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Introduction: Social Media and Medical Education Come of Age



On January 9, 2007, Steve Jobs reached into his pocket and pulled out the future.¹ The day he introduced the iPhone he ignited a revolution that is still changing everything. Putting a computer connected to everyone and the entirety of the world's knowledge in every pocket has permanently and irrevocably changed humankind.² The ability to easily and efficiently connect with people across time zones, geographic borders, institutional silos, and disciplines has resulted in new relationships. Social groups are forming around ideas without the friction of geography. For example, early in the coronavirus disease 2019 epidemic, rumors disguised as reasoned scientific facts told people to stop their angiotensin converting enzyme inhibitor and angiotensin receptor blocker because these drugs accelerated the disease.^{3,4} Sparks and Hiremath assembled a global team of renin-angiotensin-aldosterone scientists and epidemiologists from their social network to critically appraise the science emerging from the initial epidemic hotspots. They were able to quickly establish a web presence presenting and interpreting the latest data and providing reasoned guidance. This then was followed by the rapid publication of three reviews on the topic within 3 weeks of the data emerging.⁵⁻⁷ Having an established social media presence allowed the team to quickly come together and, using the tools of social media, allowed the team to quickly find, appraise, and distribute conclusions. Without the connections of social media none of this would have been possible. The pandemic crisis is a dramatic demonstration of how these social media tools allow people to meet regularly to discuss emerging research and exchange ideas.⁸ This is a major shift, currently altering every aspect of our life, including medicine and medical education.

Nephrology has been a leader among medical specialties in recognizing and adapting to the fully interconnected reality of ubiquitous social connections.⁹ These social and connected tools range from blogs, to Twitter, to video sites such as YouTube and TikTok, and to podcasts. They open up multiple opportunities to augment and enhance medical education. There is not one way to teach medicine, but rather hundreds of techniques to

solve the various challenges that medical education poses. In this issue of *Seminars in Nephrology*, I have selected experts in the use of social media to discuss recent advances in research and to deliver educational resources in medicine. We are now in the second decade of this connected revolution and some early opportunities, such as physician-authored blogs, have failed to make the impact we thought they would, while other ideas are solidifying into clear winners.

One of the themes that is new to social media-based medical education is privacy. The early social media approach to medical education, primarily blogs and tweets, were entirely transparent. Everyone could see your comments, mistakes, and foibles. Although some thrived in this open environment, it intimidated others, discouraging them from participating. Today, we are seeing apps and messaging platforms provide a degree of privacy and intimacy to medical education that the open platforms cannot. I expect this to be a growing presence in this space. Pandya et al explore some of these apps while Jennie Lin explicates one in particular, the private group messaging platform of Slack. Gates Colbert looks at email newsletters as an old form medium that is finding new life.

Another clear winner is the journal club. It is remarkable that one of the oldest forms of medical education, the journal club, has transitioned so gracefully from the conference room to Twitter. Journal clubs work well with the conversational nature of Twitter and serve the same purpose of promoting as well as conducting post-publication peer review. Stoneman and Hiremath discuss the transposition of journal clubs into social media.

In the first decade of social media there have been repeated attempts to bring traditional lectures to social media, but the information density and duration have made them a poor match for social media. However, the audio-only format of a podcast has found success. Rodman and Trivedi discuss the rise of the medical podcast.

Twitter has been a huge part of the growth of medical education on social media. O'Glasser et al examine the utility and growth of Twitter as a whole while Tony Breu elegantly shows how complex lessons can be delivered by threading a series of tweets together, in the form of a tweetorial.

One of the hallmarks of social media is tremendous democratization, allowing anyone to contribute.

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However, this means that content can be posted without rigorous fact checking or reviewer and editorial oversight. Thus, the quality of content posted online can be variable. Chan et al review the challenge of rating blogs and podcasts and provide a framework to allow individuals to know how rigorous the content has been vetted.

Finally, Ramakrishnan et al examine a year-long internship designed to empower medical professionals to gain skills, confidence, and knowledge to become public voices and develop free open access medical education resources using social media.

These articles represent only a sample of what social media can provide learners. Video lectures and instructional videos are transforming both the preclinical training of medical students as well as how residents prepare for procedures. Social media is being used by patients to reach out and solicit organs for transplant. In addition, social media is becoming the battlefield where social advocacy is waged. The internet and the smartphone have changed our relationship with information. This is inevitably going to change medical education in ways that will make it more diverse, adaptable, and flexible to individual needs.

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