29

Frank Lewis, MD
President 1999–2000

Dr. David H. Livingston

How and when did you decide on trauma as a career?

Dr. Frank Lewis

I guess I decided on trauma midway through my residency as a result of working with Bill Blaisdell at San Francisco General. Bill was my primary mentor. He was chief of surgery at San Francisco General and during my residency and then when I stayed on there on the faculty for next six or eight years. I always thought he was an inspirational figure.

Dr. Burt Dunphy who was the chairman of the department was the other really extraordinary role model and probably secondary mentor. Dr. Dunphy was the chair at UC from 1963 to I think it was 1976 or ’77, and I came in as a resident in 1966 and finished in 1972. I was there right in the middle of his tenure and it was an extraordinary era of people who were really amazing. It was probably the best training program in the country at the time and it was blind luck that I fell into it.

When I went out to San Francisco as an intern, not in the surgery program. I went to medical school at the University of Maryland and there was a really equally charismatic figure who was the chairman of medicine named Ted Woodward. Woodward was probably the single best teacher I ever had. He was an incredible clinician but he was also an incredible Socratic teacher. He spent an amazing amount of time with the medical students when you were there. Based on my exposure to him, when I finished medical school, I wanted to be an internist and

had arranged to do a year of internship in San Francisco and then come back to Maryland as an internal medicine resident. I did an unusual internship and there weren't many of them around. They were called mixed internships rather than rotating. We had six months of medicine, six months of surgery, but no OB-GYN or pediatrics When I got to San Francisco General my first six months were all medicine. It took me all of about two weeks on the medical services to realize that I had made a big mistake. Internal medicine based on my encounters with Dr. Woodward was really not what internal medicine really was. Within two months at the most, I had decide managing all this chronic disease was not satisfying or what I really wanted to do. I called Dr. Woodward and told him that I was giving up the residency.

When I rotated onto the surgical services, it was three years after Dunphy started and he already had this extraordinary group of residents and it was just like night and day. Suddenly there was this group of incredibly talented people. It was a time when the trauma experience was just beginning to increase in the late '60. Bill Blasdell had come out there as chief of surgery the year before. It was just exciting on a day-to-day basis.

Bill developed the first trauma center in the country there in 1967 or '68 and fostered all the research, so I just seemed to accidentally drop down into this amazing place. At that point, I had given up my medical residency. While I applied for surgery as soon as I realized that it was what I wanted to do, it was too late to get in the following July. But I was accepted for the year after so I spent a year doing some graduate work. A belated experience but I ended up in the right place.

Livingston

When you decided to pursue trauma, how was it viewed? I imagine given your location and the faculty at SF General, it was considered a real career path compared to cardiac or vascular or GI or whatever?

Lewis

You know I don't know that we even thought about it in those terms. It wasn't a matter of thinking about it as something different or something special. It was just what you did every day and it was just fascinating stuff. So it really was not a conscious decision that I wanted to do one specialty versus another.

In retrospect the entire time I spent at San Francisco General was really what is today called "acute care surgery." It was not just trauma but an incredible variety of acute illness. San Francisco General, I don't know how much you know about it, but it's the only city in the country where the city actually owns and runs all of the ambulances that pick people up. It's a legacy of San Francisco's fairly socialist history.

Back in 1890 or so, the city started a whole series of emergency hospitals which were dispersed throughout the city. Originally I think there were seven. They were really first aid stations that were geographically spread around the city. They created an ambulance system that if someone had something that needed hospitalization would move people from the emergency aid stations to San Francisco General. San Francisco General was the final receiv-

ing place. At the time the emergency portion of San Francisco General was actually a separate hospital by itself. It was called Mission Emergency Hospital and San Francisco General was the admitting facility attached to it. All of the care provided, both in the facilities themselves and in the transport, was all free. It was part of the tax base of San Francisco and that system continued, basically without much change, until 1965.

The patient population at San Francisco General just prior to Medicare was about half chronic-care patients who were there for months at a time and about half acute-care patients. Every medical service had a ward full of chronic patients and a ward full of acute patients, about 45 of each. Once Medicare legislation passed, all of the chronic patients could be moved out to nursing homes. So from 1965 to about 1968 the population of San Francisco General was but in half from about 1,000 to about 400–500 patients. Nevertheless the facility still got everything in San Francisco because the city owned the ambulances. There was virtually nothing in the way of emergency rooms at the other hospitals and there were no other ambulance services except for residency transport. It was an unusual system, so even though the city is not that big, San Francisco General got all emergencies of every kind.

It was fantastic training. The other important aspect of the General was that the surgical faculty was never larger than eight or nine people. So that was not enough to specialize and we never had pure vascular or thoracic surgeons or anything else. We just did it all. We grew up with that and never thought about it as anything particularly unusual.

Livingston

What was the best career or life advice you ever received?

Lewis

I don't know. I don't know that I ever really received any actually. I've always just kind of done what I wanted to do. If I wanted to give somebody advice, that's what I'd tell them: just do what you have fun doing. That's probably the best advice I could give to anybody.

Livingston

Did you ever get any bad career advice?

Lewis

No, I don't really think so. I think the key to happiness is doing what turns you on and not paying attention to secondary issues. Paying attention to things like how much you get paid or secondary issues never turn out to be the right motivator.

Livingston

Of all of your scientific contributions, what are you most proud of and how do you think it influenced care in the field of trauma?

Lewis

I don't know that I've really had that much impact, quite honestly. The paper that I wrote that has always been cited more than any other was a paper that was written about prehospital resuscitation. It was kind of interesting because back in the late '70s and '80s, the whole issue of prehospital resuscitation was being talked about a lot as paramedic services were developing. But based on what we saw at the General, I developed the belief early-on that there was actually nothing that a paramedic could do to a patient in that environment that would be beneficial in the way of resuscitation. My reasoning was that it always takes time to start an IV which is virtually impossible to do in a moving ambulance up and down the SF hills. So they always hold the patient at the site until they can start an IV.

In San Francisco, the time to a hospital is never more than 15 minutes because the city is only seven miles square. So it was my belief that in San Francisco, which was what I was experiencing, it was foolish for paramedics to start IVs because the time that was lost in doing that could not be compensated by the amount of volume you could give in the time it took to get to the hospital. Hewlett Packard had just made a new programmable calculator that you could actually program in machine language and they had all these little gadgets that went with it including an X-Y plotter. I got interested and thought, you know, the resuscitation issue would be a great problem to model scientifically. So I sat down one weekend after I bought this new computer, which in retrospect is so simple and archaic, and set up a model where you would specify at the outset what the patient's rate of bleeding, how long it took to start the IV, fluid infusion rate and then how long it took to get to the hospital. After you put in this initial set of conditions the "computer" would calculate the patient's physiology one minute later for the next two hours.

You could generate these curves so that you could compare different bleeding rates, different transport times, different delays in starting an IV, etc. Over one weekend from Friday night to Monday morning I sat at this computer for probably 20 hours and plotted all these possible circumstances out. While not surprising now, it turned out that there is no winning strategy to starting an IV in the prehospital setting if the transport time to the hospital is less than 45 minutes. Slow bleeding, fast bleeding, anything you want to think, it doesn't matter. I wrote the findings up the next week, sent it off and it got published in *Journal of Trauma* a while later (*J Trauma.* 1986 26:804–11). To this day that paper is more cited than any other single paper I wrote. It was written by myself over a weekend based on this little computer.

Livingston

During your career, what do you consider the two or three greatest changes in trauma care were?

Lewis

I think the biggest change is clearly the concept of a trauma center and having immediate facilities available for treatment. Everybody thinks that's second nature today, but in late 1960s or early '70s it was a new idea and not widely accepted. The institution of trauma systems

and the understanding of the improvements that they could provide for trauma care was something that started evolving back then and took another 15 or 20 years to become widely accepted. I think that's the single biggest event that occurred.

Another thing was how the specifics manage individual injuries changed. There are obviously many controversies around how should you measure splenic laceration for example, but many of those issues, conservative versus operative, played out during my career. That whole process continues to evolve but what is most important is the concept of defining a whole area of management in trauma care, analyzing the results—what works, what doesn't work, how should you be doing it, how should you train people to do it—and pick the best of it all.

Lastly the evolution of what is now being called acute care surgery as a distinctive specialty area I think is a significant step forward. It is clearly still in its infancy and needs a lot of further development and work but I think it's the right way to go forward in terms of improving care for the public.

Livingston

What aspect of your career have you found most rewarding?

Lewis

I don't know that I could pull out one aspect. I haven't practiced surgery, per se, since I came to the American Board of Surgery, but during my practice I always thoroughly enjoyed the personal aspects of dealing with patients. I always thought patients are infinitely variable and they were infinitely fascinating. I really totally enjoyed all of the aspects of patient care.

The second part of it, which is equally true since I was always in academic institutions, was that I thoroughly enjoyed the residents and watching them learn and participating in that process. Residents as a group are extraordinarily idealistic and hardworking and interested. They are bright, motivated, exceedingly diligent in what they do. They are remarkable people to work with. Having a group of people like that to interact with was always just very rewarding to me. I just had fun doing it.

Merge that with the scientific aspects of medicine and the taking care of patients was something I couldn't imagine doing anything that was more fun.

Livingston

What have you found to be some of your biggest challenges in your career?

Lewis

I don't know. I mean I've not really had any huge setbacks or whatever that were problems for me. People have always been quite good to me and I've been able to do what I wanted to do.

The politics of medicine is an issue. I think since I came to the Board and I'm looking more at the global aspects of how do you promote quality of care, how do you enhance care broadly and whatever, you get into obviously all of the politics of medicine. How you do that

is challenging. I think you know our system of care is not organized for high quality care nearly as well as it could be. Trying to get that changed is a difficult issue because many of the players in the game are not highly motivated to address quality as a first issue.

Livingston

What advice do you give a resident or junior attending interested in a career in academic trauma/acute care surgery?

Lewis

Well, I think it goes back to what I said earlier and beyond trauma. The most important thing is to really have a passionate interest in what you do. When you figure that out jump into it and to do it as well as possible, to advance the science of it wherever you can, to constantly look at how you can do things in the best way. If you do that, it's hard for anything else to be a problem.

Livingston

We've spoken a little bit about acute care surgery. What are your perceptions of the current challenges and opportunities and the future of trauma and acute care surgery?

Lewis

I think the greatest opportunity is the fact that it's the area for which there is the greatest public need, unquestionably. It's the one for which the most significant shortages either exist already or are developing and will become more severe over the next five to ten years.

So I think it has a golden future and I think it will ultimately thrive. One of the biggest challenges is it doesn't enjoy broad support across the surgical world and for reasons that I think are actually not very good. Many people see that there is a conflict between broad general surgical practice and the acute care surgery. I don't believe that myself.

I think the number of programs and fellowships in acute care should be expanded much more rapidly than is happening because the number currently is not even close to supplying the need we have in country for practitioners.

Obviously another challenge is the hours involved. But as people move to defined shifts and responsibility that problem will tend to solve itself. I think money has pretty much already been solved. It's possible today for someone to come out of a fellowship and get into a position with an excellent salary and I think that's only going to improve.

Overall I think it's an issue creating a practice pattern where you have an adequate call schedule and compensation, are not worked to death so that you burn out and attracting enough people trained to do it. I think the job itself is going to do nothing but grow.

Livingston

In the next decade what changes do you see in trauma/acute care surgery do you foresee? What's the next big advances?

Lewis

I think the change which is already occurring and is going to probably push on to near 100% is that surgeons are becoming hospital employees rather than individual practitioners. That process is moving forward pretty rapidly and probably will be largely complete within the next four or five years. That changes the nature of practice and ties surgeons much more closely to a given hospital than they have been in the past.

It has its dangers in the terms that it puts surgeons much more under the control of the hospital than they are when they are in individual practices. But it's clearly the way things are going.

As far as trauma systems, I believe it's very much in a hospital administrator's interest to be designated as a trauma center, even if it is only Level III or possibly Level II. There is a great incentive to do that because it has a halo effect on a lot of other programs and administrators really want to do that. Unfortunately they don't always provide the resources to actually make it a high quality trauma center. The problem is made worse because you tend to have too many trauma centers, particularly in an urban region, and the individual centers don't have enough volume to be optimally viable themselves and you have no political structure which allows you to do anything about it.

Obamacare is probably going to make that problem worse because now you will have a larger percentage of patients with insurance so the previously indigent patients that many of the hospitals would shun to take are now going to carry a check with them. If anything, it is going to increase the tendency for hospitals to want to be trauma centers because not only do they get the halo effect but now they will also get paid for delivering care and yet they don't necessarily want to provide the resources to deliver that care. Growing the system in that environment and providing effective care to serve the public is always a challenge which is probably not going to get any easier.

Livingston

With your new career at the American Board of Surgery what does the future hold for Dr. Lewis?

Lewis

Well, I don't know. I just kind of carry on here from day to day and try to be useful. I continue to have fun with what I am doing. Hopefully I am doing something useful. There are a lot of challenges for the board so there is no lack of things to do. I have a fantastic group of people to work with so I'm actually just as happy as I can be.

Livingston

Anything you would like to comment on or any parting words for the 75th anniversary of the AAST?

Lewis

I commend the organization. It's done a great job in providing an academic focus for trauma over the years and I think it has adapted appropriately at different times. When it needed to loosen up the criteria, it has done so. When it needed to expand more into critical care, it has done so. I think it has been a great organization. I think it continues to do quite well and I hope it will continue to be as successful in the next 75 years as it has been in the first.