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Dr. Blaisdell, when you were a resident and junior attending, trauma was just thought of as part of general surgery. Is that a fair statement?

DR. F. WILLIAM BLAISDELL

Yes. That is correct.

LIVINGSTON

So how did it become such a large part of your career?

BLAISDELL

A substantial part of my training was at San Francisco General Hospital, and at that time the City of San Francisco had an emergency service which delivered all major emergencies in the city to San Francisco General. If they were later found to have private insurance and could be transferred, they were transferred to a private institution, but otherwise we received and took care of everything.

The city of San Francisco is only 49 square miles, and from about 1888, I think, it had its municipal ambulance service. The city ambulance service was the only one allowed to take care of casualties or serious sudden illness.

The city had five emergency hospitals and the ambulances were dispatched from those

facilities and if the injury was minor it was brought back there otherwise it was triaged to SF General.

San Francisco General at that time in my training was shared by UCSF and by Stanford. They alternated weeks taking all emergencies and during my training I was exposed to lots of emergencies. I was part of the Stanford residency.

LIVINGSTON

When did Stanford and San Francisco General part ways?

BLAISDELL

In 1960. Stanford Medical School was in San Francisco until 1959, when it moved to Palo Alto. A year later they severed their relationships with San Francisco General. I was raised on the Stanford service.

LIVINGSTON

Was trauma thought of as anything special?

BLAISDELL

Well, in days prior to the late '60s, San Francisco was a benign place and there were not much in the way of injuries. You couldn't drive a car very fast in the congested city, so there were no really major motor vehicular injuries. Local bar fights were the primary trauma and that involved assaults and stabbings far more than shootings. I'd say we might have had some kind of shooting once a week and a couple of stabbings a week.

But that was prior to all of the activism that occurred with the objections to the Vietnam War. We were the focal point for the regional protests against the Vietnam War. The interesting thing, of course, at that the same time it was discovered that one could treat psychotics with medications instead of institutionalization. It was about 1968–70 when all of the psychiatric hospitals were emptied and the patients were turned loose on the street with their illness supposedly "controlled" by medications. Both events happening at the same time suddenly changed the character of the city.

It seemed that violence quickly escalated and we had police departments being blown up. We had police officers being shot. There was an anti-establishment movement. The drug culture was introduced along with the insane being turned loose. People were taking these drugs and jumping off buildings thinking they could fly.

My tenure as a staff member started in 1956 at the General, and I came back as chief of surgery in 1966. That was also the introduction of Medicaid and Medicare, and it was thought that county hospitals were no longer necessary because of these federally funded insurance programs.

But within a year or two it was obvious that that was not true. With the increase in violence and the fact that SF General was the only emergency room in the city of San Francisco, it was clear that we were very much needed. Universities did not have ERs but had more

or less on-call places where someone could ring a bell and a sleepy nurse would come to the door and, if they had a doctor, the doctor would be called who might opt to see the patient in a little local facility, like Stanford Hospital. If not, they were referred to San Francisco General Hospital.

Emergency care didn't pay prior to the advent of Medicaid and Medicare. Emergencies were losing propositions and no private hospitals wanted them. It wasn't until the advent of federal insurance that the private sector began to realize that these patients could be charged and emergency rooms opened up all through the city. That was during the '70s.

I believe that over the course of, let's say 1968, the crimes of violence doubled. They doubled again the following year. They doubled the following year. We were confronted with such a mass of emergencies that we had no choice but to reorganize our surgical service to deal with casualties. That was the start of probably the first all city-wide trauma system in the country. The trauma, of course, came mostly at nights and on weekends, so you had to gear up and be sure you had 24-hour service for everything. We already had 24-hour laboratory, but we had to gear up our blood bank and we had to increase our anesthesia coverage to handle multiple casualties.

LIVINGSTON

Did you get any pushback from trying to do that from the private sector or the "powers that be" over the increased expense in covering the emergencies 24 hours a day?

BLAISDELL

Well, the private sector, once they discovered that emergencies could pay, a few administrators in the city made aborted efforts to try to break into the emergency systems, but it became apparent that the doctors in those hospitals were not at all interested in participating, so nothing really happened.

In one or two instances I can think of, one of our larger private hospitals kind of made an attempt to listen in on a police radio, and the thought was if an emergency happened near them, they would grab it. They got a few emergencies, but the care was disastrous. The threat of lawsuit and malpractice was so great that they folded their doors almost as soon as they opened them.

My biggest problem was getting adequate funds to support all these services. We very quickly got involved in all the politics of the city in order to improve our budgets. We were in the headlines all the time. We opened our doors to the press and explained what we were lacking and said, "We could have saved that life" if we had this or that. Those headlines and stories put pressure on the board of supervisors and the City of San Francisco to come up with the resources. They were constantly playing the politics.

LIVINGSTON

Who were your influences? Who were your mentors?

BLAISDELL

Well, from the standpoint of emergency or trauma care, my chiefs at San Francisco General, Carl Mathewson and in particular Roy Cohn, were my mentors.

Roy and Matty, as we called Dr. Mathewson, had come out of World War II with all the experience that World War II provided. Dr. Cohn himself covered our emergency week. For seven days, Dr. Cohn was always available on call for any emergency we had. When we had an emergency that required an operation, we had to locate him by phone and just tell him about the case—there was no paging system, no cell phones or anything. If he felt that we needed help, he would come in any hour of the day or night. He did that from the end of World War II until Stanford moved in 1959. So he was my inspiration from the standpoint of trauma care.

LIVINGSTON

What do you think is the best career advice you got?

BLAISDELL

Best career advice? Well, Richard Warren at Harvard—I rotated there for a year out of my five years of Stanford residency—opened up one of the first vascular services at the Boston VA. For various reasons, the local residents were not particularly enamored with the service because they didn't get to do much surgery. Dr. Warren did it all. Vascular was all brand-new, and I was fascinated by it, so I volunteered for several tours with Dr. Warren. Before I left I said, "Dr. Warren, I think I'd like to go into vascular surgery. What do you advise?" He said, "There is only one place to go. Go to Houston. Michael DeBakey and Denton Cooley are doing wondrous things there. I'll help you get a fellowship."

That was one of the first fellowships in cardio-vascular surgery in the country. With the help of Dr. Warren and my professors at Stanford, I obtained a fellowship there and trained in cardio-vascular surgery, which was excellent preparation for trauma care.

LIVINGSTON

What year was your fellowship, sir?

BLAISDELL

Nineteen fifty-nine to 1960. That was just the start of the real field. The first available plastic grafts just came in place. DeBakey introduced the Dacron graft just about that year.

It was an amazing place. DeBakey himself was doing something like eight major cases a day; five open hearts a day. I'm sure the next closest cardiac surgeon in the country was not seeing more than five a week at that time. They were amazing, very rapid surgeons, and the high volume experience was unique. I was very fortunate to be involved with that.

LIVINGSTON

What contributions are you most proud of and how do you think they influenced trauma care?

BLAISDELL

I think we were one of the first to recognize the acute respiratory distress syndrome. That was about 1964 in cardiovascular patients. Two years later when I went to the General, I saw the same thing in trauma patients. We started the first ICU in San Francisco at the VA Hospital to support our cardiovascular surgery, which was my first post after my training. None of the universities or even San Francisco General had a critical care unit at the time.

It gave us the opportunity to recognize this peculiar lung failure, and I think I published a paper saying these cardiac surgery patients are dying a respiratory death. Everyone assumed it was the stress of surgery. There was no direct ability to monitor blood gasses so you just prided yourself on observing patients. If the patient was blue, you recognized that they probably weren't oxygenating properly. The main thought of the day was that they were dying because the heart was failing. The reverse was actually true; their lungs were failing and that was affecting the heart function. We pounced on that.

LIVINGSTON

Wasn't that also the time that ventilators were becoming more available?

BLAISDELL

Our anesthesiologist absolutely refused to leave endotracheal tubes in patients even when we first established the critical care unit. It was a matter of personal pride to get the patient off the ventilator in the operating room. Getting that transferred to our ICU required a lot of convincing. In many instances, we had to hold on to the tube because we knew the patient was at risk for being in serious trouble. That was in 1960 and we managed to get access to a blood gas machine. It was a \$250,000 machine which was purchased to study gas exchange in emphysema. We showed that these patients were hypoxic and needed the ventilator. That was the advent of ventilator support, recognizing respiratory failure, and having a way to monitor blood gasses.

Some good stories came out of that. I advised one of my chief residents by the name of Frank Stuart, who became a famous transplant surgeon, to check the blood gas on a patient we had just finished a ruptured aneurysm. He did it and came back all out of breath and said, "Dr. Blaisdell, Dr. Blaisdell, the PaO₂ is 40." I said, "Stu, that's a venous PO₂. You have poked a vein. Go back and do it again."

He repeated it and it came back with the same value. I said, "Stu, let me show you how to puncture an artery." I put a needle into the femoral artery and out came a few spurts of dark blood and the patient arrested. We posted that patient and described all his microemboli in the lung. That was the key to our recognition.

LIVINGSTON

Anything over your career that you thought was going to be a really good idea that didn't turn out that way?

BLAISDELL

Well, I can recall thinking that some of these patients might be better kept cold to lower their metabolic needs. Even when we put them on ventilators the patients still died. It wasn't until PEEP came along that we really made major inroads in saving these patients. So my thought initially was, if we could slow down their metabolism the need for oxygen would be less. We made a few aborted attempts to do that. I still think it wasn't that bad an idea, but the problem of cooling a patient was not very practical.

I can remember Frannie Moore coming to visit San Francisco. When I went to Harvard for the year, I trained with Frannie for eight months and four months with Richard Warren.

He came out to the VA and we were very proud of the critical care unit. We were trying to keep this one patient cool and Frannie lambasted us over this idea. I was embarrassed by that and that was probably the impetus to my giving up the idea.

LIVINGSTON

What do you see as two or three major changes that have occurred during your career?

BLAISDELL

The first was the organization and establishing standards for prehospital services and care.

The second was organization of appropriately staffed and equipped emergency rooms to deal with trauma. The backup of the emergency rooms with the ORs and so forth that were necessary.

It was about 1976, I think, that Don Trunkey talked to one of our former chief residents named John West in private practice in Southern California. John joined the staff of some of the big hospitals down there and immediately became critical of the lack of any organization for trauma care.

Anesthesiologists were not in the hospital. They had to be called when something critical came to the emergency room. There were no blood bank technicians available. Everything closed down in the evenings. He said, "This isn't right," and they, of course, said: "Kid don't bother us. We're the best hospitals in the country. Look, we've got all these outstanding surgeons and all these outstanding facilities."

So John talked to Don Trunkey and they said, "Why don't we look at coroners' cases in Orange County and compare them with coroners' cases in San Francisco and see how many preventable deaths there are in Orange County?" Immediately they found ruptured spleens, patients bleeding to death under observation with simple injuries like ruptured spleen. They described a 25% preventable death rate in Orange County and found, I think, a 1% rate in San Francisco County. They wrote that up in the *Archives of Surgery* (*Arch Surg.* 1979; 114:455-60). Orange County initially denied this difference existed and was forced to bring in consultants to verify the data. The consultants actually upped the preventable death to something like 30%. That one study was the stimulus for the development of trauma centers throughout the country.

So Don's contribution is something that I hope you are recognizing as part of all this.

Don we say is the “Saint Paul” of trauma by carrying the trauma message worldwide.

LIVINGSTON

What parts of your career were the most rewarding for you?

BLAISDELL

A little hard to say. From an academic point, I was most productive during my first six years when I was chief at the VA in San Francisco, but received great satisfaction with the development of the trauma center.

LIVINGSTON

What is your career advice for young surgeons who want to have a career in trauma?

BLAISDELL

I would say that it involves night work and weekend work. That’s the downside, but it is also the most exciting. My comments would be it’s the last bastion of general surgery. I mean trauma is a black box. You never know what you are going to be dealing with so that makes it extremely exciting and a chance to use all your talents. You have to encompass the whole field of surgery. You have to know neurosurgery. You have to know urology. You have to know orthopedics in order to triage, to bring in specialties at appropriate times.

My only concern is that general surgery itself, and trauma surgery specifically, is breaking down, so that I find that when I have gone to certain hospitals around the country, if a trauma patient comes in and has a thoracic injury, you’ve got to call the thoracic surgeon. If the patient has a colon injury, you’ve got to call a colorectal surgeon, and so forth.

I find that specialty breakdown much less satisfying than the ability to handle it yourself. Open the chest or open the abdomen and repair anything you find from vascular to bowel. It is those changes that oldsters like myself decry.

LIVINGSTON

Do you think that the reinvention of trauma as trauma and acute care surgery is a very positive step?

BLAISDELL

Yes, of course. That keeps the trauma surgeon involved in all aspects of emergency care which I think is a real positive thing. At San Francisco General it always was the way it ran.

LIVINGSTON

Where do you think trauma and acute care surgery is heading? You’ve already seen so many changes, what is going to happen next?

BLAISDELL

Boy, I don't know. I worry about reliance on evaluation with CT scanners and so forth and sitting at home looking at all the data on your computer and deciding whether this or that should be done without any direct hands-on intervention by the surgeon.

I can just recall a recent personal experience when my wife had colon perforation from diverticulitis. She has lots of allergies so she was on steroids. And we took her into the emergency room.. I expected them to call a surgeon and operate on her right away. But, no, the emergency physician saw her first and he said they were going to have to get a CT scan before they can call the surgeon. So they got a CT scan. Nothing happened. I said, "Well, where is the surgeon?" He said, "Well, the CT scan didn't show anything, Dr. Blaisdell." I said, "Call the surgeon."

A young surgeon came down. He said, "The CT scan is negative, Dr. Blaisdell." I said, "My wife is on steroids. She has generalized peritonitis. Operate on her." And reluctantly they agreed to do so. A number of hours had transpired and, by the time they operated on her, she had generalized peritonitis and necrotizing fasciitis and nearly died. That is an example of how reliance on something like a CT scan rather than examining the patient causes trouble. That is my chief concern.

One of the things that bothers me is that the kids, young women, get exposed to undue radiation. In appendicitis now, you can't do an appendectomy without a CT scan.

LIVINGSTON

Anything you would change in your career, sir?

BLAISDELL

No, I don't think so. I had a very, very great career. I had what I consider great training thanks to my exposure to three different hospital systems: Harvard, Stanford, and Baylor.

LIVINGSTON

What are your current and future plans?

BLAISDELL

I'm retired. I do a fair amount of writing but a lot of it is family history. Right now I'm doing a book with one of my sons who is an editor for one of the big publishing houses about the Civil War because my great-great-grandfather left a diary of his experience with the 12th New Hampshire Regiment.

LIVINGSTON

What battles were the 12th New Hampshire in?

BLAISDELL

Well, Fredericksburg, Chancellorsville, Vicksburg, Cold Harbor, Petersburg. And his regiment

was the first into Richmond near the end of the war.

So it was right on the top of everything. I have the regimental history and I have my grandfather's diary. It was extremely exciting to read all this history. We are basing the book on the nine guys from Pittsfield, New Hampshire, who were the same age and joined the 12th New Hampshire at the same time. The regimental history tells me what happened to all nine and my great-grandfather was the only one who emerged to retire with his regiment at the end. One died of disease. Three were mustered out because of disease. One was killed in action. Three others were so badly wounded that they couldn't come back.

The novel is following their careers. Of course we are making up the personal communications, but it is based on what we've learned about how men functioned at that time. I'm having fun with that.

LIVINGSTON

It's amazing that your great-great-grandfather kept a diary and that it survived intact all these years.

BLAISDELL

Well, better yet, it has a bullet hole in it. He was wounded severely at the Battle of Cold Harbor (May 31 to June 12, 1864). The family legend is that he was saved by the diary in his breast pocket. But examining it, it's clear the bullet went entirely through the diary and he suffered a chest wound but fortunately survived. I had fun following where he ended up. I got his retirement records and I could find out exact hospitals in sequence. He first ended up at Campbell Hospital in Washington, D.C. two days after the battle. It's kind of fun to imagine how he got there. We do know he was transferred by river steamer.

LIVINGSTON

Anything you would like to add about the 75th anniversary of the AAST?

BLAISDELL

No. I'll be there.