



Lewis Dexter



Lewis Dexter (“Lew” to his friends) was born on March 1, 1910 in Concord, Massachusetts. The first Dexter, a Baptist minister and printer, immigrated to New England in 1644. He was an admirer of Roger Williams and many generations of later Dexters prospered in Rhode Island with careers in business, law, and diplomacy. His father was an Episcopal minister who was subsequently named Curate of the Grace Episcopal Church in New Bedford, Massachusetts.

Lew did his secondary schooling at Concord High School and Choate before attending Harvard College, graduating cum laude in 1932. He followed his older brother, Smith Owen Dexter, into the Harvard Medical School, again graduating cum laude in 1936. Following two years of

residency in New York City at Presbyterian Hospital (now Columbia Presbyterian Hospital), Lew returned to Boston as a research fellow studying toxemia of pregnancy in the laboratory of Dr. Sowa Weiss at the Boston City Hospital. Their work eventually led to a book, Preeclamptic and Eclamptic Toxemia of Pregnancy (Little, Brown & Co, Boston, 1941).

Seeking to expand his understanding of hypertension, Lew studied renin for one year (1940-41) in the laboratory of Nobel Laureate, Bernardo A. Houssay, MD and Dr. Eduardo Braun-Menendez in Buenos Aires, Argentina. Following his year of expatriate study, Lew returned to Boston to continue working with Dr. Sowa Weiss who had just been appointed Hersey Professor of Medicine and Physician-in-Chief at the Peter Bent Brigham Hospital (now Brigham & Women’s Hospital). Sadly, Dr. Weiss died shortly thereafter from a cerebral hemorrhage. Despite this set-back, Lew continued to work in Dr. Weiss’ laboratory, collaborating with Florence Haynes, PhD. They developed a plasma renin assay and found that hormone in the blood of some, but not all, patients with hypertension.

In an attempt to improve the sensitivity of the renin investigations, Dexter learned catheterization of the renal veins using a venous cut-down in the antecubital fossa, a technique learned from Dr. Stanley Bradley of Boston University.

At about this time, Lew met and married Cassandra (“Sandy”) Kinsman. Dr. George Thorn, now Hersey Professor of Medicine, asked Lew to remain on the full-time staff of the Brigham. On December 7, 1944, Lew set out to catheterize the renal veins of a patient with hypertension. A serendipitous observation that day changed the course of modern medicine. In his own words, Dexter later described that eventful procedure: I got to the renal vein, got some venous blood, and had time left over; I decided to wander around the heart which I understood was above the diaphragm somewhere. Suddenly, this catheter came clear out in the lung field and I was sure I had perforated the heart. I didn’t have any idea of what to do and, so I turned on the overhead lights and said, “Mr. _____, how are you?” He said, “I feel a hell of a lot better than you look.” Then I was pretty sure that having perforated the heart, it just sort of sealed itself off and I wondered what would happen when I pulled it back. So I closed my eyes and pulled the catheter back and nothing happened. And then it was all over and I put a little band-aid on his wound and went and looked up the anatomy of the chest and figured that I had gone into the pulmonary artery.

That noon, I was having lunch in the Brigham dining room and there was Sidney Burwell who was Dean of the Harvard Medical School at that time. I told this to Sidney and he said, “Do you have any idea of the implication of what you have done?” I thought he was going to kick me out of the medical school. But, it so happened that he and Eugene Eppinger had gotten Robert Gross to get samples of blood from the appropriate spots during surgery from a patient with a patent ductus arteriosus, and they knew how to calculate systemic blood flow, how to calculate pulmonary blood flow, and how to calculate the shunts having already published this method.

Burwell pointed out... the old business of prepared minds... if you can get up to the pulmonary artery once, you can get up there twice, and if you can get up there twice, congenital heart disease should be an open book to you. And he had sold me on the idea - so just overnight I changed from hypertension to the heart, where I guess I’ve been ever since.”

Following this observation and Dexter’s meeting with Sidney Burwell, Lew began to investigate systematically the pathophysiology of congenital heart disease. Many publications then emanated from Lew’s laboratory elucidating for the first time the pathophysiologic alterations present in many different forms of congenital heart disease: atrial septal defect, patent ductus arteriosus, tetralogy of Fallot, ventricular septal defect, and pulmonic stenosis. During this early phase of his investigations, Lew personally built a number of pieces of equipment used in the cardiac catheterization laboratory. Pressure transducers, for example, were not available until 1948, four years after Dexter’s first catheterization of the pulmonary artery.

Dexter's laboratory quickly gained a reputation as a place to do exciting research. Over the years, more than sixty cardiologists trained there; more than half of these physicians went on to distinguished academic careers. Subsequent pioneering work in Lew's laboratory led to the discovery that pulmonary capillary wedge pressure was equivalent to left atrial pressure; that stenotic valve areas could be calculated from hemodynamic variables measured during cardiac catheterization, and that exercise with a cardiac catheter in the heart was safe and produced clinically important data. Dexter himself was the first individual so tested. Moreover, important pathophysiologic studies exploring pulmonary embolism, valvular heart disease, right and left ventricular function, and pulmonary hypertension issued from the laboratory during subsequent years. During his career, Dr. Dexter published more than two-hundred peer-reviewed scientific papers, as well as numerous book chapters and editorials.

Dr. Richard Gorlin was a fellow in Lew's laboratory when Dr. Gorlin and his engineer father developed the valve area formula which bears his name. In a manner typical of his humility and sense of fair play, Lew removed his name from the manuscript prior to publication in order to ensure that this important contribution would always be associated with the Gorlins alone.

In addition, to his major research contributions, Lew was a superb teacher. He was revered by generations of Harvard Medical School and University of Massachusetts Medical School students during more than 50 years of instruction. As a professor, Lew encouraged his students to look beyond mere memorization of facts in the study of medicine. He taught that if one understood the pathophysiology of the patient's disease, then one could predict the signs, symptoms, and laboratory findings in that patient. For his research and teaching accomplishments Lewis Dexter received many awards including the James B. Herrick Award and the Research Achievement Award of the American Heart Association, the Paul Dudley White Award of the Massachusetts Affiliate of the American Heart Association, the College Medal of the American College of Chest Physicians, and an Honorary Doctor of Science degree from the University of Massachusetts.

Dr. Dexter rose through the academic ranks at the Harvard Medical School; he was Clinical Professor of Medicine from 1959-1969, Professor of Medicine from 1969-1976 and Professor Emeritus thereafter. Following his retirement from the Brigham, Lew taught third-year medical students at the University of Massachusetts Medical School for 9 years (1981-1990) holding the title of Emeritus Visiting Professor of Medicine during these years.

Dexter was a member of the Association of American Physicians, the American College of Physicians, the American Heart Association, the American College of Cardiology, the Association of University Cardiologists, the American Clinical and Climatological Association, the American Academy of Arts and Sciences, and the British, Mexican, Peruvian, and Argentine Cardiac Societies.

In addition to his research and teaching activities, Dr. Dexter also did extraordinary clinical work. He was revered and loved by his patients. One had only to spend time rounding with Lew and watching

him interact with his patients, to understand the special bond that developed between this master clinician and his patients.

Lewis Dexter was a warm, engaging, kind, compassionate and dedicated human being. Countless students, house officers, fellows, and colleagues were frequent guests at the Dexter home at 108 Upland Road in Brookline, Massachusetts. Sandy always set a huge table brimming with food, and the resultant friendly and animated conversations were in no small part the result of her warm and hospitable personality. In later years, when Lew was ill, Sandy was always at his side, supportive and loving. The atmosphere generated by Lew and Sandy in their homes in Brookline and Westport and on their 38-foot yawl will always be remembered by hundreds of students, physicians, and their families who were fortunate enough to visit the Dexters' homes during more than fifty years.

Lew is survived by his wife Sandy; a sister, Helen Dexter Loring; two sons, Lewis, Jr. and Smith Owen; a daughter, Cassandra K. Short; three grandchildren, Alex Dexter, Nina Kinsman Pacheco, and Jason Short; two great grandchildren, Logan and Lindsey Pacheco; and two nephews, Rev. Richard T. Loring and Christopher Loring. Lewis Dexter served as foster father to his two nephews who were teenagers when their father, Lew's brother-in-law; died in 1948. One of these nephews, Rev. Richard T. Loring, spoke at Lew's funeral on December 10, 1995, and summarized Lewis Dexter, the man, in a way that bears repeating as well as emulation:

“On those occasions when I visited his Brigham Hospital laboratory, it was obvious that he was adored by his staff at every level - by interns and trainees, by secretaries and by cleaning personnel. From what I have heard, his bedside manner melted the hearts of even the most fearful and apprehensive patients, and relaxed them with his good humor and hearty laugh, while never compromising his professional integrity.

And when honors came his way, he was humble enough to be surprised, and never assumed that he deserved them. I had to work on him to get him to list them all in his curriculum vitae.

Lewis Dexter, people without number besides myself, owe you more than any of us can ever repay. I am proud and thankful to have had you as my uncle.”

All of us who knew Lewis Dexter are proud and thankful for our friendship with this great man and mentor.

James E. Dalen, M.D., M.P.H.

Mrs. Lewis Dexter

Ira S. Ockene, M.D.

John A. Paraskos, M.D.

Elliot Rapaport, M.D.

Thomas W. Smith, M.D.

Paul D. Stein, M.D.

Joseph S. Alpert, M.D. (Chairperson)