

SPECIAL TALK: AN INTERVIEW

An Ongoing Series

You Never Know, Until You Know, and Then You Know

An Interview With COL (Ret) John F. Kragh Jr, MD

Interviewed by COL (Ret) Andre Pennardt

Please provide our readers a brief overview of your military career.

Thanks, Andy. My father was a policeman, and the family had some firemen or military Servicepersons, so, as a boy, such service was my aim. I went to West Point for college then to Uniformed Services University for medical school. I interned at Walter Reed. I went to the Ranger Battalion at Fort Benning for 3 years when we missed the Gulf War and felt our team missed a Super Bowl. I went to orthopedic residency at Fort Gordon, as the Rangers soon went to Somalia. I longed to be with the team. Four years of orthopedics at Fort Bragg were busy. Our research there got the attention of Fort Sam Houston, where I went in 2001. I remain.

What do you currently do?

I research prehospital bleeding control. If someone said, years ago, that was to be my job, I would have laughed.

How did you become involved with the Committee for Tactical Combat Casualty Care (CoTCCC)?

In 2008, I spoke to the committee about new developments in tourniquet use. In 2006, in Iraq, Dr John Holcomb and I were busy in Baghdad. We saw a lot. We gathered data then and had just finished its analysis. Results were timely and a big win for the committee. The original deduction of TCCC was right: context matters—trying to do ATLS [advanced trauma life support] on a runway while being shot at was nutty. ATLS was a default approach for years, but it presumed civilian care, because it started with an orthopedist and his family as patients; [they had] crashed their plane on the Great Plains of middle America. Reading of SEAL firefights during combat at Punta Paitilla Airport in Panama made me think: 'Toto, I've a feeling we're not in Kansas anymore.' The Operators and the committee were right. We empirically confirmed a part of that.



“Someone with imagination and grit can own a lane like no one else has ever owned it before.”

— COL (Ret) John F Kragh Jr

What motivated you to focus on the use of tourniquets in the tactical environment?

Palmer died. It was a cold, dark night in the Mojave, 1992. Big operation, live fire, seven hits. Marines, Air Force, Rangers, 160th, Bragg brothers. I was with the main element. Elsewhere, Jeffrey Palmer landed in a Blackhawk helicopter. He was a corporal, a team leader of four Rangers in two pairs of a machine gunner with an assistant. He exited with one pair out the left door and the other pair exited out the right door to jointly lay down crossing fires promptly onto their targets. Soon a bullet went through his thigh above his knee and took out a length of both his bone and artery. A few bloody minutes later, the rescue helicopter and PFC Richard 'Doc' Strous were on the ground. He did everything right. He had just finished a Special Forces trauma training course the prior week, so he knew all the right stuff: dressed, splinted, gave 2L of intravenous

fluid, packaged, and transported to the base hospital within 30 minutes after injury. Palmer got no damage control, like a tourniquet, because damage control was then just an unproved idea used in a couple of cities. He got a couple more liters of fluid, an external fixation of the thigh bone, an attempted artery repair, and he bled to death. Everyone did everything almost perfectly by the book, but life or death is a close-run thing. It turns out the research then of such fluids was fairly clear that 2L was the limit, and the teaching in ATLS was that. However, an intuition was that if 2 is good, then why is not 3 better? The research was clear that a lot of fluid is a good way to bleed dogs longer until they are exhausted and die, but translating that judgment to learners was weak. To better translate is why I am a researcher now, so fewer have to lose their husband, son, buddy. Palmer's death, for me, was my first pivot from serving the operational health

community in general to eventually focusing on prehospital bleeding control. We rewrote the book. We do things differently than we did then. So we may less often visit Arlington National Cemetery.

What do you think is the most notable achievement of TCCC during ongoing combat operations?

I am glad that the committee and community were unsatisfied with how things were, so they kept trying to improve things. Not being satisfied with just getting work done but actually trying to improve people's skills, broaden experience, reform policies, update training, fix snags with kit and logistics, rewrite doctrine, and not wait for someone else to do it. The most notable achievement is perseverance with vision, as shown by Frank Butler and Bill Donovan.

What do you consider the greatest obstacles to achieving a zero preventable death rate on the battlefield? How would you address this?

Human nature tends to obey the law of least effort. Best care is hard because it requires multiple essentials and lacking any one is suboptimal. Getting to the best practical outcome for each patient is what best care aims for, and truly understanding how to do that requires more vigilance than one would first assume. We have figured out a lot of how to control bleeding, yet it is still the big killer today. Furthermore, we widened our scope to ponder prolonged field care. Truly understanding is the greatest obstacle. Knowing ourselves, our community, our patients, our systems, our gear. A little understanding does not cut it. We are to do better. We are to own our own competence. We are to seek both new opportunities and what our assumptions miss.

What do you view as areas where TCCC can be further improved?

Everything is a candidate to me. The tourniquet is easy to compare with. So we have a tourniquet guy. Who is the airway guy? The intraosseous gal? The chest-tube czar? What is the learning curve for nasopharyngeal airway intubation? Has anyone deconstructed the task of needle decompression? XSTAT usability studies*? What are the metrics of performance for triage judgment? How good are we at the skill of bleeding assessment? Any first aid task or TCCC-related item has open questions with a need for a better understanding through relevant scholarly work. Taking a problem-solving approach is like engineering: a practical application. It does not need to win a Nobel Prize. If anyone needs a guide to such work, Google a decent tourniquet study and ponder a parallel path. Tourniquet science, to me, is both aspirational and inspirational. I aspire to do it better, and I hope it inspires others to do the like in the lane of their choice. Someone with imagination and grit can own a lane like no one else has ever owned it before.

What do you consider the greatest challenges to the work of the CoTCCC?

Relevance development. Relevance does not manage itself. The committee may want to ponder how it stays relevant as things evolve. Evolution can be quick, so beware. I think the sergeants are key, the people on the ground now, the people actually doing it today. Keep them close and heed them to keep everyone relevant. To me, they represent the end-user best. I cannot talk with lay [nonmedical] Soldiers much, and so I seek their voice through the sergeants. We all work to self-develop because the need is plain: We need to improve.

*XSTAT is a hemostatic device (RevMedx, <http://www.revmedx.com/>).

Please provide your assessment as to the differences between the civilian and military tactical environments. What obstacles, if any, do you see to adapting the military's lessons learned to casualty care in the civilian high-threat environment?

Base rate. The rate of problems like limb-wound exsanguination differs. The rate in war is high. Peace is low. Therefore, the burden of injury differs. The need for intervention differs, as does the yield on resourcing, like training and supplying. Tourniquets were a no-brainer, in hindsight, for land warfare, as the need was big, and the fix was worthwhile. But the jury is still out for civilians. Do not neglect the base rate. At the same time, the psychology of aiding someone in peril is a strong story in both military and civilian communities. Regret of not intervening yet losing someone we did not need to lose—that is an even stronger story. Morale and mindset are plainly valued, but we should talk more of them. We saw that the military was not one group, but 39,000 local governments in the United States is a bigger barrier to enactment.

Do you have any recommendations on how to more effectively evaluate civilian tactical incidents to improve casualty care guidelines?

Data. First thing is to get some data. You really cannot judge things well until you have worked through enough decent data. You never know, until you know, and then you know. It sounds circular, but it is not. To me, it is straight, because what we intuitively think and what we deliberately think can both trip us up. We are to work through both to know something by that fast, intuitive side of the brain and also by that slow, deliberate side of the brain before we understand the whole thing. Sometimes the breakthrough comes with a change in how we measure, and new metrics of tourniquet performance helped the military a lot. Civilians really have been cornered and may have not seen this challenge coming. I think if we truly do our jobs well, we can make the jobs of others harder. We changed tourniquets, the training, the logistics, and so the rank and file had to adapt to the disruptions in thinking, in practicing, and in resourcing. The military did its tourniquet job well, which made the civilian job harder. We are to come to terms with such cold, hard facts.

Do you have any other comments you would like to share with our readers?

Thanks for the privilege of participation. For me this service has been the role of a lifetime. We are lucky that in our lifetimes, we improved in aiding others to hold onto their lifetimes.

Dr Kragh has worked since 1981 for the US government, and most of the work was relevant to the operational health community. His notable caregiving experience included tourniquet use for many casualties in the Baghdad emergency room when the war was busy. His research and teaching have also been most notable for bleeding control.

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