the UVM College of Medicine, he was “one of only a few students there who had good high school education.” After residency and two years of additional training, he returned to Burlington in August of 1907 as an “anesthetist” at Mary Fletcher Hospital and instructor in the specialty. It’s unclear what specific anesthesia training Dodds had, beyond exposure to the use of ether as an intern. A description of the “Dodds Routine,” as it was referred to by some students, provides a window into how anesthesia was practiced at the turn of the last century.

How did Dodds do anesthesia? He was initially a classic “etherizer,” using open drop techniques to deliver ether and (occasionally) chloroform. Later in his career, he learned how to administer nitrous oxide — usually called “gas” — at an anesthesia course in New York City and from Burlington-area dentists. He probably used nitrous oxide in what was called the “nitrous oxide-ether sequence,” a technique introduced by Thomas R. Noyes in which “gas” was inhaled for a few moments before ether was administered.

Unfortunately, only one first-hand account of Dodds’ practice exists, related by Ellsworth Amidon, a UVM College of Medicine student in the late 1920s. He called it the “Dodds Routine”: “No preop medication was used so a child, usually crying, was placed on an OR table. As a deep breath was taken, in preparation for another yell, the intern would place the gauze in front of the child’s face so we would get the full benefit. Not too many breaths were required before sleep mercifully overtook the trauma to both patient and ‘anesthetist’ probably lasted a lifetime.”

One surgeon who made his mark during this time was George Sabon, a 1900 UVM College of Medicine graduate. Kreutz notes that he was “hired by UVM in 1903, but did not advance quickly, achieving the rank of assistant professor only in 1926. (He was blinds in one eye and his poor depth perception was a problem.) He did, however, introduce spinal anesthesia to Burlington in the 1920s, and was credited with saving many lives that may have been lost if inhalation anesthesia had been used.”

By the 1930s, nurse anesthetists were employed at many hospitals and were generally preferred by surgeons over interns. Nurses were better trained than interns — who had three months of anesthesia training, at most — they provided better care than interns (who would often be distracted by the technical aspects of the surgery instead of focusing on their anesthetics), and they protected the surgeon’s medical license better than interns. (who were often working under the direct supervision of the surgeon).

One of about 230 full-time anesthetists in the United States — there were only 710 anesthesiologists in all, most “casual anesthetists who do not consider anesthesia to be their one and only life’s work” — and an expert on cyclopropane anesthesia. He lectured on “newer anesthetic agents” at the May 1938 meeting of the Vermont State Medical Society, “with an emphasis on cyclopropane, intratracheal, intravenous, and spinal anesthesia.”

Ford left Burlington in 1939 under unclear circumstances, served in World War II, and then went on to practice in Pennsylvania.

The Birth of a Division
After Ford left, John Abajian came to Burlington with a directive to create a department of anesthesiology at UVM. From the earliest days of the “ether cone,” to modern techniques tailored to the tiniest of infants, the practice of anesthesiology has a rich and nuanced history. A new book from University of Vermont Associate Professor of Anesthesiology Joseph Kreutz, M.D., titled Anesthesia at the House, chronicles the development of the specialty at UVM.

At an anesthesia that practiced there, in an old postcard known as “the House” to the doctors.

Above: the Mary Fletcher Hospital, that practiced there, in an old postcard view from the early 20th century.
Mary Fletcher Hospital. A city boy who attended Long Island University and New York Medical College. Kreutz notes that Abajian arrived in Vermont feeling like he had been “banished to Siberia.” He quickly earned a reputation as both brilliant and difficult.

Almost immediately, some members of the UVM medical staff were put off by Abajian’s personality. cocky, opinionated, and extremely outspoken, he made enemies easily. It turned out that he was a very good anesthesiologist, though, and he ‘managed to survive the next few months.” Soon “known and admired by the surgeons for his great intellect, innovative ideas, and capable performance of his duties,” Abajian later credited some of them — Al MacKay, Wally Weese, North Truxx, Lyman Allen, even old George Salen — with helping him through his turbulent first year in Burlington. He also singled out E.S. Brown, who became “like a second father” to him, saying: “The only thing I really regret now is that I wasn’t born a Vermonter. The type of cooperation I received from people at the Fletcher at that time, and from the medical school, is the best any anesthesiologist could obtain and receive anywhere in the United States.”

Abajian soon recruited 24 year-old nurse anesthetist Elizabeth “Betty” Wells to his newfound division. The techniques they used were “atypical for the era,” Kreutz notes, with a focus on local and regional anesthesia. Although it’s unclear why he preferred these methods, the duo continued to shape the practice of anesthesiology through their partnership. Wells later proved to be indispensable, as World War II began to call men into military service.

JOHN ABAJIAN GOES TO WAR

Abajian enlisted in the U.S. Army in 1942, and headed off to war. He eventually became consulting anesthesiologist to General George Patton, traveling throughout the European Theater teaching nurses and physicians in the field “Fundamental anesthesia techniques, pre-and postoperative care, and shock and transfusion therapy.” Kreutz says Abajian focused on regional and local anesthesia as opposed to general, just as he had done in Vermont. His work was credited with saving many soldiers’ lives.

Abajian returned to the United States in June of 1945 at the rank of Lieutenant Colonel, and resumed his position at UVM at the start of 1946.

THE HOME FRONT

With Abajian traversing Europe with Patton’s Army, back in Vermont, Wells became the leader of the new division, at 25 years-old, caring for patients with tireless dedication. She was joined by another nurse, Esther “Jackie” Roberts, whom Kreutz describes as a “plain-spoken farm girl from Barnard, Vt.,” and internist Christopher Terrien, Sr., a 1936 grad of the UVM College of Medicine. The young team handled the situation with remarkable grace, according to Kreutz’s reporting.

Despite the workload and risks, Wells later wrote, “We survived the frequent call schedule and, more importantly, our patients did too. There were no fatalities due to anesthesia during that period — probably would have resigned if there had been.” But by 1944, Wells and Roberts were worn out and asked Mary Fletcher Hospital’s new Superintendent, Lester Richwagen, for more help. He obliged, hiring Mary Fletcher School of Nursing graduates Frances Wool in May 1944 and Florence “Peg” Thompson in January 1945.

As World War II wound down, and anticipating the return of many young men seeking employment, the nurse anesthetists who had put in countless long-days and call hours caring for patients during the war explored their career options.

Kreutz notes that Wells and Thompson continued to work in anesthesiology, while Wool joined the military before serving as a private nurse in New Hampshire. Roberts found success in a different medical field — she went on to serve as surgical assistant to eminent UVM neurosurgeon R.M.P. Donaghy, who pioneered microsurgery, and in 1969, she was honored as the “Mother of Microsurgery.” She died in South Burlington, Vt., in 2010, at the age of 90.

BUILDING A DIVISION

With men returning from the war eager for additional training and employment, a postwar directive from the American Medical Association urged “hospitals around the country to expand their postwar residency programs.” With a Division of Anesthesiology once again under the leadership of Abajian, UVM did just that, setting up a residency program and hiring its first anesthesiology resident, Antonio Bayuk, in July of 1946. A veteran who had been injured in a parachute jump in Germany, he was soon joined by a second resident, Ernie Mills, also a veteran. Additional residents followed, including Donald Harwood and Charles Cox. These early residents recall both the challenges and the rewards of working in a rapidly changing field.

Anesthesia was still a relatively dangerous business in the early 1950s, with primitive agents (ether and cyclopropane) and crude monitoring (primarily “finger on the pulse”), but the residents learned to deal with it. “Safety was primordial,” according to Francesca deGenova. “This is why we used local, blocks, spinalis, continuous spinals, and general anesthesia, in that order.” Harwood remembered that he “learned to be suspicious of redheads and fast-pulsed patients.” Cox noted that he didn’t lose a single patient during his residency, a remarkable achievement. Betty Wells and Ernie Mills did most of the teaching that took place. “Betty and Ernie and dear experience were our mentors,” Harwood recalled:

“I learned that we would be integrated into the thick of things very rapidly and it was sink or swim… John gave us an unfettered opportunity to get into trouble on our own and back off if we wanted to. I was not afraid to do that. He helped us cultivate intuition.”

These first residents helped to lay the foundation for a robust division that would go on to make some important discoveries in the field.

FLUOTHANE

In the mid-1950s, UVM became one of the first institutions to study a new anesthetic agent, called Fluothane (halothane), which held the potential to replace ether as the go-to agent for anesthesiologists nationwide. Kreutz details how a partnership between Abajian and Ed Brazell, a brilliant engineer and the new director of anesthesiology research at UVM, led to the development of what came to be known as the “Abajian Scales,” a device that controlled dosing of the highly potent drug. Brazell drafted a diagram and prototype for the device,

In both the theory and practice of the administration of anesthetics and had also given valuable assistance in the handling of casualties in the operating room. His work elevated the standards of both anesthesia and surgery in the Third U.S. Army.”

Dr. Charles Cox, M.D., performing a spinal anesthetic.
Kreutz notes that the publication attracted a great deal of attention at the time, and Abajian traveled all over North America for speaking engagements. Although the Abajian Scales lost prominence after the development of a different device, the early work at UVM helped increase adoption of the new anesthetic agent.

MAZU

The late 1950s brought important advances in surgery — including the first heart-lung transplant — as well as personnel changes that would shape the division for years to come. John Mazuzan joined the department in 1959. His unique friendship with Abajian, and his patient tenacity, brought the department through a time of rapid change.

Mazuzan eventually went on to attend the UVM College of Medicine, and after service in the Air Force and training at Massachusetts General Hospital, returned to his home state at Abajian’s behest to practice anesthesiology. Kreutz describes the relationship between “Big John” and “Mazu” — two men with very different personalities — as one of deep mutual respect, if also one fraught with some difficulty. Kreutz quotes Mazuzan: “John and I had a love-hate relationship. I was like a surrogate son to him. He would call me almost every night and talk with me for an hour, not just about anesthesia, but also about politics and books. He was a very interesting guy, had a brilliant intellect, and we enjoyed each other’s company.”

SPECIAL CARE

As ventilators and other new technology began to come online — saving many lives in the process — special hospital wings were set up to care for critically ill patients. In Vermont, the first “special care unit” was founded in 1962, followed by the Robert F. Patton Intensive Care Unit in what was then the Medical Center Hospital of Vermont in 1969. Bob Deane and Tom Shinozaki became the brains of the department, according to Roy Bell. In addition to their patient care responsibilities, Shinozaki developed computerized data collection systems, work that culminated in the founding of Vertek, a manufacturer of nitrogen washout computers and pulmonary compliance measuring devices, in 1989. (Vertek was sold to Hewlett-Packard in 1997.) Shinozaki also built prototypes of carbon dioxide monitors, sleep apnea measuring devices, in 1969. (Vertek was sold to Hewlett-Packard in 1997.) Shinozaki also built prototypes of carbon dioxide monitors, sleep apnea measuring devices, infrared thermometers. Deane’s strength was his congeniality and empathy. He had been a general practitioner in South Africa for five years before his anesthesiology career, and strongly connected on a personal level with everyone he came into contact with. He was named “teacher of the year” several times by UVM College of Medicine students, and also received the Karl Jefferson Thompson Teaching Award from UVM in 1980.

In many ways, their work set the department up for the proliferation of sub-specialties to come in the next decade.

SUBSPECIALITY GROWTH

In the 1970s, as new techniques continued to be developed, UVM hired sub-specialists in a diversity of fields, including Cardiothoracic Anesthesia, Neuro-anaesthesia, and Vascular anesthesia. One particularly note-worthy hire was John Abajian’s son, Chris Abajian, who joined the division in July of 1974. Kreutz calls him a “true sub-specialist,” as he focused almost solely on pediatric anesthesia techniques. Eva “Heidi” Kristensen also joined the team during this time, setting up the first epidural service for labor and delivery.

Mazuzan’s obstetrical anesthesiologist was Eva “Heidi” Kristensen. Kristensen was a former high-school science teacher in an Amish area in western Ontario who had changed careers, graduating from McMaster University Medical School in 1976. During her UVM residency, she had developed an interest in obstetrical anesthesia, mainly because she “liked to talk to people” and “she just made sense for me personally.” In July 1978, Kristensen was hired as a “junior attending” or “OB fellow” — her title mattered little to anyone — to set up an epidural service on MOM’s labor and delivery ward. She was taught the basics of epidural analgesia by Chris Abajian, and supplemented that with a month working with an obstetrician in Grand Bend, Ontario, and short stints at Hammarsmith and Queen Charlotte’s Lying-in Hospitals in London.

With Kristensen providing key leadership, the department hired additional physicians to help carry the workload as demand for epidural services continued to rise through the 1980s.

MAGIC

Infant spinal anesthesia has helped to save many young lives over the past three decades, with UVM anesthesiologist Chris Abajian playing a key role in its usage. He seminal publication brought the technique into the limelight, and at UVM, he spent countless hours sharing his knowledge with the next generation. Before his retirement in 2012, he “personally taught almost 300 UVM anesthesia residents the technique,” Kreutz says.

No UVM anesthesiologist, past or present, is better known throughout the world today than the “Magic Man,” Chris Abajian. An expert at magic tricks in the latter part of his career, he shared this skill with colleagues at numerous anesthesiology conferences over the years. It was an amazing talent — using magic during his preoperative visits to bond with even the most frightened, skeptical children, all in a (usually successful) attempt to convince them that accepting an anesthesia mask full of “smelly” isn’t such a bad idea after all. But magic isn’t what Abajian is remembered for. Instead, his status as one of the best-known pediatric anesthesiologists of his generation is the result of the 1984 publication of an article in Anesthesia and Analgesia that changed the anesthetic care of premature infants forever.

Thirty years later, infant spinal anesthesia is performed around the world and has become an essential part of the pediatric anesthesiology armamentarium. Chris Abajian’s infant spinal database — now called the Vermont Infant Spinal Registry — contains 10,000 cases and includes data on over two thousand UVM cases.

As the turn of the 20th century drew closer, the Department of Anesthesiology continued to evolve under the leadership of several different physicians, including Thomas Poulton, M.D., and Howard Schapiro, M.D., who served from 1966 to 1975. David Adams, M.D., served as interim chair until the College welcomed Mazen A. Makrati, M.B.B.B., in August of 2016 as the chair of the Department of Anesthesiology and health care service chief of anesthesiology.

Which was a solution so foolproof that even an inexperienced anesthesiologist never be the same.