil Humours” that increase morbidity and cardiovascular mortality in chronic kidney disease? Cytokine gene polymorphisms in hemodialysis patients: association with comorbidity, functionality, and serum albumin. *Semin Dial* 2005;18:441-4.
12. **Castaneda C**, Janssen I. Ethnic comparisons of low skeletal muscle mass and obesity in diabetes. *Ethn Dis* 2005;15:664-70.
13. Cohen JJ, **Harrington JT**, Kassirer JP, **Madias NE**. Farewell from the editors. *Kidney Int* 2005;68:2917.
14. Fried LF, Katz R, **Sarnak MJ**, Shlipak MG, Chaves PHM, Jenny NS, Stehman-Breen C, Gillen D, Bleyer AJ, Hirsch C, Siscovick D, Newman AB. Kidney Function as a Predictor of Non-Cardiovascular Mortality. *J Am Soc Nephrol* 2005;16:3728-35.
15. Gelber RP, Kurth T, **Kausz AT**, Manson JE, Buring JE, **Levey AS**, Gaziano JM. Association between body mass index and CKD in apparently healthy men. *Am J Kidney Dis* 2005;46:871-80.
16. Gennari FJ, Hood VL, Greene T, Wang X, **Levey AS**. Effect of dietary protein intake on serum total CO<sub>2</sub> concentration in chronic kidney disease: Modification of Diet in Renal Disease (MDRD) Study Findings. *Clin J Am Soc Nephrol* 2005; ePress 1-6.
17. Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-Base Disorders and Their Treatment*. Boca Raton: Taylor & Francis; 2005.
18. **Gill JS**, Tonelli M, Johnson N, Kiberd B, Landsberg D, **Pereira BJG**. The impact of waiting time and comorbid conditions on the survival benefit of kidney transplantation. *Kidney Int* 2005;68:2345-51.
19. Hu SL, **Jaber BL**. Ribavirin monotherapy for hepatitis C virus-associated membranous nephropathy. *Clin Nephrol* 2005;63:41-5.
20. Jaar BG, Coresh J, Plantinga LC, Fink NE, Klag MJ, **Levey AS**, Levin NW, Kliger A, Sadler JH, Powe NR. Comparing the risk for death with peritoneal dialysis and hemodialysis in a national cohort of patients with chronic kidney disease. *Ann Intern Med* 2005;143:174-83.
21. **Jaber BL**, **Pereira BJ**, Bonventre JV, **Balakrishnan VS**. Polymorphism of host response genes: implications in the pathogenesis and treatment of acute renal failure. *Kidney Int* 2005;67:14-33.
22. **Jaber BL**, **Pereira BJ**, **Balakrishnan VS** and The HEMO Study Group. Plasma interleukin-6 predicts cardiovascular mortality in hemodialysis patient. *Am J Kidney Dis* 2005;45:324-33.
23. **Jaber BL**, **Madias NE**. Atorvastatin in patients with type 2 diabetes mellitus undergoing dialysis.[comment]. *N Engl J Med* 2005;353:1858-60.
24. **Jaber BL**. Bacterial infections in hemodialysis patients: pathogenesis and prevention. *Kidney Int* 2005;67:2508-19.
25. **Jaber BL**, **Madias NE**. C-reactive protein levels and outcomes after statin therapy.[comment]. *N Engl J Med* 2005;352:1603-5.
26. **Jaber BL**, **Balakrishnan VS**, Stenvinkel P, Pecoits-Filho R, Lindholm B. Genetic polymorphisms association studies in dialysis: the nutrition-inflammation axis. *Semin Dial* 2005;18:322-30.
27. **Jaber BL**. The cytokine network in acute renal failure. *Nephrology Rounds* 2005;3:1-6.

28. **Jaber BL, Madias NE.** Progression of chronic kidney disease: can it be prevented or arrested? *Am J Med* 2005;118:1323-30.
29. **Jaber BL, Balakrishnan VS.** Genetics in dialysis: a preface. *Semin Dial* 2005;18:36.
30. **Jaber BL, Pereira BJG.** Biocompatibility of hemodialysis membranes. In: **Pereira BJG, Sayegh M, Blake P,** editors. *Chronic kidney disease, dialysis and transplantation: a companion to Brenner and Rector's The Kidney.* 2<sup>nd</sup> Edition. Philadelphia: Elsevier Saunders; 2005. p. 363-87.
31. **Jafar T,** Jessani S, Jafary F, Ishaq M, Orkazai R, Orkazai S, **Levey AS,** Chaturvedi N. General practitioners' approach to hypertension in urban Pakistan - disturbing trends in practice. *Circulation* 2005;111:1278-83.
32. **Jafar TH,** Stark PC, Schmid CH, Strandgaard S, Kamper A, Maschio G, Becker G, **Perrone RD, Levey AS,** for the ACE Inhibition in Progressive Renal Disease (AIPRD) Study Group. The effect of angiotension-converting-enzyme inhibitors on progression of advanced polycystic kidney disease. *Kidney Int* 2005;67:265-71.
33. **Jafar TH,** Islam M, Poulter N, Hatcher J, Schmid CH, **Levey AS,** Chaturvedi N. Children in South Asia have higher body mass adjusted blood pressure levels than Caucasian children in the United States-a comparative study. *Circulation* 2005;111:1291-7.
34. Kalra PA, Guo H, **Kausz AT,** Gilbertson DT, Liu J, Chen SC, Ishani A, Collins AJ, Foley RN. Atherosclerotic renovascular disease in United States patients aged 67 years or older: risk factors, revascularization, and prognosis. *Kidney Int* 2005;68:293-301.
35. **Kausz AT,** Guo H, **Pereira BJ,** Collins AJ, Gilbertson DT. General medical care among patients with chronic kidney disease: opportunities for improving outcomes. *J Am Soc Nephrol* 2005;16:3092-101.
36. **Kausz AT,** Solid C, **Pereira BJ,** Collins AJ, St Peter W. Intractable anemia among hemodialysis patients: a sign of suboptimal management or a marker of disease? *Am J Kidney Dis* 2005;45:136-47.
37. Kazmi WH, Gilbertson DT, **Obrador GT,** Guo H, **Pereira BJ,** Collins AJ, **Kausz AT.** Effect of comorbidity on the increased mortality associated with early initiation of dialysis. *Am J Kidney Dis* 2005;46:887-96.
38. Kazmi WH, **Obrador GT,** Sternberg M, Lindberg J, Schreiber B, Lewis V, **Pereira BJ.** Carnitine therapy is associated with decreased hospital utilization among hemodialysis patients. *Am J Nephrol* 2005;25:106-15.
39. **Khan SS,** Xue JL, Kazmi WH, Gilbertson DT, **Obrador GT, Pereira BJ,** Collins AJ. Does predialysis nephrology care influence patient survival after initiation of dialysis? *Kidney Int* 2005;67:1038-46.
40. **Levey AS,** Edkardt K, Tsukamoto Y, Levin A, Coresh J, Rossert J, de Zeeuw D, Hostetter TH, Lameire N, Eknoyan G. Definition and classification of chronic kidney disease: a position statement from *Kidney Disease: Improving Global Outcomes (KDIGO).* *Kidney Int* 2005;67:2089-2100.
41. **Levey AS,** Mulrow CD. An editorial update: what level of blood pressure control in chronic kidney disease? [Editorial] *Ann Intern Med* 2005;143:79-81.
42. Levin A, **Stevens LA.** Executing change in the management of chronic kidney disease: perspectives on guidelines and practice. *Med Clin North Am* 2005;89(3):701-9.
43. Liangos O, Rao M, **Balakrishnan VS,** Pereira BJG, Jaber BL. Relationship of urine output to dialysis initiation and mortality in acute renal failure. *Nephron Clinical Pract* 2005;99:c56-c60.

44. **Liangos O, Balakrishnan VS, Jaber BL**, for the DialGene Consortium. Model for gene-environment interaction: The case for dialysis. *Semin Dial* 2005;18:41-6.
45. **Liangos O, Pereira BJG, Jaber BL**. Acute complications associated with hemodialysis. In: **Pereira BJG**, Sayegh M, Blake P, editors. *Chronic kidney disease, dialysis and transplantation: A companion to Brenner and Rector's The Kidney*. 2<sup>nd</sup> Edition. Philadelphia: Elsevier Saunders; 2005. p. 451-71.
46. **Madias NE**, Adrogué HJ. Hypo-hypernatraemia: disorders of water balance. In: *Oxford textbook of clinical nephrology*. Davison AM, Cameron JS, Grünfeld J-P, Ponticelli C, Ritz E, Winearls CG and van Ypersele C, editors. Third edition. Oxford: Oxford University Press; 2005. p. 213-39.
47. **Madias NE**. Respiratory acidosis and alkalosis. In: Greenberg A, et al editor. *Primer on kidney diseases*. Philadelphia: National Kidney Foundation Fourth Edition. Elsevier Saunders; 2005. p. 97-103.
48. **Madias NE**, Adrogué HJ. Respiratory Acidosis In: Gennari FJ, Adrogué HJ, Galla JH, **Madias NE**, editors. *Acid-base disorders and their treatment*. Boca Raton: Taylor & Francis; 2005. p. 597-640.
49. **Menon V**, Greene T, Pereira AA, Wang X, Beck GJ, Kusek JW, Collins AJ, **Levey AS, Sarnak MJ**. Relationship of phosphorus and calcium-phosphorus product with mortality in CKD. *Am J Kidney Dis* 2005;46:455-63.
50. **Menon V, Sarnak M**, Greene T, Wang X, Beck G, Selhub J, Kusek J, Levey AS. Homocysteine in patients with chronic kidney disease: effect of repletion with B vitamins and low protein diets. *Kidney Int* 2005; 67:1539-46.
51. **Menon V**, Greene T, Wang X, **Pereira AA**, Marcovina SM, Beck GJ, Kusek JW, Collins AJ, **Levey AS, Sarnak MJ**. C-reactive protein and albumin as predictors of all-cause and cardiovascular mortality in chronic kidney disease. *Kidney Int* 2005;68:766-72.
52. **Menon V**, Greene T, **Pereira AA**, Wang X, Beck GJ, Kusek JW, Collins AJ, **Levey AS, Sarnak MJ**. Hemoglobin A<sub>1c</sub> and mortality in patients with chronic kidney disease. *J Am Soc Nephrol* 2005;16:3411-7.
53. **Menon V, Gul A, Sarnak MJ**. Cardiovascular risk factors in chronic kidney disease. *Kidney Int* 2005;68:1413-8.
54. **Menon V, Sarnak MJ**. The epidemiology of chronic kidney disease stages 1-4 and cardiovascular disease: a high risk combination. *Am J Kidney Dis* 2005;45:223-32.
55. Mix TC, Brenner RM, Cooper ME, de Zeeuw D, Ivanovich P, **Levey AS**, McGill JB, McMurray JJV, Parfrey PS, Parving HH, **Pereira BJG**, Remuzzi G, Singh AK, Solomon SD, Stehman-Breen C, Toto RD, Pfeffer M. Rationale - Trial to Reduce Cardiovascular Events with Aranesp Therapy (TREAT): Evolving the management of cardiovascular risk in patients with chronic kidney diseases. *Am Heart J* 2005;149:408-13.
56. **Murthy K, Harrington JT**, Siegel RD. Profound hypokalemia in diabetic ketoacidosis: a therapeutic challenge. *Endocr Pract* 2005;11:331-4.
57. **Murthy K, Stevens LA**, Stark PC, **Levey AS**. Variation in the serum creatinine assay calibration: A practical application to glomerular filtration rate estimation. *Kidney Int* 2005;68:1884-7.
58. Natov SN, **Pereira BJG**. Hepatitis C virus in chronic dialysis patients. *Minerva Urol Nefrol* 2005; 57:175-97.

59. **Pereira AA**, Scott T, **Weiner DE**, **Sarnak MJ**. Cognitive function in dialysis patients. *Am J Kidney Dis* 2005;45:448-62.
60. Perianayagam MC, Morena M, **Jaber BL**, **Balakrishnan VS**. Antioxidants reverse uremia-induced down-regulation of mitochondrial membrane potential and interleukin-10 production. *Eur J Clin Invest* 2005;35:148-53.
61. Perianayagam MC, Oxenkrug GF, **Jaber BL**. Immune modulating effects of N-acetyl dopamine, N-acetyl serotonin and melatonin. *Ann NY Acad Sci* 2005;1053:386-93.
62. Raghavan SR, Ladik V, **Meyer KB**. Developing decision support for dialysis treatment of chronic kidney failure. *IEEE Trans Inf Technol Biomed* 2005;9:229-38.
63. **Rao M**, Guo D, Perianayagam MC, Tighiouart, MC, **Jaber BL**, **Pereira BJ**, **Balakrishnan VS**. Plasma interleukin-6 predicts cardiovascular mortality in hemodialysis patients. *Am J Kidney Dis* 2005;45(2):324-33.
64. **Rao M**, **Balakrishnan VS**. Inflammation in chronic kidney disease. In: **Pereira BJG**, Sayegh M, Blake P, editors. *Chronic kidney disease, dialysis and transplantation: a companion to Brenner and Rector's The Kidney*. 2<sup>nd</sup> Edition. Philadelphia: Elsevier Saunders; 2005. p. 232-46.
65. **Rao M**, **Jaber BL**, **Balakrishnan VS**, for the DialGene Consortium. Gene polymorphism association studies in dialysis: cardiovascular disease. *Semin Dial* 2005;18:217-25.
66. **Rao M**, **Pereira BJ**. Optimal anemia management reduces cardiovascular morbidity, mortality, and costs in chronic kidney disease. *Kidney Int* 2005;68:1432-8.
67. **Rao M**, **Pereira BJ**. Prevention of Chronic Kidney Disease. In: Ochsner Clinic Foundation Reports on Renal Disorders. Choen A, Pankey GA, editors. 2005, Vol 1, Number 1.
68. **Sarnak MJ**, Greene T, Wang X, Beck G, Kusek JW, Collins A, **Levey AS**. The effect of lower target blood pressure on the progression of kidney disease: Long-term follow-up of the Modification of Diet in Renal Disease Study. *Ann Intern Med* 2005;142:342-51.
69. **Sarnak MJ**, Katz R, Stehman-Breen CO, Fried LF, Jenny NS, Psaty BM, Newman AB, Siscovick D, Shlipak MG and the Cardiovascular Health Study. Cystatin-C as a risk factor for heart failure in older adults. *Ann Intern Med* 2005;142:497-505.
70. Seliger SL, Longstreth WT, Katz R, Manolio T, Fried LF, Shlipak MG, Stehman-Breen C, Newman AB, **Sarnak MJ**, Gillen D, Bleyer A, Siscovick D. Cystatin-C and subclinical brain infarction. *J Am Soc Nephrol* 2005;16:3721-7.
71. Shlipak MG, **Sarnak MJ**, Katz R, Fried LF, Seliger SL, Newman AB, Siscovick D, and Stehman-Breen C. Cystatin-C and risk of death and cardiovascular events among elderly persons. *N Engl J Med* 2005;352:2049-60.
72. Shlipak MG, Katz R, Fried LF, Jenny N, Newman AB, Siscovick D, Stehman-Breen C, Psaty B, **Sarnak MJ**. Cystatin-C and mortality in elderly persons with heart failure. *J Am Coll Cardiol* 2005;45:268-71.
73. Shlipak MG, Katz R, Cushman M, **Sarnak MJ**, Stehman-Breen C, Psaty B, Siscovick D, Tracy R, Newman AB, Fried L. Cystatin-C and inflammatory markers in the ambulatory elderly. *Am J Med* 2005;118(12):1416.
74. **Stevens LA**, **Levey AS**. Chronic disease in the elderly: how to assess risk. *N Engl J Med* 2005;352:2122-4.

75. **Stevens LA, Levey AS.** Chronic kidney disease: staging and principles of management. In: Greenberg A, editor. *Primer on Kidney Diseases 4<sup>th</sup> Edition*. Philadelphia: Elsevier Saunders; 2005. p. 455-63.
76. **Stevens LA, Fares G,** Fleming J, Martin D, Qiu J, Stark PC, **Uhlig K, Levey AS.** Low rates of testing and diagnostic codes usage in a national commercial clinical laboratory: evidence for lack of a physician awareness of chronic kidney disease. *J Am Soc Nephrol* 2005;16:2439-48.
77. **Stevens LA,** Cooper SEP, Singh RS, Levin A. Detection of chronic kidney disease in non-nephrology subspecialty practices: an important focus for intervention. *British Columbia Medical Journal* 2005;47:309-15.
78. **Stevens LA, Levey AS.** Measurement of kidney function. *Med Clin North Am* 2005;89(3):457-73.
79. Tatsioni A, Chung M, Sun Y, Kupelnick B, Lichtenstein AH, **Perrone R,** Chew P, Lau J, Bonis PA. Effects of fish oil supplementation on kidney transplantation: a systematic review and meta-analysis of randomized controlled trials. *J Am Soc Nephrol* 2005;16:2462-70.
80. **Uhlig K,** Wang SR, Beck GJ, Kusek JW, Marcovina SM, Greene T, **Levey AS, Sarnak MJ.** Factors associated with lipoprotein(a) in chronic kidney disease. *Am J Kidney Dis* 2005;45:28-38.
81. **Uhlig K.** Treatment goals for the management of hypertension and use of hypertensive agents in chronic kidney disease: recommendations from the K/DOQI guidelines. *Renin Angiotensin System in Cardiovascular Medicine*. Volume 1, Issue 3, 2005.
82. Unruh ML, Evans IV, Fink NE, Powe NR, **Meyer KB.** Skipped treatments, markers of nutritional nonadherence, and survival among incident hemodialysis patients. *Am J Kidney Dis* 2005;46(6):1107-16.
83. **Vlagopoulos P,** Tighiouart H, **Weiner DE,** Griffith J, Pettitt D, Salem DN, **Levey AS, Sarnak MJ.** Anemia as a risk factor for cardiovascular disease and all-cause mortality in diabetes: the impact of chronic kidney disease. *J Am Soc Nephrol* 2005;16:3403-10.
84. **Vlagopoulos P, Sarnak MJ.** Traditional and nontraditional cardiovascular risk factors in chronic kidney disease. *Med Clin North Am* 2005;89(3):587-611.
85. **Weiner DE,** Tighiouart H, Vlagopoulos PT, Griffith JL, Salem DN, **Levey AS, Sarnak MJ.** Effects of anemia and left ventricular hypertrophy on cardiovascular disease in patients with chronic kidney disease. *J Am Soc Nephrol* 2005;16:1803-10.
86. Woo YM, **Gill JS,** Johnson N, **Pereira BJ,** Hariharan S. The advanced age deceased kidney donor: current outcomes and future opportunities. *Kidney Int* 2005;67:2407-14.
87. The National Heart, Lung, and Blood Institute (NHLBI) Working Group on Future Directions in Hypertension Treatment Trials. Special Report: Major clinical trials of hypertension - what should be done next? *Hypertension* 2005;46:1-6. (Andrew S. Levey)

## ***Research Awards and Honors***

- Dr. Perrone continues to serve as the Vice-Chair of its Scientific Advisory Committee for the Polycystic Kidney Disease Foundation. Dr. Perrone has served as a member of the Scientific Advisory Committee since 1999.

## Education

The Division is committed to education. Local and national initiatives involve all members of the Division. National efforts stem largely from leadership and participation in basic and clinical research, service to national organizations and boards that establish standards in clinical practice and educational testing, and speaking engagements at local, national, and international conferences. Affiliations with TUSM, TUSDM and the Friedman School of Nutrition Science and Policy are the focus of most of our local education initiatives. Table 13 and Table 14 list ongoing teaching initiatives by Division members.

**Division members teach at 6 schools including:**

Tufts University School of Medicine  
Tufts University School of Dental Medicine  
Friedman School of Nutrition Science and Policy  
Sackler School of Graduate Biomedical Sciences at Tufts University  
The Francis Stern Nutrition Center at Tufts-NEMC  
Northeastern University School of Pharmacy

### ***New Teaching Initiatives in 2005***

#### Graduate-level Initiatives

- This year, Dr. Pereira participated in the “Tufts in India” initiative to develop collaborative relationship between the schools of Tufts University and Indian Institutions.
- In 2005, in collaboration with Drs. Kanchan Ganda and Cynthia Yared-McLaughlin of TUSDM and Kathy Murray, MSW of Dialysis Clinic, Inc., Drs. Weiner and Meyer initiated a program of weekly lectures on the management of kidney failure patients for 3<sup>rd</sup> year Tufts dental students in association with dental screening for hemodialysis patients.

#### Postgraduate-level Initiatives

- Beginning this year, a nephrology curriculum was developed for the housestaff Noon Conference schedule. On a twice-monthly schedule, Division staff present a series of lectures on core nephrology topics. These lectures provide the housestaff with a framework for evaluating and understanding these subjects.

Table 13: Longstanding Graduate-level Teaching Initiatives By Division Members

School	Students	Course	Personnel
TUSM	2 <sup>nd</sup> year	Renal Pathophysiology Course	Dr. Gilbert, Director Division Attendings and Fellows
	1 <sup>st</sup> & 2 <sup>nd</sup> year	Physical Diagnosis Course	Nephrology fellows and several members of the physician staff
	3 <sup>rd</sup> year 4 <sup>th</sup> year	Renal Ward Service Renal Ward Service as sub- interns	Division Attendings Division Attendings
	1 <sup>st</sup> & 2 <sup>nd</sup> year	Consultative Nephrology, an evidence-based medicine elective.	Dr. Gilbert
Tufts University School of Dental Medicine	—	Lectures on topics related to hypertension and nephrology	Drs. Balakrishnan and Meyer
Friedman School of Nutrition Science and Policy	—	Lectures on topics related to hypertension and nephrology	Drs. Balakrishnan and Meyer
Northeastern University School of Pharmacy	4 <sup>th</sup> year	Didactic lectures for the kidney disease sections of both the Pathophysiology course	Dr. Richardson
	5 <sup>th</sup> year	Didactic lectures for the kidney disease sections Therapeutics course	Dr. Richardson
	6 <sup>th</sup> year	6-week advanced pharmacy practice experience in DCI Boston dialysis unit	Dr. Richardson
The Francis Stern Nutrition Center at Tufts- NEMC		4-weeks experiential rotation in DCI Boston dialysis unit	Poon Harpoon, RD

Table 14: Long-term Postgraduate-level Teaching Initiatives By Division Members

Institution	Role	Personnel
• Sackler School of Graduate Biomedical Sciences at Tufts University	• Mentor fellows during their independent research in pursuit of a Masters of Science degree	Drs. Levey and Pereira
• TUSM Department of Pharmacology and Experimental Therapeutics	• Coordinate the Nephrology Section of the Advanced Molecular and Cellular Pharmacology Course	Dr. Gilbert
• Tufts-NEMC	• Renal Ward Service Nephrology Consultation Service Intern and Resident Teaching • Kidney and Blood Pressure Center at Tufts-NEMC senior medical residents • Tufts-NEMC Morning Report and Noon Conference	Division Attendings

## Fellowship Programs

### Clinical Fellowship Training

Dr. Levey is the Director and Dr. Gilbert is the Associate Director of the highly respected clinical fellowship training program. A well-organized curriculum emphasizing breadth and depth of clinical knowledge, rotations at Tufts-NEMC and Caritas St. Elizabeth's Medical Center and continuous evaluation all result in a highly successful program. Over the past 14 years, approximately 42% of the 33 graduates of the fellowship program have continued in full-time academic posts. Another 27% have become private practitioners with substantial teaching responsibilities, many in hospitals with university affiliations. The remainder of the graduates is largely engaged in private practice. During the past academic year, approximately 250 applications to the fellowship program were reviewed for only four positions available in 2006. Table 15 and Table 16 list graduating and current clinical fellows.

Table 15: Graduated Clinical Fellows

<b>Name</b>	<b>Period of Training</b>	<b>Current Position</b>
Daniel E. Weiner, MD, MS	2002 – 2005	Attending Physician William B. Schwartz Division of Nephrology Tufts-NEMC
Andrei Kouznetsov, MD	2003 – 2005	Nephrologist Emerson Hospital Concord, MA
		Attending Physician William B. Schwartz Division of Nephrology Tufts-NEMC

Table 16: Current Clinical Fellows

<b>Name</b>	<b>Period of Training</b>	<b>Previous Institution</b>
Emily Dulude, MD	2005-2006	Baystate Medical Center Springfield, MA
Magdalena Madero, MD	2005-2007	Caritas St. Elizabeth's Medical Center Brighton, MA
Yasser Nasser, MD	2004-2006	Emory University Affiliated Hospitals Atlanta, GA
Dena Rifkin, MD	2005-2006	Yale University Medical Center New Haven, CT
Jill Young, MD	2005-2006	University of Oregon Health Sciences Portland, OR

## Research Fellowship Training

### 2005 Research Fellowship Training Accomplishments

- The Division's NIDDK Institutional Research Training Award, in "Epidemiology, Clinical Trials and Outcomes Research in Nephrology" was renewed for another 5-year cycle.
- On May 24<sup>th</sup>, the Internal Advisory Committee reviewed the Research Training Program. Ten former and current Research Fellows gave presentations of their work in the morning and met with the Internal Advisory Committee in the afternoon. Patrick Parfrey, MD participated as a special invited guest and consultant to the Internal Advisory Committee.

### Continuing Research Fellowship Training Initiatives

The Division offers training in clinical research in three tracks as shown below.



Figure 3: Research Fellowship Training Tracks

#### Clinical Investigator Track: NIDDK Training Grant

The NIDDK Institutional Research Training Award, in "Epidemiology, Clinical Trials and Outcomes Research in Nephrology" funds four trainees per year in the Clinical Investigator Track. The specific aims of the Training Program are:

1. Didactic Training - course work in fulfillment of the MS degree in the Graduate Program in Clinical Research at the Sackler School of Graduate Biomedical Sciences at Tufts University;
2. Independent Study - a hypothesis-based research project supervised by a nephrologist mentor and a research team of faculty with expertise in other disciplines;

3. Training in Presentation - participation in conferences and seminars designed to improve trainees' oral and written presentations.

The nephrologist mentors ensure integration of all aspects of the curriculum with trainees' research projects.

### Clinical Educator Track

The NKF Center for Clinical Practice Guideline Development and Implementation at Tufts-NEMC offers two fellowship positions to nephrology trainees in the Clinical-Educator track. This program is designed for fellows interested in developing skills to remain at the forefront of medical knowledge, to apply methods from evidence-based medicine, and to enhance the delivery of high-quality healthcare. During the 2-year program, fellows are trained in systematic literature review, critical literature appraisal, and clinical practice guideline development and implementation. Fellows assume significant responsibility in the development of specific guidelines under the supervision and guidance of the Center staff. They collaborate closely with national and international work group experts. They also attend classes at the Sackler School of Graduate Biomedical Science at Tufts University and participate in mentored research to earn a masters degree in clinical care research. Fellows also participate in developing educational programs directed towards medical students, housestaff, and fellows. The Clinical-Educator Program may be combined with a year of clinical training for subspecialty board eligibility in nephrology.

During 2005, fellows in the Center have acted as assistant project directors for ongoing K/DOQI and KDIGO guideline development project. They have also conducted research towards theses in the Sackler School's Master of Science in Clinical Care Research program. Theses are on the following topics: "Critical review of meta-analyses of randomized controlled trials in nephrology," "Insight into current physician testing in the investigation of anemia" and "The burden of chronic kidney disease and cardiovascular disease in a large managed care organization".

### Translational Research Track

The Translational-Research Program is a partnership with our sister institution, Caritas St. Elizabeth's Medical Center, to study applications of genetic, biochemical, and physiologic variability to clinical care and clinical outcomes. Using a model of acute renal failure, fellows seek to identify and modify factors associated with increased morbidity and mortality. Fellows are trained in clinical investigation, use of the General Clinical Research Center, and applying basic science principles to patient care.

## Research Fellowship Program Statistics:

- We have eight (8) current research fellows in training. See Table 16 and Table 17 for listings of current and graduated research fellows.
- We received 58 applications for positions beginning in 2005 and 2006.

Table 17: Graduated Research Fellows

Name	Training Period	Nephrology Mentor	Current Position
George Fares, MD Orfeas Liangos, MD	2003-2005	Katrin Uhlig, MD, MS Bertrand Jaber, MD	Private Practice, CT Assistant Professor of Medicine Division of Nephrology Caritas St. Elizabeth's Medical Center
Panagiotis Vlagopoulos, MD	2003-2005	Mark Sarnak, MD	Private Practice, Southeastern MA

Table 18: Current Research Fellows

Name	Prior Institution	Nephrology Mentor	Funding Source
Joline Chen, MD	Clinical Fellow William B. Schwartz Division of Nephrology, Tufts-NEMC	Andrew Levey, MD	NIDDK Institutional Training Grant
Essam Elsayed, MD	Hospitalist University of Massachusetts Memorial Health System	Mark Sarnak, MD, MS	NIDDK Institutional Training Grant
Craig Gordon, MD	Hospitalist Beth Israel Deaconess Medical Center	Katrin Uhlig, MD, MS	NKF
Ambreen Gul, MD	Clinical Fellow William B. Schwartz Division of Nephrology, Tufts-NEMC	Bertrand Jaber, MD	Caritas St. Elizabeth's Medical Center
Christina Kwack, MD	Resident Department of Medicine, Tufts- NEMC	Lesley Stevens, MD	NKF
Ashish Mahajan, MD	Resident Internal Medicine, Caritas St. Elizabeth's Medical Center	Lesley Stevens, MD	NKF
Jonathan Sosnov, MD	Clinical Fellow William B. Schwartz Division of Nephrology, Tufts-NEMC	Klemens Meyer, MD	NIDDK Institutional Training Grant
Ron Wald, MD, CM	Resident Division of Nephrology/Department of Medicine, University of Toronto	V. Balakrishnan, MD	University of Toronto

## ***Continuing Medical Education***

**Division members provided 21 local, 37 national and 13 international presentations in 2005.**

- KDOQI work group members have repeatedly recognized the didactic instruction and supervision by the Evidence Review Team (ERT) and described it as a qualifying experience in evidence-based medicine. As a result, in 2005, Dr. Uhlig sought formal accreditation for the seminars and workshops conducted by the ERT as a CME activity on methods of evidence-based guideline development. After attending four workgroup meetings, physicians participating in the development of a full guideline are now eligible for up to 10 CME credits awarded by the Tufts University Office of Medical Education. The following CME accredited seminars were held in 2005:

Clinical Practice Guideline Development for Hepatitis C and Chronic Kidney Disease, KDIGO 1<sup>st</sup> Work Group Meeting  
Boston, MA  
July 14-15, 2005  
3.5 CME credits

Clinical Practice Guideline Development for Anemia and Chronic Kidney Disease: KDOQI 3<sup>rd</sup> Work Group Meeting  
San Francisco, CA  
August 4-5, 2005  
2 CME credits

- Dr. Khan is a faculty member in the Department of Continuing Medical Education and presents formal lectures to trainees from pharmaceutical companies.

The Division is actively involved in providing various forms of continuing medical education. Table 19 lists the continuing education presentations given by Division faculty in 2005. The table excludes presentations given within the Division, as all faculty are expected to present one Journal Club and one Research Conference annually.

Table 19: Local, National and International Presentations By Division Faculty In 2005

Presenter	Title	Location	Date
<b>LOCAL</b>			
Dr. Khan	Bone and Mineral Metabolism – a Complication of CKD.	Rheumatology Grand Rounds, Tufts-NEMC.	February 10
	Renal Osteodystrophy - a Complication of Chronic Kidney Disease.	Caritas Carney Hospital.	—
	Bone and Mineral Metabolism - Complications of Chronic Kidney Disease.	Caritas St. Elizabeth Medical Center and Lawrence Memorial and Melrose-Wakefield Hospitals.	—
	Secondary Hyperparathyroidism and Bone Disease.	Mount Auburn Hospital.	—
	Secondary Hyperparathyroidism and Transplant Bone Disease.	Newton Wellesley Hospital.	—
Dr. Levey	Journal Club.	Beth Israel Deaconess Medical Center.	March 21
	CKD and Proteinuria: a Potential New Marker.	Waltham, MA.	September 28
	CKD: a New Public Health Problem.	Boston Medical Center Grand Rounds.	September 30
Dr. Liangos	Nephrology Update.	Department of Medicine Grand Rounds, Caritas St. Elizabeth's Medical Center.	October
Dr. Madias	Invited Lecturer.	Newton Wellesley Hospital.	
	Invited Lecturer.	Tufts-NEMC	
Dr. Meyer	Patient-Provider Conflict in the Dialysis Unit.	Annual meeting of the ESRD Network of New England. Sturbridge, MA.	October 6
	The 1 <sup>st</sup> Revision to the Medicare Conditions of Participation for the ESRD Program in the Past 29 Years.		
Dr. Pereira	Guest Speaker, Management Seminar.	Sackler School, Tufts University.	—
Dr. Perrone	Update in Polycystic Kidney Disease and HALT PKD.	Renal Grand Rounds, Rhode Island Hospital. Providence, RI.	March 11
	ADPKD Research Update and the New NIH Trial.	NKF and Northeast Friends of the PKD Foundation. Wakefield, MA.	April 3
Dr. Richardson	Controversies in Preventing Contrast-Induced Nephropathy.	2 <sup>nd</sup> Annual New England Critical Care Pharmacy Symposium. Boston, MA.	April
	Chronic Kidney Disease (CKD) and Anemia Associated With CKD in Older Adults.	Nursing and Pharmacy CE Program. Cranston, RI.	December

Dr. Sarnak	The Effect of a Lower Blood Pressure Target on the Progression of Kidney Disease. Long-Term Follow Up of the MDRD Study.	Renal Grand Rounds, Mass General Hospital.	February 7
	The Epidemic of CVD in Chronic Kidney Disease: Manifestations, Causes, and Treatments.	Grand Rounds, Caritas St. Elizabeth's Medical Center.	May 5
	Cardiovascular Disease in Chronic Kidney Disease.	Renal Grand Rounds Brown Hospital. Providence, RI.	October 14
Dr. Stevens	Preoperative Kidney Disease.	Department of Anesthesia, Tufts-NEMC.	February 6
Dr. Uhlig	Evaluation and Management of the Patient With CKD.	Grand Rounds Lecture, Caritas Carney Hospital.	April 27
	Practice Guidelines for the Evaluation of Chronic Kidney Disease.	A Core Curriculum in Adult Primary Care Medicine CME conference. Boston University School of Medicine.	June 18
<hr/>			
<b>NATIONAL</b>			
Dr. Balakrishnan	Anemia Management and Hyporesponsiveness to Erythropoietin.	NKF Annual Spring Meeting. Washington, DC.	May
	Inflammation in CKD: Causes and Consequences.	Symposium on Inflammation and Oxidative Stress, NKF Annual Spring Meeting. Washington, DC.	May
	Cytokines, Inflammation, and Genetic Polymorphisms in Hemodialysis.	Satellite Research Foundation Symposium. Washington, DC.	May
Dr. Khan	Cost of Chronic Kidney Disease.	Economics of Chronic Kidney Disease: A conference of Managed Care Programs, NKF, and other health care providers. Chicago, IL.	—
Dr. Levey	Keeping CKD Away - "Creatinine and GFR: Measurement and Standardization.	NKF Annual Spring Clinical Meeting. Washington, DC.	May 6
Dr. Madias	CKD Symposium - MDRD and GFR. Hyponatremia 2005: New Understanding, New Therapy.	Buffalo, NY. International Symposium. Steamboat Springs, CO.	October 15
Dr. Menon	Kidney Disease as a Risk Factor for Cardiovascular Disease.	American College of Clinical Pharmacy 2005 Spring Forum. Myrtle Beach, SC.	April 13
Dr. Pereira	Guest Speaker.	ESRD for Congressional staff, sponsored by Davita. Coral Gables, FL.	—
	Guest Speaker.	State University of New York Health Sciences Center, Transplant Conference. New York, NY.	—

	Guest Speaker.	Princeton CME. San Francisco, CA.	—
	Guest Speaker.	American College of Clinical Endocrinologists. Washington, DC.	—
	Guest Speaker.	Symposium on CKD, Bone Care International. Coral Gables, FL.	—
	Guest Speaker.	Transplant Research Conference, Cedar Sinai Hospital. Los Angeles, CA.	—
	Guest Speaker.	Smith Barney Health Care Conference. Washington, DC.	—
	Guest Speaker.	American Nephrology Nurses Association. Wisconsin.	—
	Garabed Eknayan Lecture.	Baylor School of Medicine. Houston, TX.	—
	Keynote Address.	Kidney Disease Economics Conference. Phoenix, AZ.	—
Dr. Perrone	Cystic Diseases of the Kidney.	Nephrology Update, Harvard Medical School, Massachusetts General Hospital. Boston, MA.	June 12
	Research Update in PKD.	16 <sup>th</sup> Annual Conference on PKD, Polycystic Kidney Disease Foundation. Anaheim, CA.	June 25
	The Ins & Outs of Transplantation.	16 <sup>th</sup> Annual Conference on PKD, Polycystic Kidney Disease Foundation. Anaheim, CA.	June 26
	Autosomal Dominant Polycystic Kidney Disease.	Intensive Board Review and Contemporary Issues in Nephrology, Harvard Medical School, Brigham and Women's Hospital. Boston, MA	September 14
	Research Updates.	Polycystic Kidney Disease Foundation, American Society of Nephrology Meeting. Philadelphia, PA	November 8
Dr. Sarnak	Is Anemia a Cardiovascular Risk Factor?	Geisinger Health System. Danville, PA	April 15
	Cardiovascular Disease and Chronic Kidney Disease.	Geisinger Health System. Danville, PA	April 15
	The Epidemiology of Inflammation and Oxidative Stress in Chronic Kidney Disease.	NKF Annual Spring Clinical Meeting. Washington, DC.	May 7
	Cardiovascular Disease and Chronic Kidney Disease: An Update.	Harvard Medical School. Intensive Board Review and Contemporary Issues in Nephrology. Boston, MA.	September 14

	Cardiovascular Disease in Chronic Kidney Disease.	Harbor UCLA, Renal Rounds.	October 31
	Cardiovascular Disease in Chronic Kidney Disease.	Cedars Sinai, Renal Rounds.	November 1
	What Is Different About CVD in CKD?	American Society of Nephrology. Philadelphia, PA.	November 8
	Case Studies. Management of CVD in CKD.	American Society of Nephrology. Philadelphia PA.	November 8
	Non-Traditional Risk Factors in CKD.	American Society of Nephrology. Philadelphia, PA.	November 10
Dr. Stevens	MDRD GFR: How to Interpret the Estimates.	Chronic Kidney Disease Symposium. Buffalo, NY.	October
	GFR Estimating Equations.	NKF Annual Spring Clinical Meeting. Washington, DC.	May
	How to Use Antihypertensive Agents in Chronic Kidney Disease: a Primary Care Approach. Web-cast available through July 2007 at <a href="http://www.kidney.org/professionals/KLS/cmeprograms.cfm">http://www.kidney.org/professionals/KLS/cmeprograms.cfm</a> .	Continuing Medical Education. Anaheim, CA and Boston, MA.	April & November
Dr. Uhlig	K/DOQI Clinical Practice Guidelines on Hypertension and Anti-hypertensive Agents in CKD.	Renal Round Table CME conference for Nephrologists. Kansas City, MO.	March 3
	Helping You Help Your Patients With Chronic Kidney Disease.	Helping You Help Your Patient: Chronic Kidney Disease for the Primary Care Provider CME conference for primary care physicians and nurse practitioners by the NKF of Kansas and Western Missouri. Kansas City, MO.	March 3
<b>INTERNATIONAL</b>			
Dr. Balakrishnan	A Genomic Approach to Dialysis.	23 <sup>rd</sup> Annual Meeting, International Society of Blood Purification Rotterdam, Netherlands.	September
	Nature vs. Nurture: How Might Genetic and Environmental Risk Factors Influence Dialysis Outcome.	St. Anne's College, Oxford University. Oxford, England.	September 9
	Cytokine Gene Polymorphisms in Hemodialysis and Human Biological Diversity.	Advances in ESRD, 7 <sup>th</sup> International Conference on Hemodialysis. New Orleans, LA.	January
Dr. Pereira	Guest Speaker.	International Society of Peritoneal Dialysis. Hyderabad, India.	—

	Guest Speaker.	Fr. Muller's Medical College.	—
	Guest Speaker.	Mangalore, India.	
	Guest Speaker.	15 <sup>th</sup> Anniversary of Erythropoietin.	—
	Guest Speaker.	Osaka and Tokyo, Japan.	
	Guest Speaker.	Dirks Colloquium, International Society of Nephrology.	—
	Guest Speaker.	Singapore.	
	Guest Speaker.	Mexican Society of Nephrology.	—
	Guest Speaker.	Mexico City, Mexico.	
	Keynote Speaker.	Symposium on Anemia, Portuguese Society of Nephrology.	—
	Guest Speaker.	Cascias, Portugal.	
	Guest Speaker.	Italian Society of Nephrology.	—
	Guest Speaker.	Montesilvano, Italy	
	Guest Speaker.	Symposium on CKD.	—
Dr. Sarnak	Cardiovascular Risk Factors in Chronic Kidney Disease.	Melbourne, Australia	June 26
	Uremia and the Cardiovascular System and Hematocrit as a Cardiovascular Risk Factor.	International Congress of Nephrology. Singapore	
		Oxford, United Kingdom.	September 11

## **Editorial Appointments**

- Drs. Balakrishnan and Jaber were section editors for the 2<sup>nd</sup> edition of a major textbook in nephrology, Pereira BJG, Sayegh M, Blake P, editors. Chronic kidney disease, dialysis and transplantation: a companion to Brenner and Rector's The Kidney. Philadelphia: Elsevier Saunders; 2005.
- Drs. Balakrishnan and Jaber were also co-editors of a series, "Genetics in Dialysis", published in *Seminars in Dialysis*.
- Dr. Levey assumed position of Associate Editor for the Kidney Disease and Hypertension section of *Annals of Internal Medicine* in February 2005.
- Dr. Madias is a member of the editorial boards of *Hippokratia* and *Hellenic Medicine*.
- Dr. Pereira is a member of several editorial boards including: *Hypertension Dialysis*, *Clinical Nephrology*; *Kidney International*; *Indian Journal of Nephrology*; *Nephron*; *CKD—The Journal of Chronic Kidney Disease*; *Nephrology Resource Directory*, and the *Indian Journal of Peritoneal Dialysis*.

- Dr. Perrone is a member of the editorial board of the *Clinical Journal of the American Society of Nephrology*.
- Dr. Richardson is a member of the Editorial Board for the 5<sup>th</sup> edition of the *Pharmacotherapy Self-Assessment Program (PSAP)* and this year was appointed as vice-chairperson for the 6<sup>th</sup> edition. The PSAP series is a premier publication of the American College of Clinical Pharmacy and is modeled after the Medical Knowledge Self-Assessment Program. The program is designed as a self-assessment tool to assist pharmacists in sharpening their clinical skills and keeping abreast in therapeutic areas with updated standards of practice.
- Dr. Sarnak is a member of the Editorial Board for the *Clinical Journal of the American Society of Nephrology*.

### **Education Awards and Honors**

- Dr. Gilbert received the 2004-2005 Medicine Residents Teaching Award from the Tufts-NEMC housestaff.
- Dr. Gilbert received an Award for Excellence in Teaching from the TUSM Class of 2004.
- In March, Dr. Levey was a visiting professor at the University of Utah in Salt Lake City.
- Dr. Pereira was a visiting professor at Harbor UCLA in Los Angeles, CA.
- Drs. Sarnak, Stevens, and Uhlig received their Masters of Science degrees in Clinical Care Research from the Sackler School of Graduate Biomedical Sciences at Tufts University.

## **Public Policy**

### **2005 Policy Initiatives**

- Dr. Stevens developed and presented an alternative ICD-9-CM classification for CKD. As of October 2005, the standard code 585 for chronic renal failure has been retitled and expanded to reflect the new clinical practice standard for treating what is now defined as CKD. The nonspecific term chronic renal failure has been used to mean any degree of kidney failure including end stage renal disease. It has also been used interchangeably with the nonspecific term chronic renal insufficiency. Based on the clinical practice guidelines developed by the

NKF and supported by the Renal Physician Association, new codes as listed in Table 20 have been created under a new category 585, chronic kidney disease, to classify the different stages of CKD.

Table 20: Stages of CKD and Their Respective New ICD-9 Codes

CKD	ICD-9 Code
CKD	585.x
Stage 1	585.1 (kidney damage with normal or increased GFR)
Stage 2	585.2 (kidney damage with mild reduction in GFR)
Stage 3	585.3 (moderate reduction in GFR)
Stage 4	585.4 (severe reduction in GFR)
Stage 5 CKD without dialysis status	585.5 (kidney failure)
Stage 5 CKD with dialysis status	585.6 (kidney failure, ESRD)
Other non-specific terms: chronic renal failure, chronic uremia, and chronic renal insufficiency	585.9, chronic kidney disease, unspecified

- During 2005, the NKF Center for Guideline Development and Implementation served as the Evidence Review Team to K/DOQI guideline work groups on Diabetic Kidney Disease, Anemia and CKD as well as the Guideline Updates for Hemodialysis, Peritoneal Dialysis and Vascular Access. Work on the first KDIGO guideline on Hepatitis C and Chronic Kidney Disease began in the spring of 2005.
- To advance the methods of guideline development, Dr. Uhlig chaired an international group of methods experts that examined the issues related to grading evidence and recommendations. This group submitted a report to the KDIGO Board of Directors outlining an approach that has been adopted for the grading of KDIGO guidelines going forward.
- Dr. Levey was co-chair of the first Kidney Disease Improving Global Outcomes Controversies Conference in Amsterdam. This conference, attended by an international group of experts in nephrology, cardiology, epidemiology, and laboratory medicine endorsed the expanded upon the NKF-K/DOQI Guidelines for the Definition and Classification of Chronic Kidney Disease.

## ***Continuing Policy Initiatives***

### DCI Information Systems

Dr. Meyer serves as Medical Director for Information Systems for Dialysis Clinic, Inc., chairs its Medical Director Computer Steering Committee, and serves on its Quality Management Committee. Dr. Meyer is one of the principal architects of DCI's information system, which he continues to develop, and which sets an industry standard for quality of care and of information. The team's current projects include continued

development of decision support tools for treatment of dialysis patients' anemia and the implementation of an interface between hemodialysis machines and the information system.

### DCI Outcomes Monitoring Program

Dr. Richardson directs the corporate-wide DCI Outcomes Monitoring Program. The program has two facets, one is the use of patient experience data to improve care, and the other is the collection of high-quality comorbidity data. Patient experience is assessed using the SF-36 and patient satisfaction data from all DCI dialysis patients. The current database contains more than 115,000 observations from more than 35,000 dialysis patients.

The Comorbidity Assessment Program trains DCI staff to collect comorbidity data, monitors data quality and develops methods for case-mix adjustments. Where inherent differences in patient populations (i.e., case-mix) can be accounted for, we are developing methods to standardize quality comparisons across facilities. These methods may also be applied in clinical research studies where non-randomized groups are being compared to enable an unbiased effect of the treatment (or facility in the case of quality monitoring analyses) to be determined.

### National and International Guideline Development and Implementation

The mission of the NKF Center for Clinical Practice Guideline Development and Implementation at Tufts-NEMC is to improve the quality of care of individuals with kidney disease through service to the NKF and research and training in the developing and implementing evidence-based clinical practice guidelines. The Center provides methods support and guidance in developing guidelines commissioned by the NKF in the Kidney Disease Outcomes Initiative (K/DOQI) and the Kidney Disease: Improving Global Outcomes (KDIGO) initiative.

The Center has also developed strategies and tools for implementing K/DOQI clinical practice guidelines through academic detailing, consultation and collaboration with organizations, including the NKF; Coventry Health Care, a national health maintenance organization; Laboratory Corporation of America (LabCorp) and Quest Laboratories, the largest US commercial national laboratories; NIDDK National Kidney Disease Education Program (NKDEP); Centers for Disease Control and Prevention; National Committee for Quality Assurance; Federal Drug Administration; Kaiser Permanente Northwest, as well as Tufts-NEMC and their partners. Guideline implementation research projects study the effectiveness of strategies and tools for guideline implementation in order to expedite the translation of the guidelines into practice. An interdisciplinary research group has been constituted at the Center to lead the implementation efforts. This group also provides advisors for independent research projects undertaken by fellows.

## National Kidney Disease Education Program

Dr. Levey is a member of the National Kidney Disease Education Program (NKDEP) of the NIDDK. He has participated in the efforts of the NKDEP to recommend reporting GFR estimates by clinical laboratories and to standardize serum creatinine assays for more accurate GFR estimation.