



Normandy House Nursing Home
Melrose MA
1967-1970

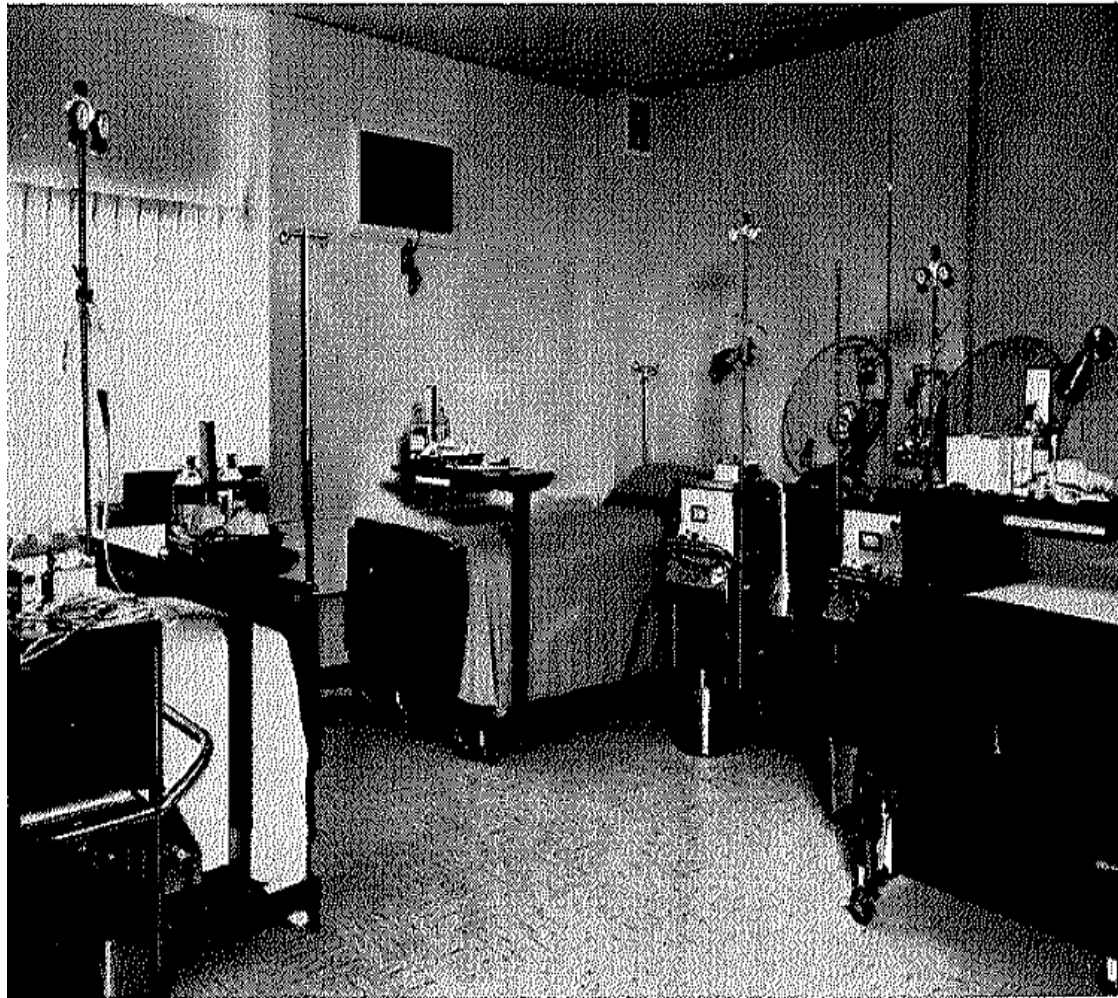


FIG. 1.—A chronic hemodialysis unit (3 beds) in a “satellite” center. In this instance the unit is located in an extended care facility (i.e., medicare), and is able comfortably carry a 9-patient load.



Normandy House Dialysis Unit
Melrose MA
1967-1970



Babcock Street Dialysis Unit
Brookline MA
1971-1978

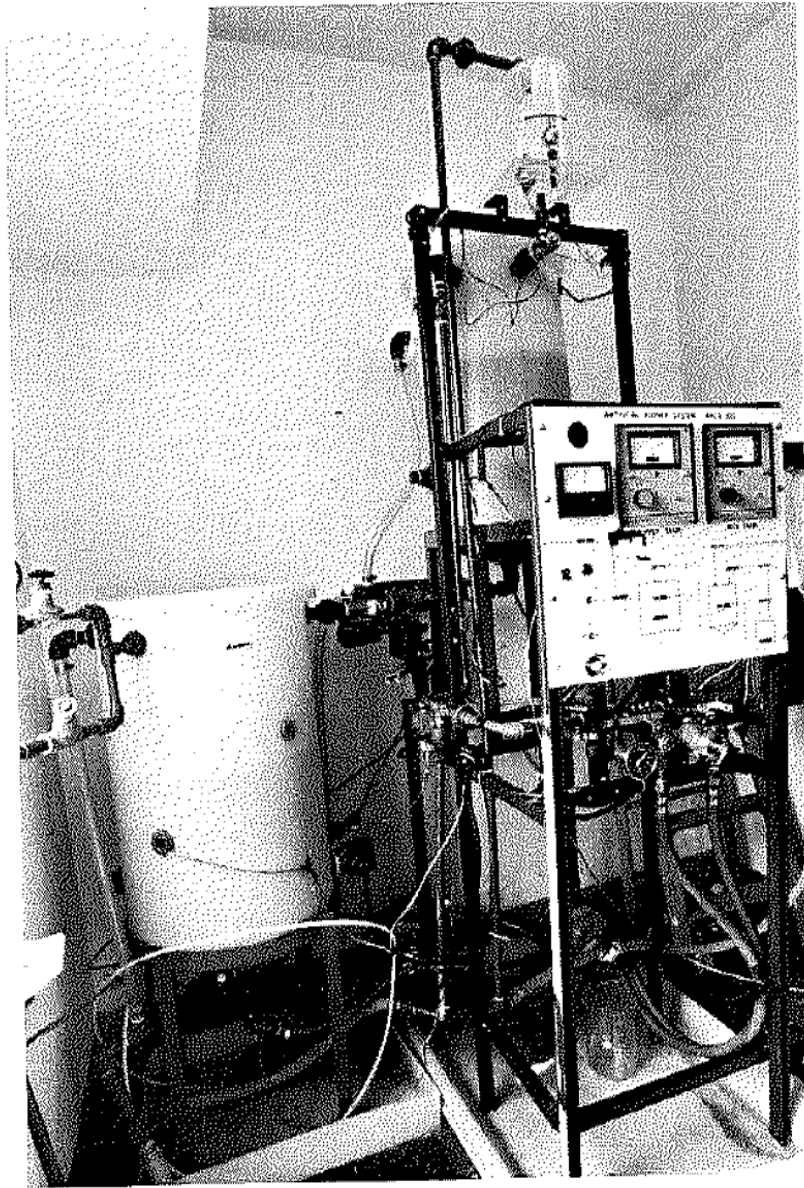


Fig. 1. Example of batch-type dialysate supply system. Makes dialysate for eight dialyzers.



Public Law 92-603
92nd Congress, H. R. 1
October 30, 1972

An Act

86 STAT. 1329

To amend the Social Security Act, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act, with the following table of contents, may be cited as the “Social Security Amendments of 1972”.

Social Security
Amendments of
1972.



Normandy House Dialysis Unit
Melrose MA
1967-1970



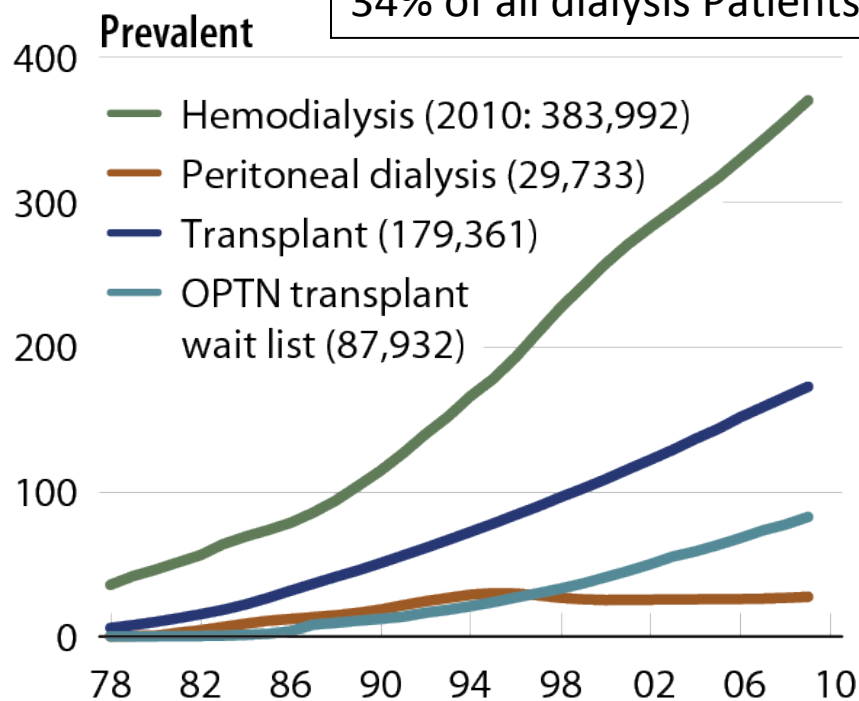
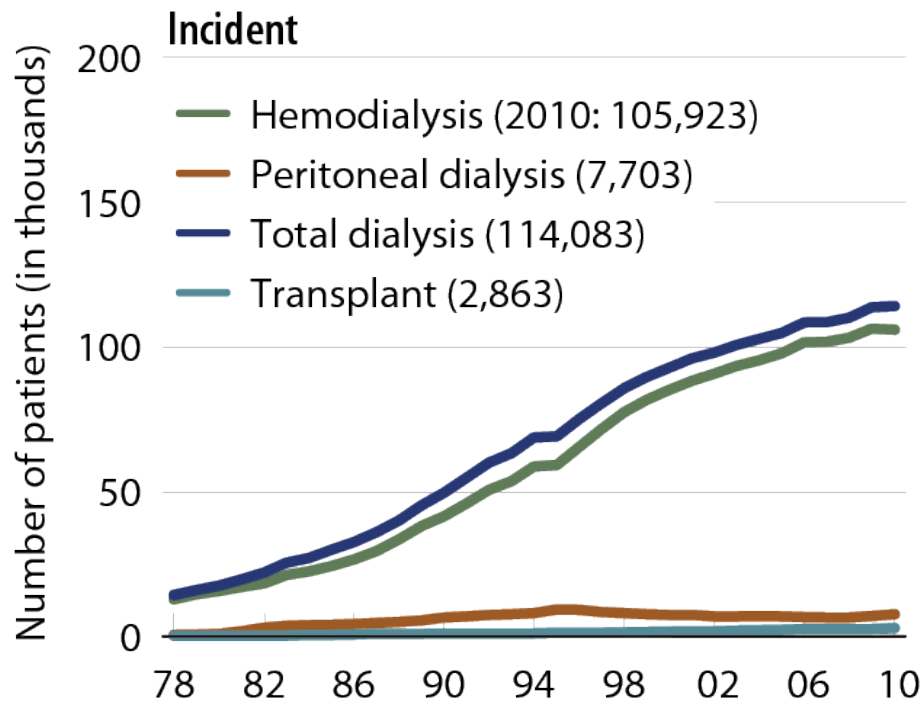
Babcock Street Dialysis Unit
Brookline MA
1971-1978

The Kidney Center
Brookline MA
1976-1998



Incident & prevalent patient counts by modality

NMC → FMC
Largest Provider
34% of all dialysis Patients



FRESENIUS MEDICAL CARE

	North America	Europe/Middle East/Africa	Latin America	Asia-Pacific	Total 2011
Dialysis clinics	1,838	600	218	242	2,898
Dialysis patients	142,319	48,346	25,381	17,110	233,156
Treatments (in millions)	21.61	6.61	3.68	2.50	34.39

Hemodialysis-related problems in patients with diabetes mellitus

SAMIR D. KASSISSIEH, MICHAEL C. YEN, J. MICHAEL LAZARUS, EDMUND G. LOWRIE, H. HOWARD GOLDSTEIN, FRANK J. TAKACS, CONSTANTINE L. HAMPERS and JOHN P. MERRILL

Departments of Medicine, Harvard Medical School at the Peter Bent Brigham Hospital and New England Deaconess Hospital and Joslin Clinic, Boston, Massachusetts

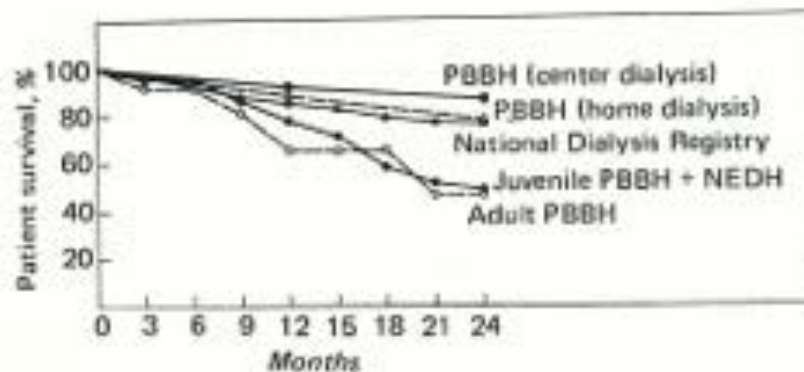


Fig. 1. Survival of juvenile and adult-type diabetic patients on hemodialysis compared with survival rates of the general dialysis population in the National Dialysis Registry [2] and at the Peter Bent Brigham Hospital [3].

Hemodialysis and Transplantation in Adults With Polycystic Renal Disease

J. Michael Lazarus, MD; George L. Bailey, MD;
Constantine L. Hampers, MD; and John P. Merrill, MD

JAMA, Sept 27, 1971 • Vol 217, No 13

EFFECTS OF BILATERAL NEPHRECTOMY ON
HEMODYNAMICS AND BODY COMPOSITION IN
PATIENTS WITH CHRONIC RENAL FAILURE

ROBERT M. ZOLLINGER, JR., M.D., JOHN J. SKILLMAN, M.D.,
F.A.C.S., J. ROBERT W. GUMPERT, F.R.C.S.,
CONSTANTINE L. HAMPERS, M.D., GEORGE L. BAILEY, M.D.
AND JOHN P. MERRILL, M.D.

**A Hemodynamic Evaluation of Bilateral
Nephrectomy and Hemodialysis
in Hypertensive Man**

By CONSTANTINE L. HAMPERS, M.D., JOHN J. SKILLMAN, M.D.,
JOHN H. LYONS, M.D., JOHN E. OLSEN, M.D.,
AND JOHN P. MERRILL, M.D.

11.

Circulation, Volume XXXV, February 1967

Urgent Bilateral Nephrectomy for Severe Hypertension

J. M. LAZARUS, M.D., C. L. HAMPERS, M.D., A. H. BENNETT, M.D., L. D. VANDAM, M.D., and
J. P. MERRILL, M.D., Boston, Massachusetts

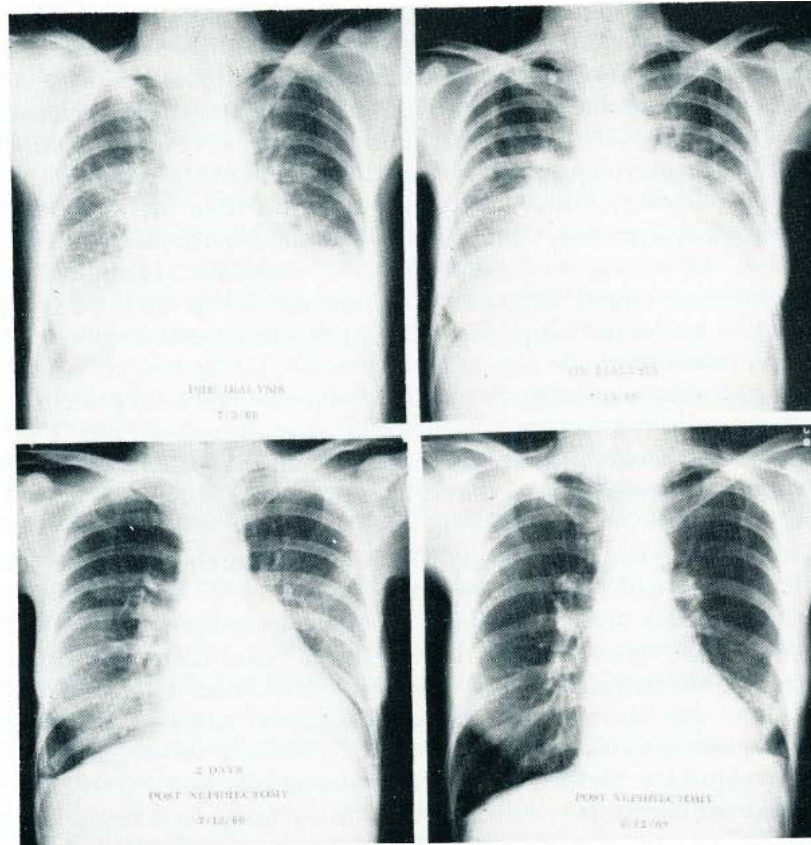


Fig. 6. This 37-year-old patient with malignant hypertension and congestive heart failure unresponsive to diazoxide, diuretics, digoxin, and thoracentesis received 3 hemodialyses with a resultant 10 kg weight loss. Despite dialysis and intensive antihypertensive therapy there was progressive congestive heart failure and persistent malignant hypertension. After bilateral nephrectomy, the patient had prompt amelioration of blood pressure with reduction in heart size, loss of aortic insufficiency murmur, and improvement in cardiovascular symptoms, mentation, and vision.

Cardiovascular disease in uremic patients on hemodialysis

J. MICHAEL LAZARUS, EDMUND G. LOWRIE, CONSTANTINE L. HAMPERS and JOHN P. MERRILL

Department of Medicine, Peter Bent Brigham Hospital, Boston, Massachusetts

Presented at the Conference on Adequacy of Dialysis, Monterey, California, March 20-22, 1974; sponsored by the Artificial Kidney-Chronic Uremia Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases.

©1975, by the International Society of Nephrology.

Vol. 290 No. 13

EDITORIALS

737

The New England
Journal of Medicine

CARDIOVASCULAR DISEASE IN DIALYSIS
PATIENTS

Peter Bent Brigham Hospital
Boston, Mass. 02115

EDMUND G. LOWRIE, M.D.
J. MICHAEL LAZARUS, M.D.
C. L. HAMPERS, M.D.
JOHN P. MERRILL, M.D.

Subtotal Parathyroidectomy in Chronic Renal Failure:
A Seven-Year Experience in a Dialysis
and Transplant Program

RICHARD E. WILSON,* M.D., CONSTANTINE L. HAMPERS,** M.D.,
DANIEL S. BERNSTEIN,*** M.D., JAMES W. JOHNSON,† M.D.,
JOHN P. MERRILL,†† M.D.

*From the Departments of Surgery and Medicine of the Harvard Medical School at the
Peter Bent Brigham Hospital, Boston, Massachusetts*

Ann. Surg. · Oct. 1971
Vol. 174 · No. 4

THE PLACE OF SUBTOTAL PARATHYROIDECTOMY IN THE MANAGEMENT OF
PATIENTS WITH CHRONIC RENAL FAILURE

A. I. Katz, C. L. Hampers, R. E. Wilson,
D. S. Bernstein, A. Wachman, and J. P. Merrill

Vol. XIV Trans. Amer. Soc. Artif. Int. Organs, 1968



Complications in hemodialysis: An overview

Principal discussant: J. MICHAEL LAZARUS

Harvard Medical School and Peter Bent Brigham Hospital, Boston, Massachusetts

Factors in the dialysis regimen which contribute to alterations in the abnormalities of uremia

EDMUND G. LOWRIE, STEVEN M. STEINBERG, MALCOLM A. GALEN, STEPHAN A. GAGNEUX,
J. MICHAEL LAZARUS, MICHAEL N. GOTTLIEB and JOHN P. MERRILL

Departments of Medicine, Peter Bent Brigham Hospital and Harvard Medical School, Boston, Massachusetts

Vol. 329 No. 14 PREDICTORS OF MORTALITY IN PATIENTS UNDERGOING HEMODIALYSIS — OWEN ET AL. 1001

THE UREA REDUCTION RATIO AND SERUM ALBUMIN CONCENTRATION AS PREDICTORS OF MORTALITY IN PATIENTS UNDERGOING HEMODIALYSIS

WILLIAM F. OWEN, JR., M.D., NANCY L. LEW, S.M., YAN LIU, M.S., EDMUND G. LOWRIE, M.D.,
AND J. MICHAEL LAZARUS, M.D.

INITIAL CLINICAL EVALUATION OF THE
HOSPITAL ARTIFICIAL KIDNEY SYSTEM

R. G. Kirkwood, M. O'Brien, Y. Butruille, J. M. Lazarus,
M. N. Gottlieb, and E. G. Lowrie

Vol. XXIV Trans. Am. Soc. Artif. Intern. Organs, 1978

PERFORMANCE AND CLINICAL USE OF A CONVERTIBLE
HEMODIALYSIS (HD) - ULTRAFILTRATION (UF) SYSTEM

T. Kunitomo, E. G. Lowrie, M. O'Brien, J. M. Lazarus,
M. N. Gottlieb, S. Kumazawa, and J. P. Merrill

Proc. Dialysis Transplant Forum, 1976

CONTROLLED ULTRAFILTRATION (UF) WITH HEMODIALYSIS (HD):
ANALYSIS OF COUPLING BETWEEN CONVECTIVE AND DIFFUSIVE
MASS TRANSFER IN A NEW HD-UF SYSTEM

T. Kunitomo, E. G. Lowrie, S. Kumazawa, M. O'Brien, J. M. Lazarus,
M. N. Gottlieb, and J. P. Merrill

Vol. XXIII Trans. Am. Soc. Artif. Intern. Organs, 1977

Kidney International, Vol. 26 (1984), pp. 194-200

Biocompatibility of dialysis membranes: Effects of chronic
complement activation

RAYMOND M. HAKIM, DOUGLAS T. FEARON, and J. MICHAEL LAZARUS
with the technical assistance of CYNTHIA S. PERZANOWSKI

Departments of Medicine and Immunology, Brigham and Women's Hospital, and Harvard Medical School, Boston, Massachusetts

Comparison of the study groups in the National Cooperative Dialysis Study and a description of morbidity, mortality, and patient withdrawal

THOMAS F. PARKER, NAN M. LAIRD, and EDMUND G. LOWRIE

Dallas Kidney Disease Center, Dallas, Texas, Harvard School of Public Health, and Harvard School of Medicine, Boston, Massachusetts

Modeling success or failure of dialysis therapy: The National Cooperative Dialysis Study

NAN M. LAIRD, CATHERINE S. BERKEY, and EDMUND G. LOWRIE

Harvard University School of Public Health and Harvard Medical School, Boston, Massachusetts

Clinical example of pharmacokinetic and metabolic modeling: Quantitative and individualized prescription of dialysis therapy

EDMUND G. LOWRIE and JOHN A. SARGENT
NATIONAL COOPERATIVE DIALYSIS STUDY¹

ORIGINAL ARTICLE ARCHIVE

Effect of the Hemodialysis Prescription on Patient Morbidity — Report from the National Cooperative Dialysis Study

E. G. Lowrie, M.D., N. M. Laird, Ph.D., T. F. Parker, M.D., and J. A. Sargent, Ph.D.

N Engl J Med 1981; 305:1176-1181 | [November 12, 1981](#) | DOI: 10.1056/NEJM198111123052003

The urea {clearance × dialysis time} product (Kt) as an outcome-based measure of hemodialysis dose

EDMUND G. LOWRIE, GLENN M. CHERTOW, NANCY L. LEW, J. MICHAEL LAZARUS,
and WILLIAM F. OWEN

*Fresenius Medical Care (NA), Lexington, Massachusetts; University of California, San Francisco, California;
and Harvard Medical School & Brigham and Women's Hospital, Boston, Massachusetts, USA*

Measurement of dialyzer clearance, dialysis time, and body size: Death risk relationships among patients

EDMUND G. LOWRIE, ZHENSHENG LI, NORMA OFSTHUN, and J. MICHAEL LAZARUS

Fresenius Medical Care (North America), Lexington, Massachusetts

**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. KUSEK, 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*

N Engl J Med, Vol. 347, No. 25 · December 19, 2002

Kidney International, Vol. 65 (2004), pp. 1386-1394

**Dialysis dose and the effect of gender and body size on outcome
in the HEMO Study**

**THOMAS DEPNER, JOHN DAUGIRDAS, TOM GREENE, MICHAEL ALLON, GERALD BECK,
CAMERON CHUMLEA, JAMES DELMEZ, FRANK GOTCH, JOHN KUSEK, NATHAN LEVIN, EDWIN MACON,
EDGAR MILFORD, WILLIAM OWEN, ROBERT STAR, ROBERT TOTO, GARABED EKNOYAN, FOR THE
HEMODIALYSIS (HEMO) STUDY GROUP**

Developments in ESRD Therapy

Measure of Adequacy

Ultrafiltration control

Bicarbonate Dialysate

Single Pass dialysate

AV Fistula

CAPD & APD

Understanding of Role of Protein / Calorie Intake

Biocompatible dialyzer membranes

Hollow Fiber Kidney

On-line Measurement of adequacy

IV Vitamin D

Erythropoietin Stimulating Agents

Some statistical methods for use in assessing the adequacy of hemodialysis

EDMUND G. LOWRIE, J. MICHAEL LAZARUS, C. L. HAMPERS and JOHN P. MERRILL

Presented at the Conference on Adequacy of Dialysis, Monterey, California, March 20–22, 1974; sponsored by the Artificial Kidney-Chronic Uremia Program of the National Institute of Arthritis, Metabolism, and Digestive Diseases.

© 1975, by the International Society of Nephrology.

Death Risk in Hemodialysis Patients: The Predictive Value of Commonly Measured Variables and an Evaluation of Death Rate Differences Between Facilities

Edmund G. Lowrie, MD. and Nancy L. Lew, SM

American Journal of Kidney Diseases, Vol XV, No 5 (May), 1990: pp 458-482

Illustrating Use of a Clinical Data System: The NMC-FMC System

Edmund G. Lowrie

Clin J Am Soc Nephrol 4: S41–S48, 2009. doi: 10.2215/CJN.02680409

Quantity of Data in FMCNA Database

- >980K patients
- >183K active patients
- >227 million HD treatments
- >903 million medication administrations
- >969 million lab results

- last updated 01/24/2013

External Uses of Data

- Data Collaboration with Academic Programs
 - Harvard School of Public Health
 - Brigham & Women's Hospital/HMS
 - Massachusetts General Hospital/HMS
 - Duke University
 - University of Pennsylvania School of Medicine
 - Maine Medical Center
 - University of North Carolina
 - Vanderbilt University
 - Mount Sinai
 - University of Michigan (DOPPS)
- Data Collaboration with Medical Directors
- Data Sales to Pharmaceutical and other Medical Companies
- Data Collaboration with Governmental Agencies
 - USRDS
 - CDC
 - AHQR
- Advocacy with fiscal intermediaries and policy makers
 - CMS
 - MedPAC
 - FDA

PBBH/BWH

Clinical Nephro-Epidemiology in CRF & ESRD

Development from 1948- 2013

John Merrill



Gus Hampers Ted Hager

George Bailey



Ed Lowrie Mike Lazarus



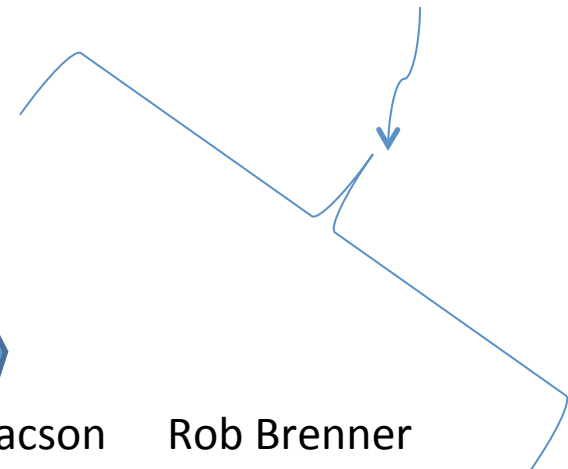
Ray Hakim Bill Mitch

Bill Owen Jon Himmelfarb
Glenn Chertow



Ted Steinman Eduardo Lacson Rob Brenner
Gary Curhan Lewis Brenner Steve Brunelli
Sus Waikar Wolfgang Winkelmeier Ajay Singh
John Forman Kevin Tucker David Mount

HMS School of
Public Health



SOME PETER BENT BRIGHAM HOSPITAL "FIRSTS"

Identification and development of a test field of surgery—neurography, or surgery of the brain—by Dr. Harvey Cushing.

The hospital was the first in New England to have an electrocardiograph machine.

The spigoted heart valves of a living patient were seen through an x-ray fluoroscope for the first time.

The first polio victim was saved using the newly developed Drinker Respiator, (now lung), in collaboration with the Children's Hospital and the Harvard School of Public Health.

Discovery of their effect as a specific treatment for peritoneal ascites by Dr. George F. Minot and Dr. William P. Murphy; Nobel Prize 1934, with Dr. George H. Whipple of New York.

The first record of Dr. Elliot Cushing's discovery of kidney.

The first studies developed to its end nephritis.

A method for using x-ray negative and used here in view.

Creating clearly identify, hyperton be known as "C of Brigham" end study of this line.

Diagnosis and treatment of Addison's Disease by Dr. Geo.

First "planning" of its total work by Dr. Francis D.

Research with adrenal steroids and ACTH was undertaken to discover how emotions and stresses such as fear, anger, anxiety, pain, trauma, and injury affect the general health of man through the endocrine mechanism.

Human survival after total adrenalectomy was accomplished by substituting cortisone therapy for natural hormonal function.

An environmental sepsis laboratory was established by Dr. Carl Walter to study the spread and control of hospital bacterial infections (staphylococcus, etc.). It continues to be the leader in its field.

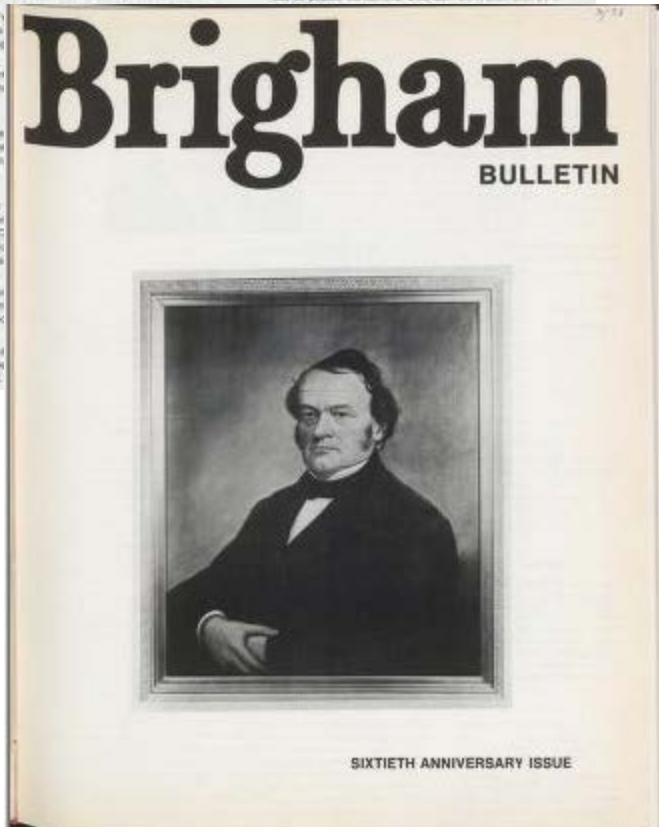
The first description of form of surgical jaundice based on the metabolic and biochemical response to injury by Dr. Francis D. Moore.

Development of blood banking, blood preservation, and use of plastic containers; Drs. Carl M. Walter and John

The first studies of individual kidney function were developed to further understanding of hypertension and nephritis.

Development of the artificial Kolff-Brigham kidney by Drs. George W. Thorn, Carl W. Walter, and John P. Merrill in 1948.

The first kidney transplantation between identical twins (isograft, 1954) and transplantations between unrelated individuals (homografts, 1952-1962) by a team of all four services, especially by Drs. John P. Merrill, Joseph E. Murray, J. Hartwell Harrison, and David Hume in the transplant work.



Brigham

BULLETIN
OCT 1976



80 Years of Roentgenology 1



Barry M. Brenner, M.D.
New Appointment
at HMS and PBBH 9



Patient Education
for Better Health Care 10

Staff Honors & Notes 13



Barry M. Brenner, M.D.
New Appointment
at HMS and PBBH



CHMC transplant surgeon, Dr. Ray Levey and Dr. Michael Lazarus, Director of CHMC Dialysis Unit with youngest mother/daughter transplant.

~ 1974