William B. Schwartz
Division of Nephrology

A History of Excellence in Kidney Disease Clinical Care, Research and Teaching
1950

Founding of the Division of Nephrology

One of the most brilliant and creative minds in academic medicine. Bill Schwartz founded the Division of Nephrology at Tufts University School of Medicine and New England Medical Center in 1950. He served as its Chief until 1971 and Chairman of the Department of Medicine until 1976. Over this span of time, he influenced world nephrology as only a few have. He developed the Division into a preeminent referral center for patients with kidney disease, created a world-class research enterprise, and trained a long list of clinicians, teachers and researchers.
1950-1970

Clinician Educators

TUSM Graduating Class Teaching Awards
Jerome P. Kassirer, MD 1971-1984
1956-1958
Hypokalemic Nephropathy

The Kidney in Potassium Depletion
Arnold S. Relman, m.d. and William B. Schwartz, † m.d.
Boston, Massachusetts

The Nephropathy of Potassium Depletion
A Clinical and Pathological Entity
Arnold S. Relman, M.D., † and William B. Schwartz, M.D. ‡
Boston

A Syndrome of Renal Sodium Loss and Hyponatremia Probably Resulting from Inappropriate Secretion of Antidiuretic Hormone*

WILLIAM B. SCHWARTZ, M.D., †WARREN BENNETT, M.D., ‡SIDNEY CURELOP, M.D. §

Boston, Massachusetts

and FRANCIS C. BARTTER, M.D.
Bethesda, Maryland

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Fig. 1. Urine sodium, urine and serum osmolality, serum sodium concentration, body weight and steroid therapy during a thirty-five-day balance study of W. A. Dietary sodium intake was as follows: Days 1 to 9, 62 mEq; Days 10 to 35, 42 mEq. Supplemental sodium intake is indicated by arrows. For net intake (corrected for refusals) see Table I.

Role of Chloride in Metabolic Alkalosis

The Critical Role of Chloride in the Correction of Hypokalemic Alkalosis in Man

JEROME P. KASSIRER, M.D., PETER M. BERKMAN, M.D., DAVID R. LAWRENZ, M.D.
and WILLIAM B. SCHWARTZ, M.D.

Boston, Massachusetts

Fig. 5. The influence of chloride availability on acid-base equilibrium in chronic hypercapnia complicated by diuretic induced metabolic alkalosis (patient P. W.). Note that administration of potassium bicarbonate had no effect on plasma bicarbonate concentration and induced only a modest retention of potassium. By contrast, daily administration of an equivalent quantity of potassium chloride induced a 21 mEq. fall in plasma bicarbonate concentration and a markedly positive potassium balance. For discussion of changes in pCO₂ and pH, see text.

1970-1990

Clinical Acid-Base Pathophysiology

1970-1990
Clinician Educators

Tufts University School of Medicine
Excellence in Teaching Citations

Robert J. Hamburger, MD 1980-1991
Andrew S. Levey, MD 1980, 1984-1988
Nicolaos E. Madias, MD 1979, 1981, 1983
James A. Strom, MD 1981-1990
1971

Beginning of the Kidney Transplantation Program
1972

Beginning of Hemodialysis Program
1978-2005

Nephrology Forum

For 27 years, published in the journal *Kidney International*, Nephrology Forum was the most widely-recognized global nephrology update. The monthly Forum was a scientific understanding of contemporary issues in clinical nephrology. In this time, 326 forums were held.
A redefinition of normal acid-base equilibrium in man: Carbon dioxide tension as a key determinant of normal plasma bicarbonate concentration

Nicolaos E. Madias, Horacio J. Adrogué, Gary L. Horowitz, Jordan J. Cohen, and William B. Schwartz

Department of Medicine, Tufts University School of Medicine, and the Renal Service, New England Medical Center Hospital, Boston Massachusetts

**Fig. 4.** Traditional definition of normal acid-base equilibrium. The broken lines emanating from the plasma bicarbonate concentration and PAVCO₂ axes encompass the normal steady-state ranges (that is, ± 2 sd from the mean) observed in the present study. The diagonal lines encompass the observed steady-state range for plasma hydrogen ion concentration. The area of overlap defines the solid hexagonal zone in the center and corresponds to the traditional definition of the normal domain. The closed circles represent the steady-state data from the present study. Points A and B are hypothetical points discussed in the text.

1979
Beginning of Affiliation with Division of Nephrology at St. Elizabeth’s Hospital
1981
Beginning of Peritoneal Dialysis Program

Chronic Ambulatory Peritoneal Dialysis
John T. Harrington, M.D.
1982

Acid-Base, the Classic Analytic Synthesis of Complex Acid-Base Pathophysiology

THE EFFECTS OF DIETARY PROTEIN RESTRICTION AND BLOOD-PRESSURE CONTROL ON THE PROGRESSION OF CHRONIC RENAL DISEASE

Saulo Klahr, M.D., Andrew S. Levey, M.D., Gerald J. Beck, Ph.D., Arlene W. Cacchiola, Ph.D., Lawrence Hunsicker, M.D., John W. Kusek, Ph.D., and Gary Striker, M.D., for the Modification of Diet in Renal Disease Study Group*

Active Epithelial Transport in PKD

In Vitro Function of Cyst Epithelium from Human Polycystic Kidney

Ronald D. Perrone
Renal Division, Department of Medicine, Tufts-New England Medical Center, Boston, Massachusetts 02111

Figure 1. Response of gradient cysts to amiloride. PD and $I_p$ of gradient cysts (4 and 5) are indicated in the top and bottom panels, respectively. Addition of amiloride to the normal bath (cyst 5) had no effect. Amiloride (10 μM) was then added to the mucosal bath and PD and $I_p$ rapidly decreased. After amiloride was washed out, both parameters partially recovered. These remained stable or increased for several hours, at which point repeat application of 10 μM amiloride to the mucosal bath caused a similar rapid reduction of PD and $I_p$. These findings document the presence of conductive Na⁺ transport in gradient cysts, confirming the distal origin.

1986
Beginning of Relationship with DCI, a Not-for-Profit Dialysis Provider

Dialysis Clinic, Inc.
A Non-Profit Corporation

Tufts Medical Center
1990-2000

Clinician Educators

Tufts University School of Medicine Excellence in Teaching Citations

Andrew J. King, MD 1998, 1999, 2000
Nicoiloas E. Madias, MD 1998, 2000
Geetha Narayan, MD 1999, 2000
Andrew S. Levey, MD 2000
TRANSMISSION OF HEPATITIS C VIRUS BY ORGAN TRANSPLANTATION

Brian J.G. Pereira, M.D., Edgar L. Milford, M.D., Robert L. Kirkman, M.D., and Andrew S. Levey, M.D.

1992-2003
HEMO Study

The New England Journal of Medicine

EFFECT OF DIALYSIS DOSE AND MEMBRANE FLUX IN MAINTENANCE HEMODIALYSIS

GARABED EKNOYAN, M.D., GERALD J. BECK, PH.D., ALFRED K. CHEUNG, M.D., JOHN T. DAUGIRDAS, M.D.,
TOM GREENE, PH.D., JOHN W. KLUSEK, PH.D., MICHAEL ALLON, M.D., JAMES BAILEY, M.D., JAMES A. DELMEZ, M.D.,
THOMAS A. DEPNER, M.D., JOHANNA T. Dwyer, D.Sc., R.D., ANDREW S. LEVEY, M.D., NATHAN W. LEVIN, M.D.,
EDGAR MILFORD, M.D., DANIEL B. ORNT, M.D., MICHAEL V. ROCCO, M.D., GERALD SCHULMAN, M.D.,
STEVE J. SCHWAB, M.D., BRENDAN P. TEEHAN, M.D., AND ROBERT TOTO, M.D.,
FOR THE HEMODIALYSIS (HEMO) STUDY GROUP

Dialyzer Biocompatibility, Cytokine Biology, Oxidative Stress

Novel Extracorporeal Therapies

Neutrophil Biology in Uremia

Genetic Polymorphisms in Kidney Disease
1992-2012

Leadership in ESRD Networks

Klemens B. Meyer, MD

End Stage Renal Disease Network of New England, Inc.
Chairman, Vice-Chairman and Member - Medical Review Board
Chairman, Vice-Chairman and Member - Board of Directors

Forum of End Stage Renal Disease Networks
President and Member - Board of Directors
Representative, US Renal Data System Expert Advisory Committee
Representative, Fistula First Breakthrough Initiative
Patient-Based Outcomes Assessment Began at DCI

Monitoring Dialysis Patients’ Health Status

Klemens B. Meyer, MD, Derek M. Espindle, BA, Joanne M. DeGiacomo, BS, Constance S. Jenulis, RN, MS, Paul S. Kurtin, MD, and Allyson Ross Davies, PhD, MPH

Satisfaction with Care of Patients on Hemodialysis

Michelle M. Richardson1;2, Susan S. Paine3, Megan E. Grobert3, Christine A. Stidley3, Ezra Gabbay3, Antonia M. Harford1;4, Philip G. Zager1;5, Dana C. Miskulin3;4, Klemens B. Meyer1;2

Fig 2. Patient no. 2. The eight SF-36 scales over time. Confidence intervals around individual scores are 95% and are based on the dialysis patient sample reported here (see Table 3). The horizontal line on each graph represents the norm for an individual from the general US population of the same age and sex as patient no. 2.

1994

Transcriptional Regulation of the Na\(^+\)/H\(^+\) Exchanger

Proximal regulatory elements and nuclear activities required for transcription of the human Na\(^+\)/H\(^+\) exchanger (NHE-1) gene

Alexey Y. Kolyada, Tatiana V. Lebedeva, Conrado A. Johns and Nicolaos E. Madias *

Department of Medicine, Tufts University School of Medicine, and Division of Nephrology, New England Medical Center, Box 172, 750 Washington Street, Boston, MA 02111 (USA)

Biochim Biophys Acta 1994;1217:54-64.
1994
Beginning of Offsite Practice
1994-2001

CHOICE Study

Choices for Healthy Outcomes In Caring for End Stage Renal Disease


Johns Hopkins University School of Medicine, Baltimore, Maryland (NRP, MJK, EBB, WSA, HSR, AWW); Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland (NRP, MJK, GFA, EBB, NSF, HSR, AWW); Independent Dialysis Foundation, Baltimore, Maryland (JHS); New England Medical Center and Tufts University School of Medicine, Boston, Massachusetts (ASL, KBM); and Beth Israel Dialysis Services and Albert Einstein College of Medicine, New York, New York (NMJ)

Tufts Medical Center
1995

Beginning of Comprehensive Electronic Medical Record for National Dialysis Provider, DCI
CKD as a Risk Factor for Cardiovascular Disease

1998

Am J Kidney Dis 1998;32(Suppl 3);S1-S199.
1999-2012

GFR Estimating Equations

Assessing Kidney Function — Measured and Estimated Glomerular Filtration Rate

Lesley A. Stevens, M.D., Josef Coresh, M.D., Ph.D., Tom Greene, Ph.D., and Andrew S. Levey, M.D.
1999
First Award for Nephrology Clinical Research Training Program

Recent reports from the National Institute of Health and the Institute of Medicine recommend strengthening training programs for physicians in the methods of clinical research to translate advances in basic science to improvements in health. This application is to establish a new training program within the Division of Nephrology of New England Medical Center (NEMC) and Tufts University School of Medicine (TUSM) in "Epidemiology Clinical Trials and Outcomes Research". Andrew S. Levey, MD and Brain J.G. Pereira, MD, DM, Professors of Medicine at TUSM, will be the Program Director and Associate Program Director, respectively. The proposed training program is unique in that it combines training by senior nephrologist with outstanding records in cutting-edge research and by world leaders in epidemiology, clinical trials and health services research. Faculty supervision is complemented by oversight from internal and external advisory committees, consisting of senior investigators and executives from academia, government and business who are at the forefront of restructuring the health care system.

Training will include mastery of the methods for the conduct of efficacy studies (to identify effective treatment), as well as of effectiveness and efficiency studies (to implement findings from research in practice). The specific aims are as follows: 1) Didactic training – course-work in fulfillment of the MPH degree in the Department of Community Medicine at TUSN, with a concentration in Biostatistics and Epidemiology. 2) Independent Study – an hypothesis-based research project supervised by a senior nephrologist mentor within the Division of Nephrology and a non-nephrologist mentor from NEMC, TUSM, or associated institutions. Nephrology faculty and their collaborations have a rich set of databases and ongoing studies which can serve as the subject of fellows' research project. 3) Training in Presentations and Publication – participation in research conferences within the Division of nephrology and other participating units, including specific conferences designed to improve trainees’ oral and written presentations.

NIH T32 DK007777
2000

50th Anniversary of Division and Schwartz Renaming

Half a Century of Excellence

The Division of Nephrology at Tufts-New England Medical Center Alumni Reunion celebrating the 50th Anniversary of the founding of the Division by William B. Schwartz, MD
Friday - Saturday November 3 - 4, 2000
2000-2015
Clinician Educators

Scott J. Gilbert, MD

Excellence in Teaching Citations: 36
Notable Teaching Citations: 6
Teaching Award: 1
Outstanding Teaching in the Pre-Clerkship Years: 2
Outstanding Lecturer: 5
Optimization of pre-ESRD care: The key to improved dialysis outcomes

Principal discussant: BRIAN J.G. PEREIRA

New England Medical Center and Tufts University School of Medicine, Boston, Massachusetts, USA

Fig. 1. Components of optimal pre-end-stage renal disease (ESRD) care. Abbreviations are: CRF, chronic renal failure; RRT, renal replacement therapy; ACE, angiotensin-converting enzyme; BP, blood pressure [32].
2001

Dr. Gerald J. and Dorothy R. Friedman Professor of Medicine Endowed Chair

President John DiBiaggio
requests the pleasure of your company
at a dinner to celebrate
the establishment of the

Dr. Gerald J. and Dorothy R. Friedman
Professor of Medicine Endowed Chair
at
Tufts University School of Medicine

on

Thursday, the twelfth of April
two thousand and one

Gifford House
The President’s Residence
at
Tufts University
161 Packard Avenue
Medford, Massachusetts

Tufts Medical Center

enclosed card
17-666-1008
988-320-4103

Reception at 7 p.m.
Dinner at 7:30 p.m.
2002
KDOQI Clinical Practice Guidelines for CKD

K/DOQI Clinical Practice Guidelines on Chronic Kidney Disease

Work Group and Evidence Review Team Membership

Andrew S. Levey, MD, Chair
New England Medical Center
Boston, MA

Josef Coresh, MD, PhD, Vice Chair
Johns Hopkins Medical Institutions
Baltimore, MD
2003

National Kidney Foundation Center for Clinical Practice Guideline Development

Clinical Practice Guidelines in nephrology—for worse or for better

Katrin Uhlig, Ethan M. Balk, Joseph Lau and Andrew S. Levey

National Kidney Foundation Center for Clinical Practice Guideline Development and Implementation, Tufts-New England Medical Center, Boston, USA

Influence Public Policy Through Participating in CMS-led Technical Expert Panels

2003 End Stage Renal Disease Consumer Assessment of Health Plan Survey (CAHPS) Technical Expert Panel – Michelle M. Richardson, PharmD

2010 Dialysis Access Related Infections ESRD Clinical Technical Expert Panel – Daniel E. Weiner, MD, MS

2012 Dialysis Rehospitalizations ESRD Clinical Technical Expert Panel – Daniel E. Weiner, MD, MS

2012 Anemia Technical Expert Panel – Klemens B. Meyer, MD

2012 Comorbidity/Case Mix Adjustment Technical Expert Panel – Dana C. Miskulin, MD, MS

2013 Chronic Kidney Disease Related Mineral and Bone Disorders Technical Expert Panel – Klemens B. Meyer, MD

2004

KDOQI Clinical Practice Guidelines on Hypertension and Antihypertensive Agents in CKD
2007

Beginning of Research Program in Epidemiology of Cardiovascular Disease and CKD

Health ABC
ALLHAT
CARDIA
Coronary Artery Risk Development in Young Adults

Tufts Medical Center
2007
CKD as a Public Health Problem

Prevalence of Chronic Kidney Disease in the United States

JAMA 2007;298:2038-47.
2007

Founding of the PKDOC

The Polycystic Kidney Disease Outcomes Consortium is a critical collaboration between the PKD Foundation, Food and Drug Administration, Critical Path Institute, clinicians and the pharmaceutical industry to facilitate clinical trial development for ADPKD therapies.

http://c-path.org/programs/pkd/
2007-2016
Editor-in-Chief and Deputy Editor for the American Journal of Kidney Diseases
2009

Founding of the CKD Prognosis Consortium

Association of estimated glomerular filtration rate and albuminuria with all-cause and cardiovascular mortality in general population cohorts: a collaborative meta-analysis

Chronic Kidney Disease Prognosis Consortium

"Estimated glomerular filtration rate less than 60 mL/min per 1.73 m² and albumin-to-creatinine ratio ≥ 1.1 mg/mmol or more are independent predictors of all-cause mortality and cardiovascular mortality in the general population."
2009

Beginning of Research Project in Cerebrovascular Disease, Cognition and Cardiovascular Disease in CKD

**Albuminuria, Cognitive Functioning, and White Matter Hyperintensities in Homebound Elders**

Daniel E. Weiner, MD, MS,1 Keith Bartolomei, MD,2 Tammy Scott, PhD,3 Lori Lyn Price, MS,4 John L. Griffith, PhD,4 Irwin Rosenberg, MD,6 Andrew S. Levey, MD,1 Marshal F. Folstein, MD,3 and Mark J. Sarnak, MD, MS7

**Abstract**

Objective: There are few detailed data on cognition in patients undergoing dialysis. We evaluated the frequency of and risk factors for poor cognitive performance using detailed neurocognitive testing.

Methods: In this cross-sectional cohort study, 314 hemodialysis patients from 6 Boston area hemodialysis units underwent detailed cognitive assessment. The neuropsychological battery assessed a broad range of functions, with established age, sex, and education-adjusted normative scores. Principal component analysis was used to derive composite scores for memory and executive function domains. Risk factors for each domain were evaluated using linear regression adjusting for age, sex, race, and education status. Analyses were repeated in those with Mini-Mental State Examination (MMSE) score ≥24.

Results: Compared with population norms, patients on dialysis had significantly poorer executive function but not memory performance, a finding that persisted in the subgroup with MMSE score ≥24. In adjusted analyses, vascular risk factors and vascular disease were associated with lower executive function (p < 0.01).

Conclusions: There is a high frequency of poor cognitive performance in hemodialysis patients, primarily affecting executive function. Risk factors for worse executive function include vascular risk factors as well as vascular disease. Normal performance on the MMSE does not preclude impaired cognitive function, because individuals with MMSE score ≥24 also have a high frequency of poor cognitive performance. *Neurology* 2013;80:471-480

Tufts Medical Center

2009

CKD Biomarker Consortium

Biocon I: 2009-2015  Biocon II: 2015-present

Cross-Disciplinary Biomarkers Research: Lessons Learned by the CKD Biomarkers Consortium

Chi-yuan Hsu,1 Shawn Ballard,2 Daniel Batlle,3 Joseph V. Bonventre,4 Erwin P. Böttinger,4 Harold I. Feldman,1 Jon B. Klein,1 Josef Coresh,2 John H. Eckfeldt,7 Lesley A. Inker,8 Paul L. Kimmel,8 John W. Kusek,8 Kathleen D. Liu,8 Michael Mauer,9 Theodore E. Mifflin,7 Mark E. Molitch,7 Gary L. Nelsenstuen,71 Casey M. Rebholz,102 Brad H. Rosi,10 Venkata S. Sabbisetti,9 Jennifer E. Van Eyk,102 Ramachandran S. Vasan,102 Sushrut S. Waikar,9 Krista M. Whitehead,1 and Robert G. Nelson10 for the CKD Biomarkers Consortium

CIASN 2015;5:894-902.
A Randomized Trial of Intensive versus Standard Blood-Pressure Control

The SPRINT Research Group*
2012-2014
HALT PKD and TEMPO Studies

2013

NKF Primer on Kidney Disease

GFR Decline as an Endpoint for Clinical Trials in CKD:
A Scientific Workshop Sponsored by the National Kidney Foundation and the US Food and Drug Administration

Andrew S. Levey, MD,1 Lesley A. Inker, MD, MS,1 Kunihiro Matsushita, MD, PhD,2 Tom Greene, PhD,3 Kerry Willis, PhD,4 Edmund Lewis, MD,5 Dick de Zeeuw, MD, PhD,6 Alfred K. Cheung, MD,7 and Josef Coresh, MD, PhD2

Tufts Medical Center

Faculty Awards

Vannevar Bush University Professor at Tufts University
William B. Schwartz, MD 1976

Tufts University Faculty Recognition Award
Andrew S. Levey, MD 1999
Faculty Leadership

Dean
John T. Harrington, MD 1996-2002

Dean ad interim
John T. Harrington, MD 1995-1996
Nicolaos E. Madias, MD 2003

Executive Academic Dean
Nicolaos E. Madias, MD 1999-2004

Dean for Academic Affairs
John T. Harrington, MD 1994-1995

Dean for Students
Amy B. Kuhlik, MD 2000-Present

Academic Dean at St. Elizabeth’s Medical Center
Nicolaos E. Madias, MD 2010-Present
Faculty Awards

Tufts University School of Medicine Distinguished Professor
Jerome P. Kassirer, MD 2000

Tufts University School of Medicine Dean’s Award for Dedication and Excellence in Teaching
Jerome P. Kassirer, MD 1976, 1978
Robert J. Hamburger, MD 1986
Andrew S. Levey, MD 1986

Tufts University School of Medicine Distinguished Faculty Award
Jerome P. Kassirer, MD 1991
John T. Harrington, MD 1993
Nicolaos E. Madias, MD 2000
Andrew S. Levey, MD 2004
Ronald D. Perrone, MD 2009
Klemens B. Meyer, MD 2013

Milton O. M30 and Natalie V. Zucker Clinical Teaching Prize
Scott J. Gilbert, MD 2009-2010
Faculty Awards

John Phillips Memorial Award for Outstanding Work in Clinical Medicine
Jerome P. Kassirer, MD 1998
Faculty Awards

Members, Association of American Physicians

William B. Schwartz, MD 1961
Jordan J. Cohen, MD 1993
Jerome P. Kassirer, MD 1995
Andrew S. Levey, MD 2016
Faculty Leadership

American Association of Medical Colleges, President and CEO

Jordan J. Cohen, MD 1994-2006
Faculty Awards

John P. Peters Award
William B. Schwartz, MD 1973

Belding H. Scribner Award
Andrew S. Levey, MD 2013
Faculty Awards

Lillian Jean Kaplan International Prize for Advancement in the Understanding of Polycystic Kidney Disease (PKD)

Ronald D. Perrone, MD 2017
Faculty Awards

William B. Schwartz, MD 1971
Jerome P. Kassirer, MD 1991
Jordan J. Cohen, MD 1994
Faculty Awards & Leadership

National Kidney Foundation

President
Brian J.G. Pereira, MD, MBA 2002-2004

President’s Award
Andrew S. Levey, MD 1998

Garabed Eknoyan Award
Andrew S. Levey, MD 2002
Katrin Uhlig, MD, MS 2014

David M. Hume Memorial Award
Andrew S. Levey, MD 2012

Shaul G. Massry Distinguished Lecture
Mark J. Sarnak, MD, MS 2014

Donald W. Seldin Distinguished Award
Ronald D. Perrone, MD 2014
Faculty Leadership

Editor-in-Chief

Jerome P. Kassirer, MD 1991-1999
Faculty Awards

Physician of the Year Award
Ronald D. Perrone, MD 2014
Clinical Staff Awards

National Kidney Foundation
Gift of Life Awards

Jean McCorry, RN
Alice Martin, RN
Debbie Mitchell Dozier, RN
Staff Awards
Tufts Medical Center

Tufts MC True Blue
Geneva Tucker
2016

Saltonstall Awards
Helen Freedman
2006
Lorna Davies
2009
Debbie Dozier
2011
Dawa Dolma
2016