How Will We Return in the Fall? Back to Normal? I Hope Not.

by Adina Kalet, MD, MPH

As one academic year closes and another approaches, educational news is unsettling. Graduation ceremonies are cancelled. Harvard medical, dental, and graduate students will not return to classrooms in the Fall. Schools around the world are scrambling to move classes online. Those of us with college students at home watch with trepidation.

MCW too, plans a return with "safety-first" in-person and online strategies. While there is grief over the losses of campus communal life, informal relationships with students, and opportunities for non-verbal communication, I am optimistic that – *if we embrace this opportunity and do it well* – a more effective, engaging, optimistic, and evidence-based medical school curriculum will emerge in less than one year.

The Educational Pivot Provides Many Opportunities…

For decades, high proportions of medical students have not attended lectures. In the 1990s, it was a bitter, ironic joke that our foundational medical science lectures were delivered to large, empty auditoriums, save for the one student assigned to audio tape (yes, actual tape), transcribe, and distribute notes to classmates. Paradoxically, medical students are eager to attend lectures – even if electronic materials are available – if they feel that the lecture will contribute to their learning[1].

Going "digital" will take work, of course, but the risks are low. From decades of rigorously controlled learning science experiments, we know that teachers must begin with the end in mind, structuring educational activities and assessments to leverage what students know and how they learn, and ensuring that students

understand and meet the goals and benchmarks. Teachers matter. The caring relationships we form with students motivate them to engage cognitively with the material and with each other. It is the message, not the media, that matters.

Replacing large group lectures with large group online sessions leads to the same, *if not better,* factual retention, and much higher engagement and better lifelong learning skills. In 2008, my colleagues and I compared two content-equivalent approaches – a popular live lecture and a one-hour web-based multimedia module – on addressing harmful alcohol use. The web-based approach reached a greater proportion of learners (82% completion, vs. 72% who attended lecture), was associated with equivalent overall knowledge and attitude acquisition, and achieved higher communication skills scores during a standardized patient "brief intervention"[2]. If we have the courage and commitment to enthusiastically embrace new teaching strategies, we can take full advantage of well-established and available educational technologies.

A Rewarding Curricular Endeavor…

On Friday, May 15, 2020, during the week before finals, almost every member of the MCW M1 class showed up to an online large group session entitled *"COVID19: Fact, Fiction and a View from the Trenches,"* consisting of four ten-minute talks followed by twenty minutes of Q & A moderated by Mark McNally, PhD, Course Director of Infectious Agents and Host Immunity (IAHI).

Pulmonologist and critical care physician, Jayshil Patel, MD began by presenting a young man admitted to the ICU with SARS-CoV-2. Dr. Patel proved to be a compelling storyteller as he shaped the narrative to the learning-level of his audience using, and then explaining, medical jargon, demonstrating the breath sounds, and asking the students to imagine what it must feel like to breathe at twice their normal rate. He compared the admitting chest X-ray to a normal one, helping the novice students to see and understand why the image was of grave concern. He demystified and labeled the cognitive processes underlying his clinical reasoning, demonstrating ways to abstract the key features of the case into clinical scripts or schema that he has "filed away" in his mind.

Next, virologist, Vera Tarakanova, PhD "busted" six myths about the SARS-CoV-2 virus, reinforcing what we know about viral transmission and prevention of its spread. She ended with what we don't yet know.

Pharmacologist and Course Director of the Principles of Drug Action, Sandra Pfister, PhD talked about drug discovery and the rigorous regulatory processes involved in finding, repurposing, testing, and approving drugs that might treat SARS-CoV-2 patients. She laid out how we must separate fact from fiction to ensure that drugs benefit – and not harm – our patients.

Then Dr. Patel returned, briefly sharing the patient's five-day downward-spiral hospital course which ended in death, unwrapping the impact this had on him personally, the medical team, and the patient's family.

This one-hour session ran over by fifteen minutes, because there were over fifty submitted questions from the 246 participants. After the session, 135 students provided feedback, confirming that the session was informative and interesting, and supported their learning. They appreciated being able to ask questions. Clearly the material was immediately relevant. Students seeking an extra credit point submitted brief reflections and will receive comments from a group of faculty members led by Dr. Bruce Campbell.

The planning group for the *"COVID19: Fact, Fiction and a View from the Trenches,"* session was convened by the Kern Institute because we are committed to assisting our teaching faculty in designing online courses that meet high standards and bolster our teaching and learning at MCW. The project took effort, but it led to a high-value educational experience tying together two foundational science courses embedded in clinical application. Kerrie Quirk and Johnathon Neist, instructional designers from the Office of Educational Improvement, supported this effort at every step along the way. The technology worked fine – although it could easily be tweaked for a better experience next time. Each iteration will get easier.

Can we move toward fewer, higher yield large group sessions? Yes.

The Next Steps…

We are preparing for the new normal, and educational business-as-usual will not be possible this Fall in Milwaukee. As we innovate, we must maintain social cohesion through face-to-face and online interactions with clinical experiences, anatomy dissections, and simulations. With creativity, technology can enable both knowledge resources and consultations with specialists, as well as relationships with peers, coaches and mentors.

Why, then, would we want to go back and deliver critical material using ineffective strategies? For one, there are structural barriers to curricular change. We must address our current system that values faculty content experts on "contact hours" and student "satisfaction" rather than student learning outcomes.

Opportunities for innovation are barreling toward us. My only request is to get a larger computer screen so I can see each student at closer to life-size than my laptop screen affords. I have old eyes.

References:

1. Billings-Gagliardi, S., & Mazor, K. M. (2007). Student decisions about lecture attendance: do electronic course materials matter? *Academic Medicine*, *82*(10), S73-S76.

2. Lee J, Triola M, Gillespie C, Gourevitch M, Hanley K, Truncali A, Zabar S, Kalet A. Working with patients with alcohol problems: A controlled trial of the impact of a rich media web module on medical student performance. *J Gen Intern Med*. 2008;23(7)1006-1009.

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