

Adapting Medical School Curriculum to Millennial and Generation Z Learners

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The millennial generation—people born in the early 1980s to 1996—makes up a majority of today’s medical students. These young people have grown up with the internet and an almost continuous source of information. They are more diverse, socially responsible, and virtually connected than any generation before them. Millennials also have different learning styles than students in previous generations. Many have shorter attention spans, are used to instant gratification, and want learning to be connected to technology. As such, teaching millennial learners has to adapt to their strengths. Optimal education for millennial learners packages information into bite-sized pieces and provides interactive, experiential, and collaborative learning. The 5 R’s of optimal education for millennial learners provides a framework to adapt existing curriculum (See Box).¹

Generation Z learners (born 1997-2012) are beginning to matriculate in medical school, and they, too, have a penchant for interactive learning, heavy on technology.

Traditional medical school curriculum is full of didactic lectures designed to transfer massive amounts of material from the instructors to the students. The instructor usually creates a Powerpoint presentation with large numbers of slides covering a topic in the basic or clinical sciences. Previous generations of medical students have learned this way, studied the material, and taken tests. And while this learning method worked well for Baby Boomers and Generation X students, it does not match the

Box. The 5 R’s of Curriculum for Millennial Learners¹

Research-based methods	Need a variety of different learning approaches; new focus on how each individual learns rather than just standard didactic transfer of information.
Relevance	How does the information relate to their lives and what they will be doing in the future?
Rationale	Need to understand the “why” of content that they are learning.
Relaxed	Low-pressure environment. Millennials do not like hierarchy and enjoy learning in a more casual situation.
Rapport	Focus on personal relationships between the teachers and the learners. Learning in small groups or working in teams.

learning styles of either Millennial or Generation Z learners. Learners from these younger groups want alternative methods of information delivery, in addition to traditional lectures. So, the instructor can add videos or supplemental online content to their slides. Use of cases and clear examples of how the material connects with the outside world is effective. Young learners want the material to be relevant to their lives and the world. So, a lecture on the Krebs cycle should have some clinical application or an example of how the knowledge can be used in a practical way. A focus on milestones and competency-based assessment methods may be an optimal adaptation for medical school curricula.² Millennials have grown up receiving almost continuous feedback; they want direct, frequent feedback from their teachers, and assessment of competencies is a good way of providing feedback.

Mentors for Millennial and Generation Z residents also must adapt to their needs.³ Mentorship

will be most successful if it is done in a flexible way. Instead of scheduling appointments, many millennial residents and fellows desire access to their mentors in a much more relaxed and fluid manner. They also look to peers and other team members for mentoring.

A paper in this issue of the *WMJ*⁴ describes a study where the researchers surveyed both medical students and faculty to assess how each group perceived how much of the curriculum was lecture only and how much was delivered via alternative methods (like online content or virtual lecture). Interestingly, the faculty felt that they were using alternative methods of information delivery much more than did the students. The students were frequently looking for supplemental information online, which the faculty did not know about. This mismatch in experience underscores the difficulty in teaching transgenerationally.

Another paper in this issue looked at a peer-

Continued on page 5

COVID-19 Outbreak Associated With Ice Fishing

Ice fishing is a popular pastime in northern Wisconsin and Minnesota. Makeshift villages show up on area lakes every winter and remain there most of the winter. Wisconsin mandates that ice houses must be removed from lakes by March 15. This may be the first documented outbreak of COVID-19 associated with ice fishing.

During my regular clinic on Friday, January 29, I was assigned to do COVID testing. Our small clinic at a critical access hospital allows asymptomatic people to be tested by laboratory personnel, but symptomatic people are supposed to be seen by a provider. The first 2 patients were a couple in their 30s. They requested testing after finding out the previous day that someone with whom they had been ice fishing on a lake in northern Polk County, Wisconsin, during a family outing on January 23 had tested positive. Both patients had started to develop mild upper respiratory symptoms on January 27. Rapid antigen testing (Quidel) was positive for both patients. The family then brought multiple other members to our clinic over the course of the day and 9/9 tests were positive.

The patients ranged in age from 4 to 67 years. No one reported sharing beverages, but several meals were consumed and they used 3 ice houses. In total, 11 people were affected, including the presumed index case who was tested early in the week with a polymerase chain reaction (PCR) test at another clinic. Three patients were pediatric (2 of whom were asymptomatic). Subsequently, all 9 positive rapid antigen tests were confirmed positive by a send-out PCR test. Further, genetic analyses indicated that 8 samples shared very similar sequences (0-2 mutations apart), suggesting a common source and/or direct transmission (4 had identical sequences).

When I saw the 67-year-old family member, I alerted her to the availability of administering

monoclonal antibodies to mitigate the risk for severe disease. Her 69-year-old husband had tested positive at a drive-through site in Polk County, Wisconsin on January 28 but was not notified about the availability of treatment. He then came into the office and was evaluated as well. He did have a symptomatic hypertrophic cardiomyopathy but was otherwise healthy. After receiving an exam, being provided with the appropriate educational material, and a discussion of risks and benefits, the 67-year-old patient and her husband received infusions of bamlanivimab on the same day.

The 69-year-old husband reported some low-grade fevers and chest pain overnight, such that he presented to our emergency department the following day. Because of an abnormal electrocardiogram and a mildly elevated troponin, he was transferred to the Twin Cities (Minneapolis/St Paul, Minnesota) for evaluation but was discharged after an overnight period of observation without any

intervention. The 67-year-old female patient had complete resolution of her symptoms within 2 days.

While preparing this report, our clinic subsequently found a second outbreak associated with ice fishing on a Burnett County, Wisconsin lake.

These may be the first reported outbreaks of COVID-19 associated with ice fishing. As demonstrated by these cases, while ice fishing is usually thought of as a safe outdoor activity, fishing within the more comfortable ice houses available do represent a potential unrecognized hazard.

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Adapting Medical School Curriculum to Millennial and Generation Z Learners

continued from page 6

mentoring program at The Medical College of Wisconsin,⁵ where medical students were paired with undergraduate students at Marquette University and the University of Wisconsin-Oshkosh. This small study evaluated the experience of both groups and suggested positive outcomes. It is a model that deserves further exploration.

Among the variety of other papers in this issue, we are proud to publish a paper by Darold Treffert, MD, and Hunter Ries on the “sudden savant.”⁶ Dr Treffert, who was a former member of the *WMJ* Editorial Board and died this past December, was an internationally respected researcher in autism, hyperlexia, and savant syndrome who has published widely, including other papers and commentaries in the *WMJ*. (See accompanying essay by John J. Frey, III, MD.⁷) He leaves behind a remarkable legacy and will be missed.

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