Lewis Atterbury Conner, one of the founding group of the American Heart Association in 1924 and its first president in 1924 to 1925, is honored by the Lewis Conner Memorial Lecture at the annual American Heart Association Scientific Sessions.

Conner was born in New Albany, Ind, and received the degree of bachelor of philosophy from the Sheffield Scientific School of Yale University in 1887. He then attended the College of Physicians and Surgeons of Columbia University, where he received the MD degree in 1890. Conner was appointed as a house officer at New York Hospital from 1890 to 1892. From 1892 to 1894, he was in Vienna, Munich, and Heidelberg as a postgraduate student. He returned to clinical practice in New York City in 1894 (Figure 1).

The Department of Medicine: Professor and Chairman

Most of Conner’s career was devoted to the New York Hospital and Cornell University Medical College. The New York Hospital was granted a royal charter in 1771 and opened in 1791; in 1877, the hospital moved to a new site that extended from Fifteenth to Sixteenth Streets, west of Fifth Avenue. The Cornell University Medical College, founded in 1898, associated with the New York Hospital in 1927.

Conner had been appointed as an Instructor in Medicine in the original faculty at Cornell in 1898 and became Professor of Clinical Medicine 2 years later. At that time he was also an Attending Physician to the New York Hospital’s House of Relief on Hudson Street and an Assistant Pathologist to the New York Hospital (Figure 2). W. Gilman Thompson, also a graduate of Sheffield Scientific School at Yale, with an MD from Columbia University College of Physicians and Surgeons in 1881, had been Professor of Medicine at Cornell from 1898 until 1916. When Conner succeeded Thompson as Professor and Chairman of Medicine in 1916, the Department of Medicine also included the Russell Sage Institute of Pathology affiliated with the second medical service of Bellevue Hospital, the Cornell Division. As described by Harvey, the faculty roster included a cross section of fine clinical investigators who contributed to the excellent research productivity of the department in the 1920s. With the opening of the “new” New York Hospital–Cornell Medical Center in 1932, Eugene F. DuBois replaced Conner as Chairman of the Department of Medicine.

Military Experiences

Conner’s military experiences extended from service as a private in 1898 during the Spanish-American War to serving as a senior medical officer in the US Army Medical Corps during World War I. The US Army physical examination process during World War I required the US Army to update the 1910 version of its “Rules for Examination of Recruits” and to revise and clarify cardiovascular physical examination standards and terminology. This was the first experience in the United States with an organized and systematic examination of almost 4 million young men. The conventional physical diagnostic wisdom, based on 19th century clinical pathological correlates derived from patients with late-stage disease, was of limited value in these activities.

Conner was chief of the Army Medical Corps Division of Internal Medicine, with the rank of major in 1917. He was involved in the selection and training of cardiovascular specialists whose responsibilities involved the interpretation and clarification of cardiovascular signs and symptoms, reconciling cardiovascular physical findings with the military criteria for fitness for duty. Later in the war, Conner represented the Surgeon General’s office in the implementation of the first Cardiovascular Medical Center at US Army Hospital #9 at Lakewood, NJ. Discharged with the rank of colonel in 1919, he was appointed a brigadier general in the Reserve Corps in 1919.

Conner took “stock of what has been accomplished by all this elaborate effort” in the United States when he presented “Cardiac Diagnosis in the Light of Experiences With Army Physical Examinations” at the Association of American Physicians meeting in Atlantic City in June 1919. Clarification of the vague, preexisting cardiovascular physical examination standards and terminology was a major concern. His translation of the wartime lessons learned about cardiac diagnosis, the pathogenesis of cardiac disorders, functional disorders of the heart, and valvular heart disease, in particular mitral regurgitation, was directed to the problems physicians faced in civil life. Many of his observations and conclusions surfaced in his later publications and in his discussions of papers presented at the American Heart Association meetings.
Public Health and Rehabilitation: The New York Heart Association and the American Heart Association

Early in his career, Conner’s attention was directed to heart disease as a public health problem and to the rehabilitation of cardiac patients. His participation in the development of the heart associations was an expression of his commitment to the “heart movement.” This involvement extended to the establishment of the cardiac convalescent home, cardiac classes, the Trade School for Convalescents, and specialty outpatient clinic programs. Conner’s 1927 rehabilitation article quotes Frederic Brush on the appropriation of public and private funds for the care of cardiac patients, emphasizing the differential cost of care of the cardiac patient in the hospital ($30 per week) compared with the convalescent home ($12 per week) and the special cardiac clinic ($1 per week).

Fye used the term “public health cardiologists” to describe a select group of physicians who were concerned with the provision of both medical and social services to cardiac patients and who played a major role in the establishment and the direction of the US organizations devoted to cardiac disease. Prevention of heart disease, cardiac disability and rehabilitation, and the social and economic consequences of heart disease were topics added to the traditional concerns about diagnosis and treatment.

Conner was a central figure in these deliberations and activities, and Fye traces Conner’s role within the heart movement from the cardiac clinic to the convalescence of working men with cardiac disease and to the creation of the Association for the Prevention and Relief of Heart Disease in 1915. Conner served as the first president of this group, which brought together physicians and laypersons concerned “about the frequency and social consequences of cardiac disease.”

Introduction of the ECG and the World War I medical experiences accelerated the development of specialists who became “heart men,” and Conner’s wartime observations contributed to the growing epidemiological awareness about the causes and frequency of heart disease in specific age groups and in the population at large. A group of distinguished men and women were involved in the next formative steps, first of the New York Heart Association, and then of the American Heart Association (1924). These were important steps in the development of US cardiology in the early 20th century. Throughout the story, Lewis Conner was present at the beginning.

The American Heart Journal

Conner was the first editor-in-chief of The American Heart Journal, the “official organ of the American Heart Association,” from 1925 until his resignation in 1936 (Figure 3). His editorial entitled “The American Heart Journal” appeared in the first issue of that publication in October 1925, expressing his views of the role of the new journal, with a focus on the “newly awakened” widespread interest in circulatory diseases and the preventative aspects and public health relations of heart diseases. He cited 2 distinct motivating forces for a new journal. One was the need for a periodical covering the diseases of the heart and the circulation. The other was the conviction that such a journal would be a potent factor in the furtherance of the aims and goals of the...
American Heart Association, “for the better education of the medical profession in matters relating to the diagnosis, treatment and prevention of heart diseases is the first essential step in the campaign against these diseases.” Clinical studies, special research, and public health aspects were important subjects to be covered in the American Heart Association publication.

The Conner Legacy
Conner’s legacy extended beyond his academic, writing, and editorial activities. David Barr recalled Conner’s “... preeminence as a teacher can be attested by all graduates of Cornell who came ... into contact with his remarkable example and method. His learning, his clinical judgment, and above all, his integrity, made him the idol of the students and particularly of those chosen young men who were permitted to work with him as interns or residents in the wards of the New York Hospital.”

One of “Those Chosen Young Men”
William Paul Thompson was one of these “chosen young men” who worked with Conner as an intern at the “old” New York Hospital before the opening of the New York Hospital–Cornell Medical Center on East 68th Street.

Thompson was born in Iowa in 1907, began medical school at the University of Iowa, and spent the last 2 years at Harvard, where he received his MD degree in 1931. He was in the last group of interns with Lewis Conner at the “old” New York Hospital, made the move to the medical center when it opened, served there as an assistant resident in medicine, and then worked with cardiologist Dr Harold J. Stewart as the first cardiology resident at the medical center.

Thompson went on to a research fellowship at Harvard from 1934 to 1935, where he was assigned to work with Dr Samuel A. Levine at the Peter Bent Brigham Hospital, and then spent 2 years with Dr Paul Dudley White at the Massachusetts General Hospital. Thompson moved to Los Angeles, Calif, in 1937 and had a distinguished career in the private practice of cardiology with faculty appointments at Loma Linda University from 1938 to 1966 and at the University of Southern California from 1966 to 1974. The American College of Physicians honored him in 1982 as the Dean of Cardiologists in the Los Angeles medical community and one of the outstanding clinical cardiologists in the United States. (Figure 4).

William Paul Thompson Recalls Lewis A. Conner
Dr Thompson responded to my request for his recollections of his time with Lewis Conner with the following vignette, dated 10 April, 1990.

Lewis A. Conner and the New York Hospital
The “old” New York Hospital was indeed old when I started my service as an intern on January 1, 1932. The hospital building, located at 8 West 16th Street in
New York City, was in fact so old that one was inclined to be suspicious it was the same building in which it began its existence when it was “Founded in 1771 in the Reign of George III,” as its logo proclaimed. The New York Hospital was the second hospital founded in the Colonies, the Pennsylvania Hospital having preceded it.

The Medical Service was located in two large open wards, one for women, the other for men. As an intern, I did my own laboratory work, urine examinations, blood counts, and such, but had no real laboratory, simply a desk in the waiting room between the two wards.

The medical floor was reached by way of an ancient elevator, activated when the passenger within pulled on ropes. It traveled so slowly that the intern, always pressed for time, usually elected to reach his destination by way of the stairs.

The ambulance service, which was then a required part of the internship, consisted of a single electric-powered vehicle with hard rubber tires and an open back in which the intern, in uniform, sat while clutching an upright (Figure 5). Traffic was cleared by the clanging of a gong mounted on the outside of the ambulance and activated by the driver by pumping a lever back and forth. The speed achieved was probably 10 miles per hour, less going uphill.

The inexperience of the intern, freshly out of medical school, was balanced by that of the driver, an old hand who always knew what to tell the intern to do and what disposition to make of the case.

But the service was not as primitive as all this may appear. The rewarding part of the service, and rewarding it was, was the chief, Dr Lewis A. Conner. Rounds with him were a delight, especially when he came from church each Sunday morning dressed in his wing collar, long-tailed jacket, and striped pants.

Dr Conner was tall, straight, with a bald head and red fringes, exceedingly dignified, a scholarly gentleman with never an unkind word toward patients or staff. His physical examinations were meticulous, always ending when he asked the head nurse, who always accompanied him on rounds, for the sounding towel. This was placed by the nurse over the chest of the patient for the purpose of immediate auscultation (Figure 6). Dr Conner always heard more than his staff. In my more mature years, I have often suspected he may have been more influenced by tactile than auditory sensations, much as was the case of Helen Taussig, also quite deaf.

I had the privilege of being Dr Conner’s last intern. The “old” New York Hospital closed its doors on July 31, 1932. The house staff until the opening of the “new” New York Hospital on September 1, 1932, was forced to shift for itself without the vital pay of board, room, and laundry, not an easy task at the depth of the Great Depression.

The new hospital at 525 East 68th Street in New York City provided a profound change, housed in a glittering new building of 27 stories on the East River. Our first lunch was in the Doctors’ Dining Room on the 18th floor overlooking the river. We were seated by the hostess and asked to choose steak or soft-shell crab! Our unheard of bounty, for interns at least, did not last long as the Depression caught up with the Hospital, and we ended sharing the employees’ cafeteria in the basement.

The new hospital was a shiny new environment that made us all happy to feel we “had arrived” in a research atmosphere, but with the retirement of Dr Conner from active teaching on the move uptown, we all lost that superb clinical teaching that made service with Dr Conner such a joy.

**Conner Recalled**
Dickinson W. Richards, distinguished American physician, cardiopulmonary physiologist, and Nobel Laureate, gave the Conner Memorial Lecture in 1953, and recalled Conner: “…he was, throughout his long life, primarily a clinician and a teacher of medicine … a master in the art and science of physical diagnosis … held firm to the belief that new advances should support and add to our simpler forms of
knowledge, rather than replace them; that in the analysis and
treatment of disease, laboratory findings, whatever their
nature, should be our servants and not our masters.”

A wonderful description of the man, his times, and the
legend came from J. James Smith, MD, Cornell class of 1938,
who knew Conner as a “physician and teacher of consummate
skill.” After his retirement from practice, Conner acted as
medical director of the Burke Convalescent Home. Conner
was a friend and advisor of John Masterson Burke and had
been instrumental in the development of the home. Smith
picks up the story at this point:

Educated at a time when the unaided senses still
represented the only resource in the clinical study and
recognition of many diseases, Dr Conner’s mastery of
physical diagnosis must have frequently astonished
the uninitiated house officer. One such young physi-
cian, while presenting a case of lung abscess follow-
ing pneumococcal pneumonia at Grand Rounds, re-
ported incredulously that the correct diagnosis had
been made at the Burke Convalescent Home by a very
aged physician who didn’t even have a stethoscope.
This man had never seen Dr Conner palpate for
the cardiac apex with his gnarled fingers, after which he
announced a “high degree of mitral stenosis.” This
was before he listened, which of course was with
sounding towel and naked ear, for his hearing loss
defeated the use of the stethoscope [Figure 6]. One of
the few details about his career that Dr Conner ever
told me personally was said hesitatingly, almost
sheepishly. He said he thought he had performed the
first lumbar puncture on a living man on this
continent.

It seemed that during a tour of Europe in the 1890s,
which in those days was an important finishing-off
process in medical education, he had visited the clinic
in Kiel of Heinrich Quincke, who was then develop-
ing the technique of lumbar puncture. Quincke
describes that in two papers published in Berlin Kli-
nische Wochenschrift, 28:929, 1891, and 32:889,
1895. In that latter paper, he reports the needles were
fabricated for him by “instrumentenmacher Assman.”
With rare foresight, apparently well aware of the
importance of the technique, Lewis Conner brought a
supply of these needles back with him. . . .

It was in the House of Relief, probably in the
reception ward, where Lewis Conner performed the
lumbar puncture with his German-made needle. His
introduction of this technique could not have been
more timely [as] . . . “epidemic meningitis was an
important disease at the turn of the century.”

Conner has not had a biographer to date. However,
his many contributions to the study, treatment, and
prevention of heart disease, the “heart movement,”
and the formation of heart associations (in particular,
the American Heart Association) provide us with
important chapters in 20th century US medicine.

Those who knew him and worked with him left us
with varied titles and descriptions: clinician, teacher
of medicine, professor and chairman, master of the art
and science of physical diagnosis, leader in the heart
movement, public health cardiologist, president,
editor-in-chief, a man of integrity. The language and
descriptions contribute bits, pieces, and fragments to
the Conner mosaic. In the end, however, it is Thomp-
son’s salute that brings us closest to the essence of the
man: the revered “Chief,” the superb clinical teacher
with whom service was “such a great joy.”

Appendix

The Conner Bibliography

Conner’s written legacy was modest compared with his influence
on colleagues, students, institutions, and organizations. The bibliogra-
phy, an admixture reflecting Conner’s wide range of medical
interests, mirrors the development of a US-educated clinician with
the benefit of postgraduate experiences in Vienna, Munich, and
Heidelberg. It progresses through early 20th century clinical practice
and academic medicine in New York City and Conner’s assumption
of positions of leadership in US internal medicine and cardiovascular
medicine. Several observations on his publications follow.

Duplicate publication is present in several instances; this involved
papers presented at meetings of organizations that then published
transactions of the proceedings; publication in multiple journals,
each with a different audience, did not carry the stigma about
duplicate publication that developed later in the century. The
bibliography was assembled from the Conner files in the archives at
the New York Hospital–Cornell Medical Center, the Index Medicus,
the American Heart Journal, the publications of the Association of
American Physicians, and several history-of-medicine bibliographies
and relevant databases.

His earliest articles involved use of the “new” technology of
lumbar puncture in children and adults, his objections to a method
of treating thoracic aneurysms with a subcutaneous injection of gelatin,
and his observations on the near-fatal cardiac depressive effects of
quinine contained in “cold” medicines. Conner’s interests in clinical
and pathological correlates was paralleled in articles dealing with bile
pigments, the causes of bronchopneumonia, syphilis of the trachea
and bronchi, and status lymphaticus.

His concerns about the acoustic limitations of the stethoscope
dealt with the use of immediate auscultation—the ear applied
directly to the chest wall—as contrasted with mediate auscultation
using the stethoscope, whereas the clinical study of heart cases in
1908 presents a broader approach to physical examination, with
the venous pulse, percussion, auscultation, and the use and limitations
of the new imaging technology, the chest radiograph and cardiac
fluoroscopy.

Graphic recordings of the disordered respiration associated with
central nervous system disease; the causes and immunologic therapy
of pneumonia; complications of typhoid fever; rheumatic fever and
rheumatic heart disease; cardiovascular syphilis; coronary artery
disease; cardiac neurosis; and pulmonary thromboembolic disease
are recurrent themes.

His concerns were frequently well ahead of the time. Conner
recognized the value of the laboratory in medical practice and
suggested requirements for minimal standards of commercial clinical
laboratory accuracy in 1923. He also recognized the need for a “truer
perspective” between laboratory aids and the older bedside methods
of clinical observation and careful deductive reasoning.

His later publications dealt with focal points in the development of
cardiology during the first half of the 20th century. The 1930 paper
on the “Natural History of Coronary Thrombosis” was an early and
extensive study of morbidity, mortality, and survival in patients with
coronary artery disease, with attention to the effects of age, sex,
hypertension, and diabetes.

A state-of-the-art review of rheumatic fever and rheumatic heart
disease in 1937 and an extensive review article in 1939, “The Heart
and Its Disturbances,” are concise presentations of the cardiology of


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Conner “In Discussion”

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