Address: Distinguished Career Award, AAP Section on Critical Care Medicine, October 20, 2002, Boston

I want to thank the Academy and the section for this marvelous award. It is quite an honor in-and-of itself, let alone to follow the previous awardees, Dave Todres, Jack Downes, Peter Holbrook, George Gregory, George Lister, Russ Raphaely and Murray Pollack; all heroes, teachers, mentors and friends.

I would also like to thank several other people who befriended, taught, and mentored me, and who gave me many of the opportunities I have had. These include fellow pediatric residents, Howard Levy and Steve Boros at Rush-Presbyterian St. Lukes on the west side of Chicago; Milton Paul and Alex Muster from my cardiology training at Children's Memorial Hospital and Northwestern in Chicago; Rod Phibbs, Bill Tooley, George Gregory, Michael Heymann, Abe Rudolph, Julien Hoffman, Joe Kitterman, Max Klein, and Julius Comroe from my neonatology and cardiology research training at the Cardiovascular Research Institute in San Francisco; Ted Voetteler, Heinz Eichwald, Pepper Jenkins, and George Farr, at Children's Medical Center and UT Southwestern in Dallas; and John Brooks at Children's Hospital at Dartmouth. I especially want to thank all the residents, fellows, faculty, nurses, and respiratory care practitioners whom I have had the tremendous opportunity to work with and learn with for more than 27 years in Pediatric Critical Care. But most of all, everyone should know that this award is for two people. I could not be here today if it were not for the tremendous support and effort of one of the best doctor's I know, Dr. Fran Morrise. She is, quite simply, the rock of Gibraltar. Actually I was taking to Russ Raphaely this summer and we think that the three of us, Fran, Russ and myself, are the only three from that early period of Pediatric Critical Care Medicine who still actively practice full time clinical critical care medicine.

I have been asked to make a few remarks and I found that is not as easy as it may seem. I am certainly much more comfortable talking about shock, drowning, brain death, or cerebral edema and DKA. I thought I would take just a few minutes to talk about how I got into this, what challenges we faced then and what challenges we are facing now. I hope that will be interesting to you.
Thirty-five years ago, in September 1967 on my first day of my first clinical rotation as a student at the University of Illinois Research and Education Hospital (can you imagine naming a hospital that now?) I was put in a small room at the end of the hall on the general pediatrics ward to take care of a very ill patient with new onset DKA. I had to leave the room to get help from a nurse, to communicate with a resident and as I remember it, there was no attending in sight. There was no monitoring except for me. I immediately sensed that here was something wrong with this picture. During internship and residency there was a small intensive care unit on the pediatric floor. Each doctor who admitted patients took care of his or her patient. No residents were assigned to the unit. There was no attending physician overseeing the care or participating in the organization of the unit. By now I was certain that this could be done better and I wanted to spend full time as a pediatrician working in an intensive care environment taking care of very ill and injured children. But I needed training and this was the first challenge. There were no Pediatric Critical Care Medicine training programs. Dave Todres at Mass General and Russ Raphaely and Jack Downes at CHoP had training programs via the anesthesia route, and Fran eventually spent time in Philadelphia. I wanted to bring something different to the table and decided to train in cardiology because they were the pediatricians who knew how the blood went round and round and follow that with neonatology because they were the pediatricians who knew how the gas went in and out. I would then set up shop taking care of sick children. Abe Rudolph in 1974 used the term “intensivist” in quotes in signing his book for me, and this was the first time I thought of myself as that. The next challenge was to get a job as a full time Pediatric Intensivist. It was easy to get invited to go look at jobs. Almost everyone thought I would be a cardiologist and/or a neonatologist and as a sideliner I would sort of oversee a Pediatric Intensive Care Unit. When I visited Nick Nelson at Hershey he told me it would never work out to be a pediatrician working full time in a Pediatric Intensive Care Unit. But Ted Voetteler, the Chief of Pediatric Surgery at Children’s Medical Center and University of Texas in Dallas wanted a full time medical person to do the perioperative care of his large number of complicated surgical patients and Heinz Eichenwald, the chairman of Pediatrics, was willing to support this idea. Pepper Jenkins, the chair of Anesthesia, gave Fran Morriss, a trained pediatrician and anesthesiologist, who had also trained with Russ and Jack, the freedom to take full months out of the operating room to attend in the unit. So I went to Dallas.
The next challenge was starting a full time critical care service staffed by pediatricians. We had a tiny open unit with little space, no privacy or confidentiality, and a lot of commotion and noise. Parents were excluded during rounds, shift change, procedures, and night shift, in other words, almost all the time. Older, conscious patients were front row witnesses to procedures, death, and dying.

For staff, we had only a few nurses, who were good nurses, but most of whom were not trained to do the things we wanted. Many were not permanently assigned to the unit. There were no residents assigned to the unit and of course no fellows and, in the beginning, Fran and I were the only attendings.

The equipment was primitive with little capacity and we had little of it so we would even share monitors.

There was no organized transport system.

We had little authority to manage patients. No surgeons except for Dr. Voetteler and few medical specialists or even generalist wanted us to participate in the care of their patients. We had to sneak into their care under the guise of teaching and administration. We would round on all the patients twice a day for these purposes and maybe 10 to 15 years into it we still rounded on approximately one-third of the patients for “teaching” and “administrative” purposes. Of course, we would contact the primary service and make suggestions when we noticed things and through this method eventually won the confidence of many of the other services.

We did enjoy a measure of success in making patients better and this resulted in creating many chronic patients. I remember vividly complaining to one of our interested pediatricians I was frustrated that we were frequently full because of many chronic patients. She replied, “Dan, before you and Fran started doing this we didn’t have chronic patients.”

A specific challenge was therapeutic ability. We had few Pediatric Critical Care specific therapies and had little convincing evidence that anything we did made patients better. One of the big issues that helped put
Pediatric Critical Care Medicine on the map was Reye’s Syndrome. We did lots of things including ICP monitoring, hyperventilation, exchange transfusions, barbituate coma, hypothermia, most of which, including Reye’s Syndrome, have left the scene. In fact, many things if not practically everything we did in those days is now thought to be maybe not so good.

Another challenge was our knowledge base. There was little pediatric specific information available and most of that was difficult to find and unreliable. We tried to do our own research on many topics to improve upon the knowledge base. But much of the information needed was not necessarily of a research nature but of a practical nature. Our own staff was constantly asking, “How do we do this? How do we do that? How does this piece of equipment work?” We would have visitors and receive communications from many places asking the same things. So we did two things. We started a yearly pediatric intensive care course and we endeavored to write down our experience as one way of doing things. This lead to the book, which subsequently appeared in 4 editions under two titles and was translated into many languages. We sold a lot of books in many countries. We would receive Christmas cards from places as far off as India saying they wanted to send us greetings because they felt like they personally knew us since they used our book everyday. Of course one of our primary motives in writing the book was not to have to answer the same questions every day on rounds. But our residents thought since we were readily available they could just ask us the questions rather than read the book! One of the nicest comments about the book was made by David Steinhorn at the Society of Critical Care Medicine meeting a couple of years ago in Orlando. When he is was a resident. John Mickell was the only Pediatric Critical Care Medicine attending. When he had to be away he would give the book to the resident and say, “Just do what it tells you in here and you’ll be okay.” We also needed a forum to present our material. There were no specific Pediatric Critical Care sections at the AAP, SCCM, SPR, ATS, or ACCM. Now we have many forums as well as the Pediatric Critical Care Medicine Colloquium initiated by Hector James. We even have a television program. Keep up the good work Michelle and Mark.

Another challenge was finding comfort and strength from similarly interested colleagues. This required a national network and organizational effort, much of which was done by some of the people I have already
mentioned, and others and who were much better at it than I. But I do remember the first meeting of the pediatric interest group at the Society of Critical Care Medicine annual meeting. It was in San Francisco in the late 70's and all 15 or so of us gathered around the table with our brown bag lunches. It was a modest start which took a lot of effort to grow and gain official recognition, not only from the society but the American Board of Pediatrics, The American Academy of Pediatrics, etc. Now we have official status in all the organizations, the sub Board and a large membership.

So what became of all this? Well, Dallas has grown. There are 54 beds and 13 clinical faculty and 9 research mentors. Over 73 fellows have gone through the program.

And what are the challenges we face now? Well some things change, and some things stay the same.

Although there are many training programs now, we face the challenges of funding for fellows, recruiting quality fellows and maintaining research standards in training. We need to do a better job of getting medical students and residents interested in what we do and hospital and departmental support for our training programs. As far as getting a job, in spite of a scare a few years ago about too many intensivists, I think there always have been and probably always will be good job opportunities for well-trained people. Our challenge is to get the institutional support for sufficient faculty positions to fully and adequately staff Pediatric Intensive Care Unit services.

Building a Pediatric Critical Care service is still a challenge. Many units still are small or crowded, noisy, and lack privacy. Space is costly and difficult to get. At Dartmouth we built a new unit 3 years ago for which we set as our top priorities space and privacy for patients and families. All the rooms are individual with auditory and visual privacy; the small rooms have 255 square feet and the large rooms 355 square feet. Families can rest in comfortable window beds in the room, in the adjacent family center with ten, two-bed sleeping rooms or at David's House, our private foundation "Ronald MacDonald" type of facility on the campus.
Our nurses are extremely well trained, dedicated and professional but there are far too few of them to meet the needs of our patients. This is a major challenge to the entire system. We need to figure out ways to support nursing colleagues to attract and retain good Pediatric Intensive Care Unit nurses.

There are too few residents and there are progressively onerous restrictions on their participation in the Pediatric Critical Care Unit. By RRC regulation the time they spend in the unit is severely limited and in my mind totally inadequate to meet the RRC's own stated educational goals. The new restrictions on hours of duty, although well meaning, may diminish the education of residents further and fragment patient care. Continuity clinic requirements further limit resident Pediatric Intensive Care Unit education and disrupt patient care. We need to do a better job of championing our cause before these regulatory agencies.

The big academic programs now have fellows of course but as I mentioned we need to do a better job of attracting quality students and residents to fellowship and maintaining high standards of education and research experience during training.

We need to attract, support and retain good faculty and enhance career development both in clinical and research areas. We need to lobby hard with our bosses and administrators for adequate FTE support to have a sufficient number of faculty to allow for quality career development and a healthy personal life style for faculty.

The challenge with equipment now is to sort through all the choices and use high quality equipment and prove to ourselves which things help our patients. We need to restrain ourselves from using things just because we have them and use them only when there is a reasonable and rational belief they will benefit patients. We need to get away from using invasive, potentially harmful devices where not clearly indicated.
Transport systems are reasonably highly developed and successful in many if not most locations now and our main challenge is keeping our hand in the administration of systems and in management of our patients during transport.

Authority to manage patients is still a problem. Although it is generally accepted that Pediatric Critical Care specialist should be running units and caring for patients and there is sound evidence to support that patients benefit when they do, there is still a reluctance for many surgeons especially, and many pediatric subspecialist to collaborate with the intensivists in the care of the patients. I have no easy solution for this except to press on with good communications and helpful input for the good of the patients.

As for the our success, we do make a difference and many more patients survive and thrive due to our efforts and we still have bed space problems partly due to many chronic patients. I have no solution to this except encourage you to be proactive in developing alternative care situations for these patients.

The challenges of our therapeutic ability and information availability have changed in that we have a lot more to offer and marvelous mediums for exchange of ideas and information. All the best wishes for success to Pat Kochanek and staff. However, as many including Adrienne Randolph remind us, good information is still difficult to come by and we have to be discriminating in what we choose to accept and apply to our patients. And remember, be humble. It will probably also be true that in another 10 to 20 years many things we do now will also be thought to be maybe not so good. We also need to support efforts of those like Bob Truog, Dave Todres and the Children’s Medical Center of Dallas and Southern Methodist University Ethics Seminar who spend time and effort asking not only “what” to do and “how” to do it, but the “why” of things we do.

The most difficult and yet the most promising challenge is Pediatric Critical Care research. There are so many things to learn and understand, and we have become so much more sophisticated in doing this. Problems all the way from relatively simple clinical issues such as what is the best bronchodilator to use in RSV bronchiolitis to relatively complex issues like what is the cause or causes of cerebral edema in DKA.
which occupy me now, to all the incredibly sophisticated molecular work being done by Brett Giroir, Jim Thomas, and crew in Dallas deserve our attention and support. These and many more ventures hold great promise to improve patient care and outcomes. We now have many forums for presentation of our work and discussion of ideas. Our challenge now is to work very hard to support these meetings and journals and maintain high standards of scientific and presentation excellence. And we have our national organizations and recognition and our challenge now is conduct ourselves in such a fashion that it is clear that our organizations support high standards of education, research, patient care and advocacy and are not simply self-serving territorial entities.

Lastly, I believe that one of our greatest challenges is to place a high priority on family centered care. We need to enlist the participation of parents in the care of their children and form a partnership with them. At Children’s Hospital at Dartmouth we have done this in many ways including the design of our unit with spacious rooms which provide auditory and visual privacy; multiple in room, in unit and on campus sleeping arrangements for families; doing rounds with families when all information is presented to them in clear language with sufficient opportunity for their input and questions; allowing families to stay at all times including procedures, shift changes and nights; and emphasizing our belief that they have a great role to play in determining their child’s outcome. We are currently studying in a prospectively designed trial the effects of parents on rounds on patient outcome, the quality of communication, education of students and residents, and nursing care.

If I can be permitted the opportunity to give some advice it is this. Have a vision and be willing to work very hard and fight for it. Maintain high standards and never lose the focus on patients, their families, and the welfare of trainees for whose future you are responsible. But most of all surround yourself with very, very good people who make you appear better than you really are. And remember, be humble. I am fully aware that the story I told you today was experienced by many people at about the same time Fran and I were going through it and that any of a dozen of our colleagues could be up here speaking to you now.
I hope I am lucky and strong enough to keep working until my youngest graduates from college and tuition is paid. After that I can retire and go fishing. I hope that on the last day I go to work I will have as much enthusiasm as I did on my first day in Dallas, and every day thereafter, to learn something, teach something, and help a child have a better life.

Thank you.