Pediatric neurosurgery and neurosurgery in general suffered a great loss on July 9, 2006, with the death of Fred Jacob Epstein (Fig. 1). He was born on July 28, 1937, in Yonkers, New York, to Joseph, a world-renowned psychiatrist, and Lillian, a social worker. He learned from his father that he should never resist asking a question for fear of appearing foolish. Evenings were spent around the family’s dining room table discussing issues and the social injustices of the times, and his mother’s thoughts infected Fred with a deep social conscience. Fred was encumbered by dyslexia and this led to much teasing and concern in his house. The central question during his adolescence was “What will become of Fred?” This question became the fuel for him to succeed throughout his adult life. Countless times he would recount the phrase when trying to instill in others a confidence that all things are possible.

Fred was an innovator in medicine. Early in his career he participated in the development of the Cavitron Ultrasonic Aspirator (CUSA), a revolutionary piece of equipment that would later be so important for removing tumors in the brainstem and spinal cord. In the late 1970s, a young boy with a tumor in his spinal cord came to Fred. Fred removed the tumor and the boy recovered his strength. It was with this case that Fred embarked on his mission to explore the boundaries of surgery within the nervous system. By the time I joined him to complete my training, he had surgically treated approximately 40 tumors of the spinal cord and a handful of tumors within the brainstem. I marveled at his mastery. I remember asking him at the completion of the removal of a young child’s spinal cord tumor just how he knew when the removal was complete and how he knew when to stop short to avoid injuring his patient. His reply was, “You just know.” My response was that I would never do such a surgery, rather I would send my patients to him—I simply could not learn what Fred knew. Fred’s true greatness came in his realizing this and then supporting the development of intraoperative monitoring and mapping of the nervous system’s circuitry during tumor removal.

During the 1990s, the frontiers of monitoring were pushed back in Fred’s operating room. Later that decade, criteria had been established that were predictive of permanent injury with 100% reliability. I remember one Christmas holiday when a child arrived with a tumor in her brainstem. Fred was vacationing in Florida. I called him and he told me to prepare the child for surgery the next day; he would fly up to perform it. I watched the next day as he skillfully removed the tumor. At one point the monitors showed deterioration in the patient’s condition, coming close to predicting injury. Fred stopped his removal of the tumor. The monitored values returned to normal levels, and he proceeded to complete the tumor’s removal. When the surgery was over, I asked him why he had come up from Florida given the reality that monitoring had guided the surgery for this child. He acknowledged the importance of the monitoring and that he had not really needed to come, that any of us could have performed the surgery. Fred had moved the surgery for brainstem and spinal cord tumors from an art form that very few could master to a surgery that most could accomplish when using the monitoring he had helped to develop. Fred had ensured that surgery would always be available to children with brainstem and spinal cord tumors.

In the mid-1990s, a poem written by one of Fred’s patients just before the boy’s death was sent to him. In it was a line that changed Fred’s life mission:

I ask you reader, whoever you may be,
Take my trembling hand and warm it with care and sympathy.

This poem was devastating for Fred. Up to this point he had prided himself on offering the most sophisticated surgeries for the most complex tumors of the nervous system. This is exactly what he had done for this boy, but in Fred’s eyes he had failed the boy and his family by failing to provide a warm, sympathetic environment for his care. He became obsessed with developing a system that could not only deliver the most sophisticated care but would also nurture...
Obituary

the families and support both their physical and spiritual needs. He left New York University (NYU) in 1996 to help establish the Institute for Neurology and Neurosurgery in the hopes of creating such a paradigm for our community. Fred changed from being a surgeon seeking new technology to conquer the most malignant illnesses in children to a man seeking to develop hospital environments that nurtured all his patients’ needs. This obsession persisted until his death.

Fred was a leader. He joined the Department of Neurosurgery at NYU in 1970 and was given the responsibility of treating children. He cultivated his practice and it grew to international preeminence. In 1985 he established the Division of Pediatric Neurosurgery at NYU. Eleven years later he was instrumental in establishing a center of excellence for the neurosciences, a center that again grew to international preeminence largely because of him. Along the way he recruited many physicians to work alongside him. It speaks to his ability as a leader that many of these physicians became leaders in their fields, working as Fred did to deliver the highest level of care to children. Fred was a father figure and not a competitor. He spent a great deal of time working for the acceptance of pediatric neurosurgery as a subspecialty of neurosurgery. He served as the chairman of the American Association of Neurological Surgeons/Congress of Neurological Surgeons Joint Section for Pediatric Neurosurgery, president of the American Society for Pediatric Neurosurgery, and president of the International Society for Pediatric Neurosurgery. He was instrumental in the establishment of the American Board of Pediatric Neurological Surgery and served as one of its first directors, accrediting physicians trained in pediatric neurosurgery. This work has made pediatric neurosurgery a model for how to train and accredit physician specialists to other subspecialties of neurosurgery. Central to all his activity in organized pediatric neurosurgery was a deep desire to foster an availability of physicians capable of surgically treating children with neurological conditions in a skillful and knowledgeable fashion.

Fred was a teacher. It was probably his greatest gift to us. His approach was that of a gentle father with great wisdom. He never taught through intimidation, never belittled, and was never condescending. He was quick to share excitement over a new discovery and would without hesitancy support any project that would advance our care of children. I remember going to him early in my fellowship training to speak with him about a surgery being done in France to treat spasticity. I thought it might be interesting to write the surgeon and hoped that Fred might know him. Fred’s response was to tell me to go see him and to take my wife. The result was the introduction of this surgery in New York and its subsequent evolution into a surgery for spasticity of the arm, something not previously available.

Fred’s love for pediatric neurosurgery was infectious. Every summer our office was overflowing with high school and college students wanting to experience medicine. Many went on to medical school and several into neurosurgery. We would typically have one or two medical students rotating on our service as well as frequent visiting faculty from abroad who came to watch and be trained by Fred. During my time with him at NYU, it seemed as if nearly every resident left our service with plans on becoming a pediatric neurosurgeon; in the end, eight did. In 1986 Fred established a fellowship for postresidency training in pediatric neurosurgery; 21 neurosurgeons completed this fellowship under the leadership of Fred and they are now practicing in North America, Europe, the Middle East, and Asia. Of these, 10 are or have previously been directors of divisions of pediatric neurosurgery, three are or have been chairmen of neurosurgery departments, and one is the vice dean of a prominent medical school in North America. Three have established fellowship-training programs of their own. I speak for all in saying that Fred remained our teacher until the very end. This spring he was offered an appointment as a full professor at a major medical school’s department of neurosurgery, where he planned to teach and consult.

Family meant everything to Fred. Every day at work he would share stories about his family. His wife, Kathy, was clearly his life. His love for her and the time he was able to spend with her rejuvenated him. His children had access to him at any time. More than a few patient visits were interrupted by their calls. I can remember numerous incidences of him taking such calls in front of patients who would listen as Fred gave advice on the care of a pet or received fresh news on a success at school. There would be no hurry in ending the conversation or a reminder that they were interrupting. I have never seen him as worried or depressed as when one of his family was ill or facing a serious challenge.

FIG. 1. Photograph of Fred Jacob Epstein, M.D. (spring 1998).