

In Memoriam

Alexander Sandor Nadas, M.D. (1913–2000)

Alexander Nadas (affectionately addressed as Alex) died on May 15, 2000 in Needham, Massachusetts at the age of 86 years. Alex Nadas was a wise, compassionate, energetic, and aggressive leader. He stands in medical history as a founding father of American Pediatric Cardiology in consort with Helen Taussig (1898–1986), who is widely accepted as the founding mother of Pediatric Cardiology.

Nadas' medical career was centered at The Children's Hospital and Harvard Medical School in Boston, where he powerfully influenced the lives of countless patients, students, and colleagues during the 33 years (1949–1982) of his tenure as Division and Department chairman. Nadas' influence as a teacher and leader in pediatric cardiology extended throughout the world—in word, in example, in deed, and in energy.

The crown of Nadas' career was the progressive development of a department of national and international renown for the care of children with heart disease—a clinical department that was increasingly supported by wide-ranging clinical and basic research programs. The Cardiology section at Children's Hospital that Alex Nadas founded in 1949 and nurtured for three decades has now, under the leadership of Dr. James Lock, over 40 full-time faculty physicians and scientists working with some 40 clinical and research fellows, and it constitutes the largest such pediatric cardiology group in the world.

Alex Nadas was born in Budapest, Hungary, and received his first medical degree from the Semmelweis Medical School, University of Budapest in 1937. The approaching storm of Nazi fascism caused Alex's father, Sandor, a literary and political journalist in Budapest to urge his son to emigrate. Nadas left for America at Christmas 1938, stopping enroute for several months of medical studies in London with Professor Paul Wood, an exposure that fanned Nadas' interest in cardiology. Alex, age 26, arrived in New York City where he took up residence in the International Student House at Columbia University. He occupied himself with studying medical texts in preparation for American medical examinations, and occasionally joined a cardiologist named Pinky Schwartz on cardiology rounds. In short time, Alex met his wife to be, Elizabeth McClearn, a librarian who roomed across the street from International House. Na-

das reminisced, "She was a tall, slender, beautiful, blonde, southern-voiced, American girl—and that is what I wanted! I wanted to distance myself from everything Hungarian, and that was about as far as I could run."

Nevertheless, Nadas continued to exemplify in all his encounters the cultured, multilingual, European intellectual that he was, but this was always coupled with an intense identification and love of the American values of democracy, freedom, and opportunity. Upon returning from European cardiology meetings and alighting at the Boston airport, Nadas was heard on more than one occasion to exclaim: "I have the urge to kiss this American soil!" Perhaps symbolically, Nadas died peacefully in his sleep at home in his 86th year after being honored at the Society for Pediatric Research and then being taken by several old friends to dinner at his beloved Café Budapest in Boston.



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Early on, in medical school, Nadas identified his interest in cardiology: "I had the cardiology bug." Yet coming from a central European medical school he could not expect to initially achieve a decent academic training position in his chosen field without more credentials. After passing his ECFMG medical examinations, Nadas embarked on a series of training experiences (1940–1942), initially as a rotating medical intern in Cleveland, Ohio and Wilmington, Delaware, about which he commented, "these were terrible places!" Subsequently, Nadas managed to obtain an appointment at the Massachusetts Memorial Hospital in Boston and then served as an assistant pediatric resident at Children's Hospital, Boston (1942–1943). Finally, he served as chief pediatric resident at Children's Hospital, Detroit, Michigan (1943–1945), and was also awarded a second, but now American, M.D. degree from Wayne State University Medical School, Detroit.

In 1945 Nadas returned to Massachusetts where he set up a private pediatric practice in Greenfield, a small town in the western part of the state, frequently driving the 100 miles to Boston to attend pediatric grand rounds at the Children's Hospital. In time, Alex and Elizabeth had three children—Trudi, Betsy and John—and later 3 grandchildren. Nadas was blessed by a loving family, hundreds of appreciative and devoted students, and many professional associates and friends throughout the world. Alex did not remain untouched by personal tragedies—Elizabeth, his wife of 53 years, died in 1994 after a quite prolonged and severe illness, and a cherished granddaughter perished recently in a tragic accident.

The ambition, intelligence, confidence, and determination that Nadas demonstrated as a resident at Boston Children's impressed many staff physicians, including Charles A. Janeway (Physician in Chief, 1946–1974). Janeway later proved pivotal to Nadas' career when in 1949 he approached Nadas about developing a cardiology program at Children's. The hospital had already achieved international stature in congenital heart defect surgery resulting from the pioneering operative successes of Robert A. Gross (patent ductus arteriosus ligation, 1938, and coarctation of aorta repair, 1945). Thus, the stage was set for the development of a major pediatric cardiovascular diagnostic and care unit. Nadas phased out his pediatric practice over the course of a year—now travelling twice weekly between his practice and family in Western Massachusetts and Boston where he was preparing for his new career at Children's Hospital. He also spent time with Dr. Samuel Levine, an eminent and very wise adult clinical cardiologist at the Peter Bent Brigham Hospital. It was there from the work of Lewis Dexter and James Dow that Alex would encounter his first exciting Boston views of clinical cardiac catheterization.

In 1949, the main diagnostic tools of the cardiologist were the stethoscope, the chest x-ray and, according to

Nadas, "common sense." Nadas immediately devoted himself to introducing the necessary, newly emerging techniques of medical diagnosis. In the 1950s he pursued a vigorous program of recording, studying, and interpreting data from the electrocardiogram and the phonocardiogram and he soon demonstrated an uncanny ability to engage scientists from other disciplines to advance his knowledge of these tools. Maurice Rappaport, a Ph.D. engineer from Sanborn Corporation (later Medical Division of Hewlett-Packard), became a weekly contributing participant at the ECG and phonocardiogram reading sessions. Nadas also soon established a pediatric cardiac catheterization unit at Children's and, with the early collaboration of Abraham Rudolph, pioneered in aggressively and safely documenting the pathophysiology of congenital heart defects in the very young infant and child.

In the 1960s Nadas embraced the need to establish a laboratory for the study and teaching of the morphology of congenital heart defects. He was farsighted and fortunate in recruiting Richard and Stella Van Praagh, who established and continue to maintain the remarkable Cardiology Pathology Registry at Children's Hospital. In the 1970s came ultrasound and advanced cine-angiography; and in the 1980s came electrophysiology. In all these disciplines the Boston Children's units became leading clinical and research contributors.

In the 1990s came the full blossoming of William Rashkind's balloon atrial septostomy (1965) prediction: "Some day the cardiac catheter will provide a full menu of catheter-delivered morphologic as well as physiologic therapy." We recall an afternoon in 1988 at the Children's Memorial Hospital (Chicago), when Nadas who had already lamented the near total abandonment of the stethoscope by trainees observed a passing parade of operating-room garbed (scrub-suited) pediatric cardiology staff. "Behold the advancing *chirurgerization* of the pediatric cardiology specialist"; he uttered with some discomfort.

When Nadas started at Children's, organized and fact-based clinical observations about congenital cardiac lesions were very sparse. Nadas promptly initiated a program of dictating detailed physical examinations and bedside progress notes that were then integrated with the ECG and radiology findings and operative notes on the patient charts. These were soon joined by detailed physiologic and anatomic reports from the catheterization studies, and subsequently by each of the new contributing special examinations—echocardiography, electrophysiology, and cardiac pathology.

These notes and deliberations became the basis for the first edition (1957) of a textbook, *Pediatric Cardiology*, that Nadas wrote during a sabbatical in Groningen, The Netherlands. There were three subsequent editions—in 1963; in 1972, with coauthor Donald C. Fyler;

and in 1992, now *Nadas' Pediatric Cardiology*, edited by Fyler with expanded contributions from the Boston Children's cardiology staff. Nadas was justifiably proud of his personalized yet scholarly textbook effort. In an interview he said, "I think modestly that this is certainly the best book in pediatric cardiology. The other authors are all multi-authored and rather bland. The authors just don't like to get into arguments. I love to get into arguments."

Nadas was a master teacher. This was best exemplified in the "don't you dare miss" Friday afternoon "public" conferences he started in the early 1950s, where he presided, case by case, over the presentation of each patient's findings and studies. In these meetings, Nadas initiated lively discussions on the diagnostic possibilities and management plans by calling upon the participation of cardiologists, radiologists, pathologists, nurse-specialists, social workers, surgeons, and often visiting experts. Most every Nadas trainee who went on to establish their own program throughout the United States and the world replicated this seminal conference format. Nadas taught legions of medical students, pediatric residents, and cardiology trainees; over 150 pediatric cardiology trainees are the beneficiaries of his knowledge, spirit, energy, and (hopefully) principles.

Nadas, together with his staff and the fellows in training, published some 220 scientific manuscripts extending into every corner of pediatric cardiology. Many represent classics of clinical descriptions of congenital heart defect populations. Nadas was an early champion of evidence-based medicine and published many searching medical and surgical outcome studies. Notable are a number of multi-institutional collaborative studies, such as: "A Joint Study On The Natural History of Congenital Heart Disease" (1977), and "Patent Ductus Arteriosus In Premature Infants" (1985). Working with his colleague, Donald Fyler, Nadas established The New England Regional Infant Cardiac Program. This collaborative program involved the cooperation of institutions in six states and was an achievement that demanded diplomatic as well as organizational and medical skills. Importantly, the program resulted in a plethora of population-based clinical information on serious infant heart disease, and eventually also provided much secondary gain for the actual care of this population.

Nadas and Dr. Aldo Castaneda, Gross's successor in cardiac surgery at Children's Hospital, worked together to fashion a unique collaboration between surgical and medical specialists. Their concept of mutual support extended to intensivists, radiologists, basic scientists, pathologists, and nursing personnel. This proved to be an organizational concept and operational reality that can be credited to a significant degree for the spectacularly favorable operative results achieved at Boston Children's even in the smallest and sickest patients.

Nadas brought intelligence, energy, and dedication to his work—he was always ready to take on a leadership role and to inspire and encourage others. Donald Fyler has characterized his chief and co-author as, "... determined, ambitious, fatherly, dictatorial—but also one of the most thoughtful persons I have know. People just naturally respond to Alex, he is incredibly warm and is truly interested in you."

Nadas' words to me in summarizing a 45-year relationship were, "First my student, then my colleague, then my friend, and finally my teacher." This concept of a circle of teaching and learning he readily extended to many of his trainees. I once directed Alex to a verse from Hillel the Sage (Sayings of the Fathers, 1:14, circa 30 B.C.), and he fully embraced this characterization of himself.

If I am not for myself, who will be for me?
And if I am only for myself, what am I?
And if not now, when?

Behind Nadas's quick smile and natty bowties one sensed a man who had no time for emotional or intellectual dishonesty, a fact succinctly expressed by his own statement: "The ethical aspect of pediatric cardiology is what should precede and remain after the technical aspects have been mastered." A quite revealing human comment appears in his letter to a renowned cardiovascular surgeon, following the operative loss of a shared patient. "Although you didn't succeed, it is wonderful of you to have tried. *I would think* (a classical and frequent Nadas phrase) that in terms of the suffering and humiliation that this wonderful young girl has been enduring you did her some good even with this tragic outcome. It is a sad story—she was just born a bit too soon."

Beyond his professional life, Alex Nadas, together with his wife Elizabeth, had a wide interest in intellectual pursuits ranging from philosophy to theater to art. Nadas was intensely concerned and broadly informed about national and international political events. He was a rabid Democrat, always expressing strong opinions, such as threatening to leave the country when Nixon won the presidency. In his closing remarks to the 2nd World Congress of Cardiology (1985), Alex rose to summarize the major achievements and problems addressed during the meetings:

First, I have to sound a political note! Let's step back from the nuclear abyss and start lobbying for survival! Now, to get back to our own little garden, Pediatric Cardiology—what do I see in my murky crystal ball?

During his career, Nadas received many honors, including: Guggenheim Fellowship, Fulbright Professorship, American College of Cardiology Gifted Teacher Award, European Association of Pediatric Cardiologists Memorial Lecture Award, American Pediatric Society Howland Award, American Academy of Pediatrics Car-

diology Founders Award, American Heart Association Paul Dudley White Award, and Harvard Medical School Alexander S. Nadas Professorship in Pediatric Cardiology.

Alex Nadas' memory will always be cherished by those who were privileged to train or work with him and by the many who had professional or social contacts with him. Nadas' memory will always be secure in the institutions he served and in the lives of the children and families he touched.

Willis J. Potts, M.D. (1895–1966), a giant in the world of Pediatric and Pediatric Cardiac Surgery, spoke of immortality in an address (1965), "The Soul of a Hospital":

How does an institution become great? Through the people who serve it with single minded, unselfish and unflinching devotion.

An institution is not great unless the catalyst of fiery devotion to the better care of the sick is constantly added to a mixture of imagination, ideas, love and work.

What's wrong with the IMMORTALITY that comes with making sick children well and happy, of lightening the burden of the handicapped, of soothing the worries of anxious parents?

This IMMORTALITY envelops the physician, teacher, and friend: Alexander S. Nadas.

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