Institutional Profile

The Department of Surgery at NewYork–Presbyterian Hospital/Weill Cornell Medical Center: At the Forefront of Surgical Innovation

FABRIZIO MICHELASSI, M.D., THOMAS J. FAHEY III, M.D.

From the Department of Surgery, NewYork–Presbyterian Hospital/Weill Cornell Medical Center, New York, NY

THE HISTORY OF surgery at The New York Hospital, the second oldest hospital in the United States, reflects the evolution of surgery in America and is marked by some of the most extraordinary achievements in medicine. The New York Hospital was the cradle of early surgical developments and instruction in America, earning a worldwide reputation for excellence and innovation. With the affiliation agreement between New York Hospital and Cornell University almost 100 years ago, the Department of Surgery developed into an academic unit that contributed clinical care and education to countless patients, students, and residents and generated innovations for the benefit of the surgical patient. With the more recent merger of New York Hospital and Presbyterian Hospital into a new entity, NewYork–Presbyterian Hospital, our Department is poised to continue making additional important contributions to the advancement of the art and science of surgery by building on our rich legacy of surgical care, teaching, and innovations.

History

In 1771, King George III granted a royal charter to establish The Society for The New York Hospital.[1] Construction of the hospital was delayed by the start of the Revolutionary War. The Hospital finally opened in 1791 (Fig. 1). Wright Post, one of the first surgeons appointed to the hospital in 1792, was the first in America to ligate the femoral artery for the treatment of a popliteal aneurysm in 1796, the common carotid artery in 1813, and the subclavian artery for the treatment of a brachial artery aneurysm in 1817. He developed state-of-the-art surgical techniques for aneurysms, paving the road for the innovative work of Dr. Valentine Mott, a pioneer in vascular surgery, who achieved the astonishing record of treating 138 aneurysms by ligation, including one of the innominate artery in 1818, the first time in the history of surgery.[1] In November 1846, only 1 month after Dr. W. T. G. Morton demonstrated the use of ether anesthesia in Boston, Dr. John Rodgers used ether anesthesia during the treatment of a perirectal abscess at The New York Hospital.

The building where The New York Hospital was originally housed became inadequate to care for the many patients it attracted by the second half of the 19th century and a new hospital building was completed in 1877 (Fig. 2). In 1878, Lewis Atterbury Stimson performed the first public demonstration of an antiseptic operation in the United States. Stimson also introduced the molded plaster splint for the setting of fractures. Dr. William Stuart Halsted, considered by most to be the

FIG. 1. First New York Hospital, circa 1841.

The mission of the Department of Surgery at the NewYork–Presbyterian Hospital/Weill Cornell Medical Center is to provide compassionate and outstanding patient care; to discover new medical knowledge; to communicate knowledge through education; and to nurture and sustain a community of scholars.

Editor's Note: Cornell is one of the pre-eminent hospitals in the world. Its Chairman, Dr. Michelassi, is a renowned gastrointestinal surgeon. Dr. Fahey is a member of Cornell's prestigious faculty.

Address correspondence and reprint requests to Fabrizio Michelassi, M.D., Department of Surgery, NewYork–Presbyterian Hospital/Weill Cornell Medical Center, 525 E. 68th Street, Box 129, New York, NY 10065. E-mail: fam2006@med.cornell.edu.

founder of modern surgery and surgical training, and one of the most influential surgeons in America, began his own medical training at The New York Hospital in 1878. Under the mentorship of Dr. Henry Sands, an attending surgeon, his interests in surgery and anatomy were encouraged. In 1883, Dr. Halsted was appointed Visiting Surgeon at The New York Hospital, where he introduced the first bedside patient chart.[2]

In 1898, Dr. Stimson wrote the charter of a new medical school, the Cornell University Medical College. Along with the medical school's first dean, William Polk, Stimson was instrumental in obtaining a gift of $1.5 million from the well-known philanthropist Colonel Oliver Payne to open the new medical college along First Avenue, between 27th and 28th Streets in Manhattan (Fig. 3). Stimson expanded the traditional surgical curriculum by adding bedside training sessions and laboratory research to the didactic lectures and, by 1908, residents would, for the first time in history, require a college education as a qualification for admission. Lewis Atterbury Stimson (Fig. 4) was named the first Chairman of the Department of Surgery at Cornell University Medical College, a position he held until 1917. It was during his tenure as Chairman that an agreement was signed in 1912 between The New York Hospital and Cornell University, which led to the building and opening of The New York Hospital and Cornell University Medical College at their present location on the Upper East Side of Manhattan in 1932 (Fig. 5).

Stimson was succeeded by Charles Gibson, who remained as Chairman until 1931. In that same year, The New York Hospital Medical Board determined that all the clinical services should have residencies. In 1932, George J. Heuer (Fig. 6) joined The New York Hospital as Professor and Chairman of Surgery. Heuer was a formidable surgeon with a wealth of experience accrued during his service in World War I including expertise in neurosurgery, thoracic surgery, and general surgery. In addition, having studied under Halsted, he was very familiar with the halstedian residency model. As such, he established a modern surgical training program at The New York Hospital. For the first time, resident training lasted 6 or 7 years, and residents were given both operative and administrative

FIG. 2. Second New York Hospital building, circa 1921.

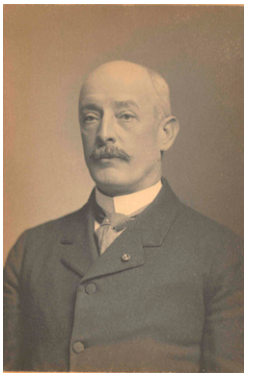

FIG. 4. Lewis Atterbury Stimson.

FIG. 3. First Cornell University Medical College Building, circa 1898.

FIG. 5. New York Hospital/Cornell Medical Center, circa 1930.

FIG. 6. George Heuer.

responsibilities and encouraged to get involved in research and publish their findings.[2]

Heuer trained many future leaders, including Bronson Ray and Victor Marshall, who became the chiefs of neurosurgery and urology, respectively; Herbert Conway, chief of plastic surgery, who trained Joseph Murray, Nobel Prize winner for medicine in 1990; and Preston Wade, a leading trauma surgeon and pioneer in accident prevention. Dr. Wade treated many of the burn victims of the Hindenburg disaster, designed the emergency room at New York Hospital, which became the prototype of those recommended by the American College of Surgeons, and was instrumental in convincing Congress to pass a law requiring the mandatory installment of seatbelts in cars. Heuer retired after 16 years in 1947 after training more than 100 surgeons; he was one of the founders of the American Board of Surgery.[3]

In 1947, Frank Glenn became Chairman of Surgery and the first Lewis Atterbury Stimson Professor of Surgery, a chair endowed by Stimson's daughter.[2] The 1950s were marked by the development of cardiovascular surgery, and New York Hospital remained at the forefront with Dr. Glenn, a recognized expert in biliary and cardiovascular surgery. The development of cardiovascular surgery continued at New York Hospital with Dr. C. Walton Lillehei, who succeeded Dr. Glenn in 1967. Widely regarded as one of the fathers of cardiac surgery, he trained Norman Shumway and Christiaan Barnard, early pioneers of cardiac transplantations.

The history of transplantation at New York Hospital is rich and goes back to the beginning of the discipline. The first kidney transplant was performed by Dr. Edward Goldsmith in 1963. Dr. Lillehei performed the hospital's first cardiac transplant in 1968. A year later, the first interhospital and largest multitransplant operation in the world involving six organs was performed at our hospital.[2] In 1996, the first pancreas transplant program in the tristate area was established in our hospital. In 2004, our surgeons were the first in the tristate area to perform minimally invasive islet cell transplants to cure Type I diabetes.

Lillehei was succeeded by Dr. Paul Ebert who became the President of the American College of Surgeons. In 1975, Dr. G. Tom Shires (Fig. 7) became the next Lewis Atterbury Stimson Professor of Surgery. Shires, a world-renowned pioneer in shock and trauma research, also served as President of the American College of Surgeons and President of the American Surgical Association. In 1976, under Shire's leadership, the hospital formed the first comprehensive burn center in the New York region. Today the William Randolph Hearst Burn Center is one of the largest and busiest in the nation. It was also Dr. Shires who morphed the uncoordinated system of independent ambulance services into the modern Emergency Medical Services for New York City.

Dr. John M. Daly succeeded Dr. Shires in 1993. Under his leadership, the Department of Surgery, which had grown substantially, underwent an administrative reorganization with the creation of sections under the umbrella of general surgery (breast surgery, burn surgery, endocrine surgery, surgical oncology) and subspecialty divisions (neurosurgery, oral and maxillofacial surgery, pediatric surgery, plastic surgery, transplantation, trauma and critical care and vascular surgery). Neurosurgery eventually became a separate department in 2000, following cardiothoracic surgery and urology, which had become their own independent administrative units in 1993.

Present

In 1996, David Skinner, an internationally renowned esophageal surgeon who had become the President of New York Hospital in 1987, expanded the hospital with a new 880-bed pavilion built over the FDR Drive

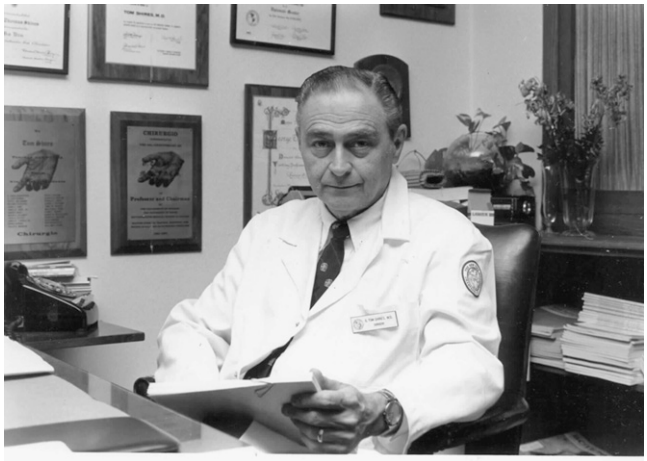

FIG. 7. Tom Shires.

in a most technological advanced engineering feat. Since then, an additional floor with 48 beds has been added to the initial construction (Fig. 8). In 1998, Dr. Skinner spearheaded the merger between New York Hospital and the Presbyterian Hospital of New York into one entity named NewYork–Presbyterian Hospital.

Simultaneously, the medical college started a new course of expansion under the leadership of Dean Antonio M. Gotto and the leadership of Mr. Sanford Weill, Chairman of the Board of Overseers. The medical college was renamed the Weill Cornell Medical College as a result of the transforming generosity of Joan and Sandi Weill, which led to the building of a modern, state-of-the art outpatient facility. With contributions from the hospital and the medical college, the medical center is now known as NewYork–Presbyterian Hospital/Weill Cornell Medical Center.

In 2001, Dr. Thomas Fahey III became the Director of the General Surgery Program, a responsibility that he continues to discharge with competence and passion. In 2004, Dr. Fabrizio Michelassi was appointed the Lewis Atterbury Stimson Professor and Chair of Surgery at Weill Cornell Medical College and Surgeon-in-Chief at NewYork–Presbyterian Hospital/ Weill Cornell Medical Center. In addition, the Department has expanded with appropriate recruitments in the areas of colorectal surgery and minimally invasive and bariatric surgery. These two areas of expertise have been recognized as two separate sections in general surgery.

The last 5 years have been punctuated by additional innovations and accomplishments. As already mentioned, the Department of Surgery became the first in the tristate area to perform minimally invasive islet cell transplants to cure Type I diabetes in 2004. In 2006, the Bariatric Surgery Center was recognized as Level I by the American College of Surgeons; in the same year, the Burn Center was recognized as a comprehensive adult and pediatric burn center by the American Burn Association. In 2007, we established the first Diabetes Surgery Center at Weill Cornell Medical College and created a new section in general surgery called Gastrointestinal Metabolic Surgery, advancing diabetes surgery as an entirely new surgical field to bring Type 2 diabetes into long-term remission for the first time through surgical therapy.

As a result of this expansion, the Department of Surgery today counts over 40 full-time faculty members and 75 residents and fellows (Fig. 9). Most of our faculty members are nationally and internationally renowned in their respective fields and provide our patients with the highest quality, personalized care using state-of-the-art technologies and, when feasible, minimally invasive techniques to achieve the most successful surgical outcomes.

General Surgery Residency Program

Our general surgery residency program trains exceptionally qualified surgeons who have the skills and ability to function at the highest level and provide state-of-the-art, compassionate patient care. The program is under the supervision of the Chairman of the Department, the Program Director, and a large full-time and volunteer faculty. The faculty believes their mission is not only to produce technically superb surgeons but, in addition, to produce surgeons well

FIG. 8. NewYork–Presbyterian Hospital/Weill Cornell Medical Center in 2008. Since then, an additional floor has been added to the original construction.

NewYork-Presbyterian Hospital
Department of Surgery 2008

FIG. 9. Department of Surgery faculty and residents, 2008. Dr. Fabrizio Michelassi, Lewis Atterbury Stimson Professor and Chairman of the Department of Surgery, and Dr. Thomas Fahey, Professor of Surgery and Director of the General Surgery program, are seated in the middle of the front row. Archival photographs courtesy of the Medical Center Archives of NewYork–Presbyterian/Weill Cornell.

grounded in the basic science of surgery and with clinical judgment to render complete care to the surgical patient. A broad exposure to all areas of general surgery is provided to ensure development of adequate clinical knowledge.

NewYork–Presbyterian Hospital/Weill Cornell Medical Center serves as the primary teaching facility, offering expertise in primary, secondary, and tertiary surgical medicine. Additional experience in surgical oncology is obtained at Memorial Sloan-Kettering Cancer Center. Jamaica Hospital provides experience in acute trauma and elective general surgery in an underserved urban environment, whereas New York Downtown provides strong experience in community elective surgery. Didactic instruction plays an integral part in the training program and is provided through both departmental and interdepartmental teaching conferences.

The General Surgery Program at NewYork–Presbyterian Hospital/Weill Cornell Medical Center is a 5-year program and accepts 8 categorical and 18 preliminary surgical residents each year. The program is divided into three clinical stages of training.

The Postgraduate 1 and 2 Years

The emphasis during the junior surgical residency is the primary care of the surgical patient. The junior surgical residents are directly responsible for preoperative and postoperative care, with progressive operative responsibilities. Patient care is supervised by the more senior resident staff and the attending staff, which allows the junior surgical resident to take on the responsibilities of primary patient care in an atmosphere that fosters constant learning from more experienced surgical personnel. The junior resident becomes familiar with physiological and metabolic problems that face each surgical patient. Significant operative experience is obtained under the direct supervision of senior residents and attending surgeons. During the first year of training, resident rotations are 1 or 2 months long. The rotations include general surgery, surgical oncology, trauma surgery, vascular surgery, cardiothoracic surgery, and care of the burned patient with significant critical care/intensive care unit experience. Elective experience is available to complement the basic surgical training with exposure to plastic, orthopedic, urologic, otolaryngologic and neurologic surgery. During the second year, the resident continues preoperative and postoperative care and, in addition, takes on even more operative responsibilities. Additional experience in pediatric and transplantation surgery is gained during the second year. Rotations through the emergency room provide the junior resident with the opportunity to evaluate surgical patients with acute problems and gain further experience with acute care and outpatient surgical procedures. The hallmark of the junior surgical residents' training is a command of basic and intensive care of the surgical patient. Residents in the preliminary track are integrated fully into the junior surgical residency with variations in their rotation schedules to complement their area of concentration. Residents' on-call is generally limited in the first year because there is a night call rotation.

The Postgraduate 3 Year

The focus of experiences gained during this year is on the development of advanced surgical judgment in and out of the operating room. The transition from junior resident to Chief Resident is developed during this year as the senior resident assumes major responsibility for the day-to-day activities of the surgical inpatients, directly supervising the junior resident staff. Advanced elective and emergency surgery is performed by the third-year resident on the general and trauma services under the supervision of the attending surgical staff. This year plays a crucial role in the evolution of mature surgical judgment and technique.

The Postgraduate 4 and 5 Years

The Chief Resident hones his or her surgical judgment and skill during these years, but also assumes many other primary responsibilities. These include the supervision of junior and senior surgical residents in the overall care of surgical patients and the direct instruction of medical students and physician assistants assigned to their services. In the operating room, the Chief Resident becomes skilled with most general surgical procedures, gaining experience in the more complex surgical procedures, and is involved in the operative teaching of junior residents. The fourth-year resident serves as the Chief Resident on the pediatric and transplantation services at NewYork–Presbyterian Hospital as well as the general and trauma services at Jamaica Hospital. The fourth-year resident also serves as the primary operating fellow on the breast, head and neck, and thoracic surgical services at Memorial Sloan-Kettering Cancer Center. During the fifth year, the Chief Resident role continues on the general, vascular and trauma services at NewYork–Presbyterian Hospital. The fifth-year resident also serves as the primary operating fellow on the gastric, mixed tumor, and colorectal surgical services at Memorial Sloan-Kettering Cancer Center. Advanced elective time is available during the fourth year in gastrointestinal endoscopy, plastic surgery, and cardiac surgery. The Chairman of the Department of Surgery and the

Program Director designate an Administrative Chief Resident from the group of fifth-year Chief Residents. The Administrative Chief Resident is responsible for assisting the Chairman and the Program Director in the overall administration of the residency.

Although not mandatory, many residents select to interrupt their 5-year clinical training and spend 2 to 3 years in a basic science laboratory setting; the innumerable basic science and translational research laboratories in the Departments of Surgery at Weill Cornell Medical Center and Memorial Sloan-Kettering Cancer Center offer adequate variety for residents to choose from. As a measure of the success of this research exposure, in the academic year 2007–2008, residents engaged in research delivered more than 40 presentations and published 68 journal articles and 6 book chapters.

Outcome

The Surgical Residency Program at NewYork–Presbyterian Hospital/Weill Cornell Medical Center prides itself on training future academic surgeons. Graduates of the general surgery residency almost always proceed on to subspecialty fellowships (Table 1), spanning the entire gamut of general surgery subspecialties (Table 2). Ultimately, the majority of our graduates take full-time faculty positions in academic medical centers around the country.

TABLE 1. *Career Paths of Graduates of the NewYork–Presbyterian/Weill Cornell General Surgery Residency, 2001–2008*

Graduating residents	57
Academic appointments	2
Private practice	2
U.S. Forces	1
Subspecialty fellowship	52

TABLE 2. *Fellowship Selection of NewYork–Presbyterian/Weill Cornell General Surgery Residents, 2001–2008*

Breast oncology	4
Cardiothoracic	8
Colorectal	6
Endocrine	1
Minimal access surgery	5
Pediatric	2
Plastic and Reconstructive	8
Surgical Oncology	4
Thoracic	7
Transplant	1
Trauma and Critical Care	3
Vascular	3

Conclusions

The Surgical Residency Program at NewYork–Presbyterian Hospital/Weill Cornell Medical Center has a long tradition of excellence that dates back to the beginning of surgery at The New York Hospital more than 2 centuries ago and is based on the academic fabric of the Department of Surgery at NewYork–Presbyterian/Weill Cornell. It continues to thrive as a result of the cutting-edge surgical procedures performed on a daily basis by the faculty of our department and the wealth of experience offered by rotations through the other integrated and affiliated hospitals. Although not mandatory, many residents select to interrupt their 5-year clinical training and spend 2 to 3 years in a basic science laboratory setting. Ultimately, the majority of our trainees choose full-time faculty positions in academic medical centers around the country as their first job.

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