

IN THE BEGINNING: THE CREATION OF THE NEUROLOGICAL UNIT AT BOSTON CITY HOSPITAL

David M. Dawson, MD
Harvard Medical School
Boston, MA

Creation of a Hospital for the “Deserving Poor” in Boston

The impetus for a new hospital in Boston arose in 1849 and was the direct consequence of a cholera epidemic in the city the preceding year. That had been successfully dealt with by construction of a temporary hospital on Fort Hill. This hill, a small drumlin, was located near Rowe’s Wharf, and has since, along with the cholera hospital, been removed. That area of Boston promised further commercial development and did not seem suitable as a long-term solution to the need for a hospital facility.

The only hospital in Boston in 1849 was the Massachusetts General Hospital (MGH), located in the North End. The Back Bay and the South End were being filled in and residential development was occurring throughout Boston. The population of the city increased from 84,000 to 137,000 between 1840 and 1850, much of the increase of course resulting from a flood of immigrant from Europe, mainly Ireland. By 1850 the population of Boston, for the first time since its founding, was more than half foreign-born. Many of the new residents were without money or resources, and such medical care as they received was at the facility on Deer Isle, which was really an almshouse.

The hope in 1849, fueled by interest on the part of many Boston physicians, was for a hospital for the working poor – not destitute. MGH was inadequate for the task. For example, MGH would not accept patients with chronic disease, tuberculosis, or known post-partum illness. Patients were turned away. In the late 1840’s, over a 2 ½ year period, 2,753 people applied for admission to MGH, and of those 731 were refused. In many instances, this was because the hospital was full and there were no beds. Some supporters of MGH denied that there were any problems or need for a new facility, but many physicians of the city, including those on the MGH staff, did not agree.

The greatest need in the middle of the nineteenth century was for working class patients. The rich could more easily and safely be cared for at home. The hope was to place the hospital in the South End, an area of the city in which new residential building was proceeding apace. In order to avoid offending new residents of that area, a new hospital would have to avoid bring in the “undesirables” and preferably would have a park-like pleasing appearance to enhance the neighborhood. The new hospital would be intended for “persons of temperance and industrious habits who by sickness or accident require the care and attention for which they are unable to pay.”

Progress was slow. Opposition arose. The Mayor and Aldermen appointed a Committee on Internal Health in 1849, chaired by the vigorous Henry P. Rogers. He inquired of John Collins Warren, the distinguished surgeon, recently retired who wrote, “I am satisfied the city ought to have a hospital for this class of persons (the sick poor). It should be located in South Boston. Possibly it might be useful to have a small hospital on the peninsula for accidents.” He recommended that the staff should consist of one surgeon and one physician or “at most two of each.” They should be well paid. Young men could serve as assistants without pay and spend two hours a day or so at the hospital. There would be two or more residents, appointed annually, with full maintenance. Dr. Warren’s ideas about the hospital layout and construction were derived from the arrangement of the wards in the Bulfinch Building at MGH, where he had worked for many years. In the end, however, the South Boston location

was rejected. Instead, a site in the South End was chosen as it was already owned by the city, no important commercial development was planned, and its proximity to the noisome South End marshes could be, it was hoped, ignored.

A bequest from the estate of Elisha Goodnow helped set the wheels in motion. He established a farm in Watertown that served the Boston produce market. In 1821 he had been treated by Dr. Warren for a urinary calculus, who removed the stone (without anesthesia!) by a perineal approach. While in the hospital he was seen by James Jackson and Walter Channing, Dean of Harvard Medical School. The medical school was located from 1847 to 1883 on North Grove Street, adjacent to the Charles River and MGH. Goodnow never forgot the meticulous personal care furnished by these prominent physicians and when he died in 1851 bequeathed the sum of \$16,500 (equivalent to about \$400,000 today) toward the construction of a new hospital in the city.

A competition was held for plans for the new hospital and was won by Gridley F. Bryant, a prominent architect who had planned a renovation of City Hall and had designed the Charles Street Jail (now converted into a high end hotel). His design served two purposes. The first was to design a hospital in the currently popular pavilions plan, which had been utilized successfully in Paris, at Johns Hopkins and across town at the Peter Bent Brigham Hospital. The plan was supposed to cut down on crowding and contamination. It was also inconvenient wherever used. His second purpose was to design an attractive set of buildings in the popular Renaissance style to pacify the uneasy neighbors in the adjacent wards and squares. The plan called for a central building with a dome reminiscent of Duomo of Florence and two buildings to either side, one surgical, one medical. The three buildings were linked by an open colonnade, which had the peculiar result that surgical patients had to be wheeled outdoors from the ward to the central administration building, in which the operating suite was located. Two years later another building was added to the complex for the treatment of infectious diseases.

Work was begun in 1861 and the hospital was dedicated in 1864. The first patient was admitted in June 1, 1864. The total cost was \$2,766,579 between July 1861 and July 1905. The majority of the financial burden fell on the city itself. The bed capacity in the first year was 208 and rose steadily to 292 in 1868, 325 in 1876, and 520 in 1890. The bed capacity was increased in the summer months during the nineteenth century by the use of a tent service on the grounds of the hospital. The original buildings featured natural light and heat from a very large boiler behind the administration building, which produced hot air, travelling through ducts to the wards. Lighting fixtures can be seen in the contemporaneous photographs of the wards, but the entire City Hospital was not electrified until 1886. As the city expanded westward, and the Shawmut peninsula was expanded by landfill, the hospital occupied a central position in relation to the residential areas of the city.

The hospital seems to have had no trouble in recruiting a number of well-qualified physicians. Most were Harvard Medical School graduates. The first couple of years, since the Civil War, drained away medical men as well as millions of others, appointments were often made during medical school years. Physicians were hired as visiting physicians, assistant physicians (usually for 6 months, probably equivalent to the role of registrar in the British system), interns, and of course chiefs of the different services, medical and surgical.

The original staff totaled 18 members, 6 of whom were consulting physicians or surgeons. There were 4 interns, one for each service. As the hospital census grew, more house staff were added. By 1874, 10 years after opening, each service had a junior and senior resident. In 1897, a fourth house staff member was added to each service, and the term of appointment was lengthened from 18 months to 24 months.

A feature of the house staff experience, which lasted until the 1920s, was the gong. This giant device was rung when a patient arrived at the hospital in respiratory distress, needing intubation or tracheostomy. All house officers were supposed to come running when the gong was rung!

The Early Neurological Service

The first recognition of the specialty of neurology came with the appointment of Samuel Gilbert Webber as “Electrician” some ten years after the opening of the hospital. The title reflected the use of a faradic battery for treatment of patients, which in turn had been stimulated by the publication of Duchenne’s work on electrical treatment a few years before. A parallel appointment had been made at MGH, where James Jackson Putnam was given the same title. In 1877, an outpatient department for diseases of the nervous system was established. For a long time, the department suffered from a lack of equipment and space. For the first decade of the hospital, the inpatient neurological service was considered to be part of the general medicine and neurological patients were admitted to the “Nervous and Renal” service.

In 1886, the “Nervous and Renal” service was abolished with the loss of inpatient neurology beds. Over the next 15 years, the neurological service, although stripped of its inpatient component, steadily expanded. By 1904, the neurological service occupied one wing, with 7 rooms of the new outpatient building. The original faradic battery had been retired after 20 years of use, and replaced by new galvanic and faradic instruments and volunteers from the gymnastic schools in the city were administering massage therapy. The teaching program, which enrolled students from Tufts and Harvard, also taught those whose career goals were neurologists or alienists (as psychiatrists employed in state institutions were then called).

Staff physicians in neurology during the years 1880-1925 included:

Samuel Gilbert Weber was a descendent of the Mayflower Pilgrims. During the Civil War he served as Assistant Surgeon for the Navy and was stationed off the coast of South Carolina on the iron-clad monitor *The Nahant*. He was one of four physicians who founded the Children’s Hospital. His interest in the work of Duchenne led him to establishing electrical stimulation as a form of therapy during the early years at BCH.

James Koop Knapp was a graduate of Harvard Medical School. He was scholar of Latin and Greek, fluent in German, Spanish, Italian and French and extremely well-read. He translated Strumpell’s *Textbook of Medicine* and was widely published in neurology and psychiatry. He served as president of the American Neurological Association. In his clinic, he was a popular teacher of neurology and his students included Walter Cannon.

Morton Prince was the product of a prominent Boston family (his father was elected mayor in 1875). He graduated from Harvard Medical School where he developed an interest in neurological and psychological disorders. After graduation he continued his studies in Europe in Vienna, Strasboug and Paris (with Charcot). His 1906 book *The Dissociation of Personality* which was a case study of a woman with multiple personalities, was widely read and was the basis for 500 plays! He founded and edited the *Journal of Abnormal Psychology*. In addition to his service at BCH he carried on an active private practice on Beacon Street. In 1911 he was described by Freud in letter to Jung as “an arrogant ass who would be conspicuous even in our menagerie.” In 1921 he wrote a critique of psychoanalysis published in *Archives of Neurology and Psychiatry* where he broke with Freudian dogma.

Abraham Myerson, who was primarily a psychiatrist, became chief of the BCH Neurology Department in 1924 and served until the arrival of Stanley Cobb. He was described as a generous and valuable contributor to the clinical service.

Birth of the Neurological Unit at BCH

In 1925 the General Education Board of the Rockefeller Foundation entered into negotiations with Harvard Medical School and BCH to establish a unit dedicated to the treatment of neurological disorders. Stanley Cobb, who had just returned from studying neurology in Europe, was selected to head the new Neurological Unit. The Unit was to occupy space in the newly planned Medical Building and House Officers Residence. 40 beds were assigned to the Neurology Service under the joint direction of Drs. Myerson and Cobb. Laboratories were created for clinical research and animal experimentation and offices were provided for full-time faculty. Over a 5 year period a

faculty was assembled that included Frank-Fremont Smith, who organized a laboratory for the study of cerebrospinal fluid, and William G. Lennox, who ran a laboratory for the study of epilepsy. Donald Munro was asked to organize a Neurosurgery specialty program. Tracy Putnam was recruited from the Brigham Hospital and directed neurosurgical research and laboratories. Neurology and Neurosurgery patients were admitted to a common ward to enhance cooperation between the services. William Herman, whose main interest was psychiatry, made weekly visits and assisted Lennox in his Epilepsy laboratory. Raymond Morrison who had trained with Dr. Meyerson and had additional studies in Europe, came to head the Neuropathology group.

Miner H. Evans ran the "Nerve Out-Patient Department" which was considered essential for supplying cases for admission to the Unit and for outpatient follow up after discharge. He was joined by a team of 5 neurologists in running the clinic and neurology housestaff were expected to see outpatients on at least a weekly basis. A weekly case conference was conducted by a senior visiting physician to discuss interesting or challenging patients.

In 1930 the Medical Building was opened and the Neurological Unit was assigned floors 7 through 10. The seventh floor contained the ward which accommodated 32 male beds, some with private toilets for well to do patients. According to Stanley Cobb "it is the policy of the Neurological Unit to accept neurological patients of all sorts, from any walk of life, and to discriminate against them neither because they are rich nor because they are poor." The eighth floor contained operation rooms (designed by Drs. Munroe and Putnam), x-ray equipment and 24 female beds. The ninth floor contained laboratories for the study of CSF, metabolic research in epilepsy, and cerebral circulation as well as neurosurgical laboratories. Also on the ninth floor were the library, conference room, ophthalmology suite and pathology laboratory. The tenth floor (which was the roof) contained animal cages and animal operating room/laboratory.

The goals of the Unit were three-fold: 1) research into neurological disorders with ongoing investigations into multiple sclerosis, epilepsy, hydrocephalus and nervous diseases caused by vitamin deficiencies 2) application of these insights into providing treatments of patients and 3) providing education of medical students and house staff in neurology and neurosurgery. The staff initially consisted of 14 faculty and house officers, each with a one year appointment.

As described by the founding fathers of the Unit, Stanley Cobb and Donald Munro, "the spirit of cooperative effort, which almost of necessity arises in such a unit, permeates the staff from house officers to senior visiting men, keeps them up-to-date, stimulates the study, as well as the practical application of their profession, and thus improves the care of the patient".

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