

# American Medical Students in 19th-Century Europe

JEREMY HUGH BARON, D.M., F.R.C.P., F.R.C.P.G., F.R.C.S.

## Abstract

Many Americans studied medicine in Britain in the 18th century, but the major influx to Europe began after 1815, when the French Revolution's reforms of health care and medical teaching had reached their zenith. Americans were well trained in France (and later in Germany) in medicine, surgery, pathology and clinical science, and brought these skills back to the US. Their training had been in countries with government-run, relatively egalitarian health care systems. On their return, they did not seek to transplant such a system to the US, but they did introduce European medical science and medical techniques, and something of the European medical education system.

**Key Words:** American medical students, Europe, Britain, France, Germany, medical schools.

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THE FRENCH REVOLUTION OF 1789 led to major advances in French health care and education (1–11). After the Napoleonic Wars ended, in 1815, American doctors began flocking to France. I discuss earlier medical education in the US, what Americans found in Paris, and the changes they made to American health care when they returned home.

## American Medical Education

The first detailed account that I have found of a 17th-century American medical education is that of George Starkey, born in 1627 in Bermuda, and soon an expert on its fauna (12, 13). He distrusted the tradition of honeybees “coming out of dead kine [cows], fermented with the falling dew,” because his experiments did not produce spontaneous generation. At 16 he went to Harvard, where the curriculum was slightly different from today's. His first year included logic, physics, Greek and Hebrew, history, botany, rhetoric and divinity. In year two he studied ethics, politics, Greek, Aramaic, rhetoric and divinity. In year three he took arithmetic, geometry, astronomy, Syriac (a dialect of Aramaic) and still more rhetoric and divinity. Harvard did not teach chemistry, and this he learned from Governor

John Winthrop. By age 20, he had his BA and MA and was practicing medicine as well as reading Paracelsus and van Helmont, to experiment with alchemy. He then followed both vocations in England, only to die from plague caught from a patient.

In the 18th century, Americans began going to Europe to study medicine, at first to England and Scotland, and later to France. Philadelphia was then the third largest city in the British Empire; only London and Dublin were larger. Its hospitals, such as the General Hospital of 1732 and the Pennsylvania Hospital of 1751, are almost as old as those in Britain, with the two exceptions of medieval St. Bartholomew's and St. Thomas's. Even its medical publisher, Lea and Febiger, dates back to 1785. However, there was still no medical school in the US.

John Morgan therefore sailed from Philadelphia in 1760 to study in London with the brothers John and William Hunter, and then in Edinburgh with Robert Whytt, who had himself been trained by Boerhaave in Leyden (the Netherlands). Finally, Morgan went to Padua (Italy) to learn pathology from Morgagni, before returning home to start a medical faculty at Philadelphia, aiming at world standards, just as Edinburgh had based itself on the Leyden system.

Eighteenth-century health care in Philadelphia and New York followed the British model of municipal hospitals for the indigent, together with voluntary secular charitable teaching hospitals (which also charged those who could pay). Public dispensaries coped with those not needing admission, seeing them for free either in their own homes or at the facility, as outpatients. These institutions were staffed on a voluntary basis by doctors who earned their living from their moneyed patients on a fee-per-service basis.

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From the Dr. Henry D. Janowitz Division of Gastroenterology, Mount Sinai School of Medicine, New York, NY.

Address all correspondence to Dr. J.H. Baron, Division of Gastroenterology, Box 1069, Mount Sinai School of Medicine, One East 100th Street, New York, NY 10029-6574; e-mail: hughbaron@aol.com

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## French Medical Education

As early as 1790, the French Revolution initiated a program of the Duke of Rochefoucauld-Liaincourt, which specified that health was a human right and “Public welfare owes the ailing poor assistance that is prompt, free, assured and complete” (4). A major stimulus was Enlightenment idealism, and the Revolutionary slogan *liberté, égalité, fraternité* derived from that idealism.

In 1790, all hospitals became properties of the state, and the old Faculty of Medicine and its medical licensing system were abolished. In 1792 the universities and medical schools were closed. Then came the anti-revolutionary wars, with heavy casualties; in particular, 900 Army medical officers were killed in battles between 1792 and 1794. In December 1794, French hospitals and universities were reorganized and teaching re-started at three old medical schools, and later at five new military medical schools, to educate medical officers for the army and navy.

Teaching was mostly in French rather than the traditional Latin, and by full-time, state-salaried professors, appointed by competition after public advertisement. They received a percentage of the students’ fees and 5,000 francs per year (then about £250 or US\$25, and perhaps equivalent to \$20,000 today). Fees were low, at 400 francs over the four years. Students did not have to attend lectures, but they did have to pass five public exams (another 500 francs) in subjects such as hygiene and legal medicine, and write a dissertation to be defended in public. Each year there were 550 national scholarships for the three schools, 300 in Paris, 150 in Montpellier and 100 in Strasbourg. The scholarship students (*élèves de la patrie*) were paid their fees and travel expenses, and a stipend, but they were still at the poverty level, often with wooden shoes. However, student numbers increased rapidly, and by 1825 there were 2,000, that is 300 per year. These medical schools also trained pharmacists. And unlike the situation elsewhere in Europe and in the US, surgeons were given professional status equal to that of physicians.

Between 1806 and 1829, 18 provincial hospitals were recognized as secondary schools, training only pharmacists, who after eight years in practice could be appointed *officiers de santé*, the equivalent of the British apothecary as primary care physician. Paris was allotted a national school for training midwives in a totally resident 12-month program, if necessary paid for by their districts or hospitals.

A 1793 decree set up a salaried eleven-member General Board that met twice a week to advise the Minister of the Interior’s salaried five-member commission to execute orders to the metropolitan

central store of drugs and materia medica, as well as to the hospitals. Each hospital was run by a male and female inspector, compulsorily resident and with absolute internal authority. There were many hospitals, both specialized and general, such as the Hôtel-Dieu with 1,500–2,000 beds and not more than three patients per bed, instead of the pre-revolutionary three to six, or the target of “one-bed, one-patient” decreed by the Convention in 1793. Patients were admitted on receiving days, or by a daily decision of a central committee of two physicians and two surgeons, who could instead instruct a district charity to care for the patient at home. Every ten days the *Gazette de Santé* published numerical data of the list of registered diseases in Paris. Postgraduate positions were allotted by competitive examination, and in 1803 a national licensing system was restarted and run regionally.

In 1815 the *London Medical Repository* contrasted the French and British medical systems as follows: “There are [in France] no hospitals supported entirely by voluntary contributions: a striking contrast to what is the case in London. Indeed it is a characteristic of the two countries, that in France the government meddles in and is connected with every establishment of public utility, whereas in England it neither meddles in, nor indeed cares little about any thing of the kind.” (1).

Baron Dupuytren, at the Hôtel-Dieu from 6 to 9 AM, taught on a ward round of his 200 or more patients, and then lectured, performed surgery and viewed necropsies. In the afternoon he saw outpatients (perhaps 10,000 per year), followed at 6 PM by a ward round of those he had operated on. The approximately 1,200 students who attended his lectures were not allowed to speak to him unless he spoke to them first (11).

Another surgeon at the Hôtel-Dieu gave “as much attention to minor cases as to some important cases, but he did not run through the wards as if he was thinking all the time of his patients who were expecting him abroad, and of whom he was expecting a good fee” (1). “The French physicians and surgeons display a degree of attention and zeal in the execution of their duties truly exemplary.... The public professional duties are ever the primary consideration, for which the trifling salary they receive is a pitiful remuneration: while in the London hospitals, it is too evident that public appointments are generally considered but the stepping-stones to practice and private emolument” (1).

The Hôtel-Dieu had 53,000 admissions annually, producing 24,000 corpses each year, sufficient for dissection, whether for anatomical study, for necropsy of patients the student had studied alive, or for future surgeons to practice their surgery.

### Americans in France

Unlike Starkey's training at Harvard, in the 19th century almost all American medical teaching was narrowly practical. Seeking a better balance of theory and practice, thousands of American medical students came to study in Europe. At first they came to France, where the science and medicine were the best in the world, fees were minimal and living in Paris was both cheap and pleasurable. In the 1820s, 105 Americans came to study Parisian medicine, 222 in the 1830s, 128 in the 1840s and 279 in the 1850s. They returned home when they had perfected their normal and pathological anatomy and their clinical and operative skills. What did they learn, and how did their time in France affect their clinical practice in the US?

### French Medicine

French medicine in the first half of the 19th century was based on three principles: physical examination (especially using Laennec's stethoscope), post mortem examination, and statistics of hospital diagnoses and results, as well as public health data. American students in Paris certainly became better clinical diagnosticians. The new teaching was clinically based; from their first day, students worked in the hospital wards and morgues. *Peu lire, beaucoup voir, beaucoup faire* was the aphorism: Read little, see much, do much. Some Americans in Paris would have learned evidence-based clinical logic from Pierre Louis's methodical case recording and statistical approach, which revealed that bleeding did not help patients and that purgatives did not help patients with gastroenteritis. Yet in spite of Louis, no pathological research on his model took root in the US, where in the absence of routine autopsies by specialist pathologists or the patients' physicians, post-mortem rates were low by European standards. Eventually didactic reading returned to French medicine. By the 1830s, 32 medical and scientific journals were being published and there were soon four great dictionaries: *Dictionnaire des Sciences Médicales* in 60 volumes (1812–1822), *Dictionnaire de Médecine* in 30 volumes (1832–1846), *Dictionnaire de Médecine et Chirurgie Pratique* in 42 volumes (1829–1836) and *Dictionnaire Encyclopédique des Sciences Médicales* in 100 volumes (1864–1889). Over 300 French medical books were published in the 1830s.

In the 1830s, some American hospitals began the university-level teaching of medicine by Paris-trained doctors, who then went on to translate into English the new, authoritative French textbooks.

For example, in 1832 Henry Ingersoll Bowditch helped Pierre Louis to found the *Société Médicale d'Observation*, where there was critical discussion of a patient's clinical progress and necropsy (14, 15). Returning home, Bowditch was appointed to Harvard, where in 1834 he started the (Boston) Society of Medical Observation, which met twice a week for case presentations. These were the ancestors of that great American teaching model, the clinico-pathological-conference, CPC, later regularly published verbatim in the *New England Journal of Medicine*. Only a few Americans actually absorbed French basic and clinical science, but some of those few did return home to start medical departments and laboratories.

### German Medicine

Between 1834 and 1892, about 150 new American medical schools were founded, most of relatively poor quality. Few efforts were made by the French-trained physicians to establish high-quality medical schools according to the French model. But then came the critical change in American postgraduate medicine: Germany and Austria replaced France as destinations for American medical students and physicians (16). Fewer than 50 went to Germany or Austria before 1850, but between the Civil War and the First World War, nearly 15,000 went: 10,000 to Vienna, 3,000 to Berlin, 1,500 to other German-speaking universities, and 200 to Switzerland. German medicine offered *Lehrfreiheit*, freedom of teaching, and *Lernfreiheit*, freedom of learning, with salaried full-time professors, specialties and subspecialties, and in effect created medical laboratory science.

By the end of the nineteenth century, university hospitals such as Johns Hopkins in Baltimore were created, with full-time salaried professors who were also chiefs of service. The model of German clinical science and university (undergraduate and postgraduate) medical education thus had a decisive effect on the structure of American medical education.

### Health Care and the Social System

There were, however, limits to the innovations that French- or German-trained American physicians either could or perhaps wished to introduce to the US, where health care was, and still is, fee-per-service and not a general entitlement. Specifically, they did not seek to redirect the American system in the direction of the government-subsidized, government-controlled systems then and now prevalent in Europe. Americans' historical reluctance to surrender too much power and control

to their government was probably a major factor here. Mark Twain expressed this attitude eloquently in 1867 (17): “The mania for giving the Government power to meddle with the private affairs of cities or citizens is likely to cause endless trouble, through the rivalry of schools and creeds that are anxious to obtain official recognition, and there is great danger that our people will lose that independence of thought and action which is the cause of much of our greatness, and sink unto the helplessness of the Frenchman or German who expects his government to feed him when hungry, clothe him when naked, to prescribe when his child may be born and when he may die, and, in fine, to regulate every act of humanity from the cradle to the tomb, including the manner in which he may seek future admission to paradise.”

Mark Twain’s viewpoint has prevailed to at least some extent, so that the US remains the only developed country in which health care is not a universal human right and which therefore does not provide government-subsidized health care for all. Yet here too, European influence has made some headway, with the 20th century bringing some government-funded health care programs: for the indigent, the elderly, the uninsured, etc.

### Free Medical Treatment in the US

There are examples in the US of free medical treatment. The Medicaid program provides free medical coverage for those with income at or below the poverty level. Prisoners receive free health care (18), even if a heart transplant is indicated (19). And patients with chronic renal failure receive free treatment, even for dialysis and transplant, since Congress passed a Social Security amendment in 1972 (20).

### Conclusion

I have tried to summarize the development in France after the 1789 Revolution of a centralized national health service with government-sponsored training of doctors, nurses, midwives and pharmacists, as well as government-run university teaching. I have explained how American doctors flocked to Paris, and later to Austria and Germany, to learn from their programs, and returned home to introduce much of what they had learned at European schools and hospitals. Yet the American health care system remained primarily American, rather than European, in spirit, and a

fully subsidized, government-controlled system was not imported.

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