RSA Resident Editor's Letter

The Advancing Role of Technology in Emergency Medicine Education and Training: Interview with Scott Weingart, MD

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This article marks the third in a series that highlights the use of technology in emergency medicine (EM) education and the resources that will make your learning more efficient and effective. In previous interviews with other leaders in EM education—Dr. Mel Herbert and Dr. Amal Mattu—we learned how to incorporate the use of websites, podcasts, and EKG videos to stay current with medical information and save more lives. Continuing that theme, I had the pleasure of interviewing Dr. Scott Weingart, an ED intensivist and host of one of the hottest EM blogs and podcasts, EMCrit (www.emcrit.org).

Dr. Weingart is an emergency physician with fellowship training in surgical and trauma critical care. His career goal and the purpose of his blog and podcast are "to bring upstairs care downstairs," that is, to bring ICU-level care to the ED so that patients receive optimum treatment the moment they roll through the door. He is a rising star among EM educators, and his effective teaching methods in addition to his focus on important critical care topics have made him very popular on the national lecture circuit. He uses technology to provide a forum in which cutting-edge EM education is disseminated for free to an audience of thousands of international followers. In this interview, he drops several pearls of wisdom that are as useful to medical students interested in EM as to seasoned attending physicians looking to keep up with new literature and best practices.

AF: *Please start by telling us about yourself and how you became an ED intensivist.*
Dr. Weingart: When I was in med school, I was deciding between anesthesia and emergency medicine because I knew I wanted to do critical care. The question really was whether I should follow a dedicated pathway. Anesthesiologists can become intensivists, or you can go into critical care after internal medicine, surgical, or emergency medicine training. Ultimately, I thought emergency medicine would give me a more broad-based exposure to everything. That's the route I went, and I don't regret it. I think that's a great way to go. I went to emergency medicine residency at Mount Sinai in New York, which is a four-year program. Then I did a one-year trauma and critical care fellowship at the Shock Trauma Center in Baltimore.

When I got out—and when we all get out—we ideally want to work in the ED but also be able to use everything we learned during critical care training. I did that by working in both the SICU and ED at Elmhurst Hospital, the trauma center for Queens, New York. After a few years, I realized that having two bosses was really tough and that I really loved ED critical care. I now do almost all of my shifts in the ED Intensive Care Unit we built at Elmhurst, providing critical care in the ED.

AF: *Not every ED has dedicated intensivists staffing the department. How did you manage to meld EM and critical care into what sounds like the perfect job for you?*
Dr. Weingart: A huge shortage of ICU beds makes that very easy. No matter how much hospital administrators want the patients upstairs for the ICU folks to start working on them, that can't always happen. Then the politics around, "We're just going to do a lot of stuff that you do upstairs downstairs," all disappeared because you can't let the patients languish. You just can't do it.

AF: *Are a lot of other people you work with similarly trained in ED critical care? How does your department work, and how can it be adapted in other departments?*
Dr. Weingart: We call ours a hybrid unit. Today, most big EDs have a resuscitation area that is staffed by an attending physician for at least part of the day. That's what they do for their time in the ED during that shift—they staff all of the resuscitations. If you have that system already in place, and you have all the equipment, and you just stick one ED intensivist in the program, then it becomes very much like having a toxicologist. When you get one tox guy, everyone's tox care improves.

ED folks are perfectly capable of doing critical care in the emergency department. That's what we're trained for; that's what we're built for as a specialty. We've lost our way a little bit, but that's what we are built for. So, if you just get one ED intensivist in there to make protocols, to train nurses, to make everything doable, then all the ED residents and attendings are more than capable of making it happen when you're not there. But, that's what makes this possible—starting with an ED that has a resuscitation area and a dedicated staff.

When I came to Elmhurst, they already had a resuscitation area. They already had nurses and an attending staffing the area. At that point, it was for only 10 hours a day. The hard part is typically convincing the ED that you need a resuscitation area and that it needs to be stocked with equipment similar to that used in critical care units and staffed with skilled nurses. The next step is to convince them that you need an attending there a lot of the time with a dedicated resident. Once you've done those things, if you stick an ED intensivist in the mix, you've got money. That's all you need.

AF: *Sounds ideal for anyone who is interested in practicing critical care in the ED. The opportunities for fellowship training in critical care seem*

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to be increasing for EM-trained physicians. What do you think the role of technology should be in training the next generation of ED critical care specialists? How did you use technology during your training to supplement your own learning, and how are you using technology to help you teach?

Dr. Weingart: In today's world, technology is critical for effective learning. Since I was a med student, I have put all the articles I read on a website just for me. I called it EMBER (Emergency Medicine Based on Evidence and Research). I wasn't disseminating it—it was intended to help me document my learning. The primary reason I did it was because if you don't write down what you read, it rapidly disappears. It was even more necessary for me because I was a challenging resident (i.e. an arrogant bastard). When you tell your attending, "Well, actually no, there's an article that says something a little different from what you're saying," and you can't produce that article within seconds, you sound like an idiot. When you say, "I think I read somewhere—maybe it was *New England Journal* or *JAMA*? I think it was three months ago," the attending is thinking, "This guy's just making crap up. Why is he even talking about this stuff?" On the other hand, if you say, "Well, here's the reference. I'm not going to say that we have to go this way, but if you're interested, this is what it said." They might still think you're an arrogant bastard, but at least they don't write you off as being dumb.

I needed the ability to generate references instantly. The website was there and I was just chucking through stuff and adding to it, and it got popular and evolved into what is now www.crashingpatient.com (a free webtext of ED critical care topics). I don't heavily publicize it or anything. It's still mostly just for me, but thousands of people are now looking at it each month. It prepared me to start online publishing and led to the start of my podcast, EMCrit.

AF: *Tell us more about EMCrit. How did you decide to start it?*

Dr. Weingart: About two years ago, I realized that all the lectures I was presenting to residents were going nowhere after I used them. You teach and then you don't use the material again for another three or four years. I would use it for grand rounds occasionally, and okay, I'm hitting a few people there, but I wasn't doing as many grand rounds before EMCrit, because no one knows your name until you're on the circuit. I realized that I was listening to a lot of non-medical podcasts, and I've always liked them, and I have a big mouth, so I thought I could do this. So I tried a few. It took a little time to get listeners, but thanks to my friends at the Life in the Fast Lane blog (www.lifeinthefastlane.com) and to the other folks in the community of emergency medicine blogging and podcasting, more and more people got word. Now, it's pretty huge and that actually cycled back to the traditional way of medical teaching. I've taught at ACEP for the past two years and at several other conferences. That happened because of EMCrit. The podcast opened those doors for me.

AF: *That's fascinating. I believe it's a sign of how rapidly things are changing in academics due to the influence of technology. The advent of blogging and podcasting has made education more accessible and learning much more efficient. Providing open access to great educational material the way EMCrit does allows people to learn at their own pace and stay up to date. What plans do you have for the future of EMCrit?*

Dr. Weingart: The next phase is to make the material more interactive. A residency could commit to listening to one of these podcasts and then have me for a "virtual grand rounds" as an alternative to a live lecture. I love teaching live and in person, but it's just crazy busy and traveling is not easy. It's a big time commitment, it costs a lot of money, it costs the environment, and it has to be arranged almost a year advance. Why not say, "Scott, after we listen to this podcast as a residency, could you spare a half-hour for a video conference call?" This way, in a short half-hour session, we can address all the questions that came up and have a live group discussion as a residency. With that, now you have something, because you combine the advantages of asynchronous learning with the interaction of live group discussion. One of the problems of podcasting compared with traditional lectures is that it is less interactive and therefore more difficult to answer questions, get feedback, and make sure people really understand what you're saying.

The next step will be to build a home studio that will be able to carry out that interaction with good quality. If this tech stuff gets worked out and if we figure out how to do it easily, then there's no reason not to have all the people who are experts in their respective niches using this method to present the best of emergency medicine education. Why not be able to call Rich Levitan and say, "Rich, we had a tough intubation using the Levitan scope. Maybe you could give us some tips about it." I don't mean to underestimate the power of having someone being there in person because there's something about a live presence that you can't convey in this medium, but you can come pretty close. So, breaking down those barriers is the next step.

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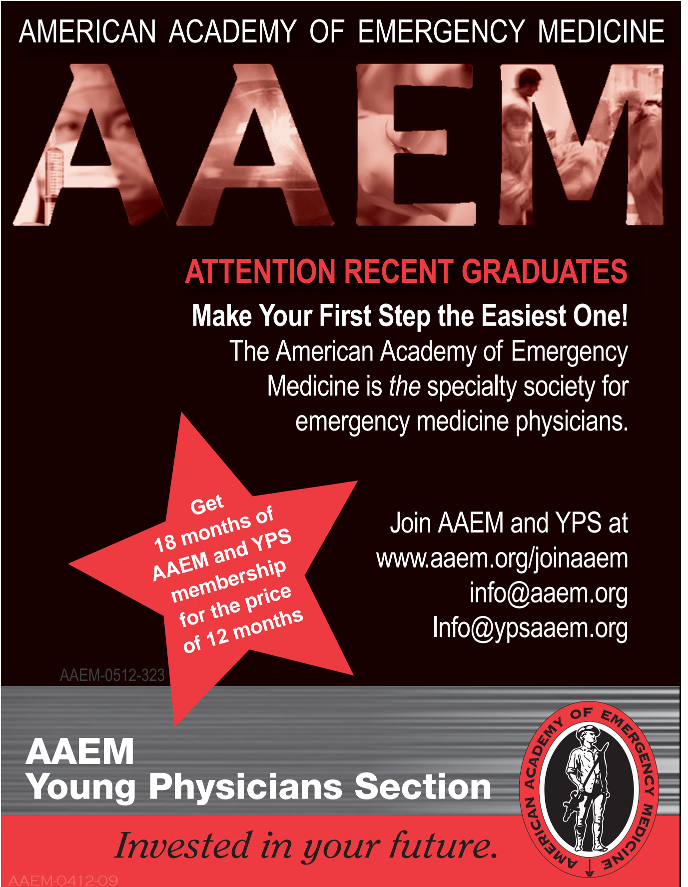

AF: *Clearly, you have incorporated technology successfully to supplement your teaching. What advice do you have for new educators who would like to start using technology to improve their teaching and practice?*

Dr. Weingart: For me, it's three tiers. Tier one, which everyone in medicine should be doing at this point, is to take control of your Web identity. You need some sort of Web presence, so that if I search for your name and stick an MD at the end of it, you show up in the way you would like to portray yourself. If you're tech-savvy, that might be a hand-coded profile page like what I have, but you don't need that. It could be anything. It could be your Google profile page, which is absolutely free, easy to set up, and search engine friendly because it's Google. But you have to do something; if you don't, something else will show up when people do that search. If I Google someone's name and get those horrible for-pay doctor evaluation services as the first 20 links and then maybe a yearbook photo from when the person was a senior in high school, then I know that person is not in the game.

If you're smart, you take control of your identity by using multiple social media sites: something on Facebook and something on Twitter. Because then, when someone has a great opportunity for you, they will be able to contact you. If I have to search for more than five minutes for a way to contact someone, I know they have no idea. If you search for me, you'll find 17 means of contact and they all feed into the same Google account. So take control of your Web identity. That should be done today. It takes about 15 minutes to put up a nice picture of yourself and describe your niche. There's no reason and no excuse not to do it.

Tier two is mastering social media use. There's so much good stuff out there that's so ahead of what you can get by reading journal articles or waiting for textbooks to be published. If you're not doing that, you're not cutting edge anymore. And I promise you, if you're an educator, your residents are doing it, which means they're now smarter than you; which means they will see stuff nine months before you do, and you're no longer in the game. If you think it's not going to be obvious to the people you are supposed to be teaching, you're wrong. So, step two, which everyone in emergency medicine should already be doing, is using Twitter and blogs to get the cutting-edge education. Nowadays, you don't need to read a journal much anymore because guys like Ryan Radecki of EM Lit of Note (www.emlitofnote.com) and Rob Orman of ERCast (www.blog.ercast.org) are looking at all the key EM articles and reviewing them. It really just depends if you're a visual or an auditory learner. If you're listening to the podcasts and reading the blogs, honestly, you don't need to lift a journal. You can, but you won't gain that much or lose that much either way. If you just state, "I'm never going to read another journal for the rest of my career, but I'll spend 20 minutes each day checking the newest blogs and I'll listen to a couple of podcasts each week," I think you'll be better educated than by reading that journal.

Tier three is producing, and a lot of people aren't going to go there—it's hard. It's getting easier, but the hard part is not necessarily the technology; that can be a barrier, but that's easily overcome. The barrier is content. Everyone thinks they have something to say and everyone does for about three months, and that's where most of the blogs fade. You start realizing, "Oh, crap, I need to be on some kind of schedule here because people stop reading if it's very intermittent and that means I have to keep producing," and it becomes work. It really becomes a job, and for most people, it isn't worth it. And that's fine.

There's no need for every single person in the universe to create a blog or a podcast. But that doesn't mean you can never publish anything online. If you prepare a grand rounds lecture that's just fantastic, make sure you record it. There are myriad places where it could be posted so that it has longevity and thousands of people can hear it. So, you don't necessarily need your own blog and podcast. For instance, send it to Free Emergency Medicine Talks (www.freeemergencytalks.net) with Joe Lex. Absolutely free: He'll post it, he'll host it, it's there. Now you can link to it for your residents for all time to come, and you don't have to repeat that lecture. You could do something else and know that other people are going to hear it from outside your residency. Or, if you come up with some great idea that you really want to get out there and it's EM critical care related and you record something, I'll put it on my podcast. Or it will go on EM:RAP. As long as it is good content, I am sure there will be a place for it. The point is that you don't need to have your own blog and podcast to occasionally develop a piece of educational material that should be enduring.

AF: *What advice would you give to current residents and students who are looking to make their learning as effective and efficient as possible?*

Dr. Weingart: It's a great question, and I don't necessarily know the answer. I know what has worked for me. I've done a bunch of reading and

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research on learning styles, and I don't know how much of it is true and how much of it is just crap. I learn from books. If I found a resource like www.crashingpatient.com, I would think, "This is wonderful," and I'd start reading it and I love it, but I wouldn't get as much out of it as if I had done the work myself. There's something to processing source information on your own—information that is not broken down for you too much.

Let's take UpToDate (www.uptodate.com) as an example. It is a beautiful resource, but I think our internal medicine friends are getting dumb as a result of UpToDate because it's so good. It's someone really smart taking away all the formative parts that got them there and giving you the information. When people read summaries and use them as guidelines, they risk losing the ability to really learn the information and know how it was intended to be applied. Maybe they'll extract the important things they'll need for a patient, but I guarantee you, if you ask them a week later about the topic, most of what they read is gone because they didn't process it. It's nice to have a resource that lets you look something up in real time—call that "just-in-time learning"—but it's not the same.

If I had my druthers, I'd send medical students to read the old stuff. Read "Cope's Early Diagnosis of the Acute Abdomen," read Osler's stuff, read the old-school docs because of their beauty and wisdom. The third-year students who want to go into emergency medicine should be reading *Annals of EM* every single month and assiduously writing down what they don't understand so that they can talk about it with the residents when they're actually rotating. Because then, instead of the medical students being annoying "hang-arounds", all of a sudden they are asking really good questions and sounding smart. They're going to do better in their rotations, and they'll make the resident realize, "Oh, wow, I didn't know that myself." Then, maybe they'll ask their attending, or maybe they'll look it up. That is far more powerful than going to a pre-digested source. But at some point, you won't have time for that unless you're insane like me. When you no longer have time to be reading the primary literature, EM:RAP (www.emrap.org) is the best emergency medicine continuing education out there. You have to pay for it once you're an attending, but it's free for residents and students with an RSA membership.

I think EM:RAP is a quality product. My conflict of interest is that I'm one of the EM:RAP speakers, so I'm obviously biased. But I think it's an enormously powerful product for the people who are not reading journals anymore, because co-host Mel Herbert is really getting the cutting-edge stuff. Obviously, I think my blog is a good place to go for emergency critical care as well as Cliff Reid's www.resus.me. The Life in the Fast Lane guys link to everything else good in the universe. So, if you are reading Life in the Fast Lane, you will come across everything you might need in all the other blogs. You should read the other blogs, too, because they're amazing. But if you are time-limited, listen to a few podcasts and read Life in the Fast Lane, and you'll be in very good shape.

AF: *You mentioned that you're insane, but really, how do you keep up with this cutting-edge curriculum that you present on EMCrit? How is it that you stay up-to-date, and what is it that makes you successful?*

Dr. Weingart: I don't know if it makes me successful, but I read everything! When I say that, I mean anything tangential to emergency medicine or critical care in journal form. Obviously, I don't read every single article, but I scan the abstracts. If the information is relevant to us, I read it all the way through. If a monograph or a book looks relevant, I'll read that, too. I spend an enormous amount of my free time reading, but that's not healthy.

What we're finding in the social media world is that if you think you can't miss anything, that's a pathway to insanity. Twitter is the perfect example. Twitter was never meant for you to read every Tweet that's posted by the people you follow. You're supposed to follow a bunch of people, look at their posts when you can, and not necessarily worry about what you're missing. Well, I worry about what I'm missing, so I follow only a small number of people and I read every single Tweet they write. That's not healthy; that's not really possible in our generation. Our generation has too much media to consume, and that approach is not sustainable. I'm hanging on by my fingertips trying to make it possible, but it's not. If you want to do this, you basically better give up any other hobby or free time activity aside from work and reading. So, I don't think my path is a smart one or even a possible one.

AF: *On behalf of all the people who follow your work, I thank you for your efforts. Your willingness to use technology to provide open access to cutting-edge emergency medicine topics is commendable and much appreciated. There are great educators who teach and spread their knowledge on an individual or small group basis, and others like you who have created a forum for widespread dissemination of quality education that helps save lives.* ■

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