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SPECIAL ARTICLES

Optimizing virtual and distance learning during an emergency and beyond

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Study Objectives: The novel coronavirus 2019 (COVID-19) pandemic has forced program directors of sleep medicine fellowship programs, and other clinical training programs, to immediately transition longstanding face-to-face clinical and didactic instruction to virtual formats. The effects of this sudden transition to distance learning affect multiple aspects of training, from recruitment to patient care, scholarly activity, and well-being. Clinical educators must also understand how to consider and maintain equity while implementing distance learning strategies.

Methods: Resources were collected from multiple sites that are openly accessible to sleep medicine educators. These resources are presented within their topic domains to provide guidance on how to effectively implement distance learning strategies into a clinical training program.

Results: Links to helpful resources are provided for each of the following topics: virtual clinical care, didactic delivery in a virtual clinical learning environment, generating scholarship via distance learning, well-being in the setting of distance learning, virtual interviews, and equity in a virtual clinical learning environment.

Conclusions: Clinical training programs, including sleep medicine fellowships, can utilize virtual and distance learning methodologies to deliver, and even enhance, currently existing curricula. The widespread adoption of distance learning strategies opens new opportunities for educational innovation and collaboration among training programs.

Keywords: virtual care, telemedicine, distance learning, pandemic

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BRIEF SUMMARY

Current Knowledge/Study Rationale: The novel coronavirus 2019 (COVID-19) has prompted social distancing measures that affect residency and fellowship training. Programs need to quickly adapt clinical and educational delivery to incorporate virtual and distance learning methods.

Study Impact: This article guides readers through steps to identify and implement virtual and distance learning strategies during a widespread emergency, with the potential to maintain these approaches even after the emergency subsides.

INTRODUCTION

Distance learning methods are often utilized in graduate programs; for example, many master's degree curricula are tailored for learners who live and work in different regions and convene online for classes. Historically, graduate medical education (GME) has relied on face-to-face interactions to fulfill clinical, didactic, and scholarship components. The novel coronavirus 2019 (COVID-19) pandemic has forced GME programs, including sleep medicine fellowships, to implement virtual care and distance learning to deliver core curricular content. GME programs can merge best practices from other disciplines with strategies unique to medical education to optimize virtual and distance learning during residency and fellowship.

This article highlights how specific aspects of sleep medicine training—clinical care, didactics, scholarship, trainee well-being, and equity—can be adapted using virtual and distance learning methods. In addition to cited references, each topic discussed includes a link to a helpful resource that program directors and faculty can use as they adapt existing curricula and innovate new teaching methods and content.

SLEEP MEDICINE TRAINING

Virtual clinical care

The COVID-19 pandemic has thrust telemedicine into the forefront of clinical care delivery. Sleep medicine is particularly well-suited for telemedicine, given the use of cloud-based storage for positive airway pressure adherence and therapy data. While the field of sleep medicine has long advocated for telemedicine,[1] fellowship programs have not universally adopted telemedicine care delivery by trainees.[2,3] Recent adaptations to payer policies have made telemedicine services more accessible for patients,[4] and the Accreditation Council for Graduate Medical Education now permits telemedicine to be incorporated into clinical training programs.[5] The rapid shift to social distancing and remote working presents training programs with a timely opportunity to expose sleep medicine trainees to telemedicine and equip them with skills they will undoubtedly build upon during their careers.

Helpful resource for virtual clinical care: American Academy of Sleep Medicine clinical resources [webpage]. https://aasm.org/clinical-resources/telemedicine/. Published 2020. Accessed July 20, 2020.

Didactic delivery in a virtual clinical learning environment

Lectures, case-based presentations, and other didactic offerings can still thrive in a distance learning environment. Many institutions have subscription agreements with virtual conferencing platforms that programs can use to convene trainees, faculty, and other members of the sleep team. Case conferences should be held only on platforms compliant with the Health Insurance Portability and Accountability Act of 1996. Virtual didactic offerings can broaden the scope of training programs, which now have a cost-effective means for their trainees to engage with clinical and research educators across the country and the globe. Incorporation of continuing medical education credit into virtual conferences can also attract other participants and broaden the reach of a training program's educational conferences.

Helpful resource for didactic delivery in a virtual clinical learning environment: Kendrick E. Medical school COVID-19 websites for faculty and online instruction [spreadsheet online]. https://docs.google.com/spreadsheets/d/1NbrwEzheCsolugCSJ2VX7P3ySGjjj9boE6YZ_97lsFo/edit#gid=0. Published April 24, 2020. Accessed July 20, 2020.

Generating scholarship via distance learning

Trainees and faculty can continue to generate scholarship within a distance learning framework. Virtual collaboration platforms such as Google Drive, Slack, Trello, and Basecamp facilitate asynchronous work on group projects. In fact, incorporation of distance learning strategies for trainee research opens new possibilities for cross-institutional mentorship and project collaboration. Now more than ever, programs within the same specialty can pool resources to broaden trainee engagement in research and quality improvement endeavors. This partnership can help trainees forge meaningful relationships with peers and mentors across institutions. The establishment of virtual trainee research resources, shared and sustained by faculty at multiple institutions, may help the development of more clinical researchers who, in turn, can propel sleep and circadian science and advance patient care.

Helpful resource for generating scholarship via distance learning: Workable. 15 collaboration tools for productive teams [webpage]. https://resources.workable.com/tutorial/collaboration-tools. Accessed July 20, 2020.

Well-being in the setting of distance learning

Training programs should continue to have frequent conversations and check-ins about their learners' well-being during times of social distancing and remote learning. Incorporation of virtual town halls, happy hours, game nights, active video games,[6] other social interactions can help trainees, faculty, and staff feel connected even when physically distanced. Shelter-in-place regulations, such as those enacted during the COVID-19 pandemic, do not adversely affect mental health in groups with high cohesion.[7] Programs should ensure that trainees understand how to access local wellness and mental health resources as needed, particularly during time of increased uncertainty and anxiety and physical distance from usual support systems.

Helpful resource for well-being in the setting of distance learning: Accreditation Council for Graduate Medical Education. AWARE Well-Being Resources [webpage]. https://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being/AWARE-Well-Being-Resources. Accessed July 20, 2020.

Virtual interviews

A fully virtual interview season has the benefits of limiting potential COVID-19 exposures, reducing the number of last-minute cancellations, and containing costs for candidates and programs. Application review and interview scheduling workflows will need to be adaptable and flexible to adjust to the upcoming recruitment season.

In preparation for this new terrain, programs should update their websites to provide candidates with current, relevant information. As programs commit to online interviews and virtual visits for all candidates, they should also anticipate a greater number of applications. Programs will need to solidify their recruitment season workflows—eg, downloading applications, reviewing applications, communicating with candidates in a timely fashion—in order to best manage the expected increased volume. Clear communication with candidates, faculty, and program staff about interview logistics will be essential to ensuring trouble-free interactions for all involved.[8] Many institutions and organizations are quickly producing resources to guide programs through creation of a virtual interview system.

Helpful resources for virtual interviews: Association of American Medical Colleges. Virtual Interviews: Tips for Program Directors [online pdf]. https://www.aamc.org/system/files/2020-05/Virtual_Interview_Tips_for_Program_Directors_05142020.pdf. Accessed July 20, 2020.

Equity in a virtual clinical learning environment

The transition to distance learning and virtual care delivery should be done through the lens of equity for patients and learners. When establishing telemedicine services, clinical educators should consider how social determinants of health[9] may influence an individual's engagement with virtual endeavors; the rapid adoption of telehealth during the COVID-19 pandemic will provide more data and insight on this topic. Creation of a telehealth program requires that all providers, including trainees, have access to Health Insurance Portability and Accountability Act–compliant spaces, technology-enabled devices, and reliable internet connectivity either at home or in the workplace. If the clinical learning environment is adapted to comply with local public health recommendations related to the pandemic, attention is needed to ensure that Accreditation Council for Graduate Medical Education requirements for learning spaces[10] are also met.

Commitment to diversity and equity should also shape programs' recruitment practices. **Table 1** highlights actions that programs can take to mitigate implicit bias during fellowship recruitment. Programs should commit to holistic application review[15] and candidate selection processes that do not inadvertently penalize candidates with limited access to technology. All candidates should be advised about strategies to maximize their virtual interview experience, such as using professional backgrounds, sitting in spaces with adequate lighting,

Table 1—Ten steps to minimize unconscious bias and prioritize diversity in recruitment.

1. Convene a diverse selection committee
2. Require all individuals involved in the selection process (eg, committee members, program support staff) to participate in unconscious bias training.
a. Check with your graduate medical education (GME) office to determine if your program is required to use institution-specific unconscious bias training resources.
b. If you are seeking training resources, Cahn's "Recognizing and Reckoning With Unconscious Bias: A Workshop for Health Professions Faculty Search Committees"[11] is free to download at https://www.mededportal.org/doi/10.15766/mep_2374-8265.10544. The link includes all materials—workshop content, practice activities, and evaluation form—to facilitate this 2-hour workshop in your own program.
3. Create a standardized process so that all selection committee members use the same objective measures for candidate evaluation.
4. Train selection committee members on the standardized candidate evaluation process. Include frequent reminders about this process throughout the recruitment season.
5. Prepare applications for review with a deliberate intent to mitigate unconscious bias[12]
a. Remove photos from the Electronic Residency Application Service (ERAS) application before sending to selection committee members
b. Remove standardized test scores, such as United States Medical Licensing Examination (USMLE) steps 1, 2, and 3 from the applications
6. Develop standardized interview questions that include gender-neutral language.
7. Encourage selection committee members to practice frequent self-reflection
a. Acknowledge and accept one's own biases, including positive biases (which place a candidate at a relative *advantage*) and negative biases (which may place a candidate at a relative di*sadvantage*)
b. Reflect on one's personal preferences, thought processes, and approaches during application review and interviews
8. Educate selection committee members on the U.S. Equal Employment Opportunity Commission's guidelines for employers[13] and the National Resident Matching Program's guidelines for programs[14]
a. Responsibilities for those involved in recruitment, hiring, and promotion decisions https://www.eeoc.gov/employers/small-business/3-im-recruiting-hiring-or-promoting-employees
b. Questions that should not be asked during an interview https://www.eeoc.gov/employers/small-business/what-shouldnt-i-ask-when-hiring
c. Questions that cannot be asked during an interview https://www.eeoc.gov/employers/small-business/4-what-cant-i-ask-when-hiring
d. Match Agreements https://www.nrmp.org/match-participation-agreements/
9. Explain to candidates that your program is adopting practices to minimize unconscious bias and promote diversity during the selection process
10. Conduct an evaluation of your selection committee's practices and performance upon completion of the recruitment season

Table 2—Strategies to optimize distance learning in a clinical environment.

What to Do: Short Term
1. Collaborate with your institution's information technology (IT) experts to understand which remote meeting platforms are available with institutional support.
2. Determine which, if any, institutionally supported online platforms are Health Insurance Portability and Accountability Act (HIPPA)–compliant.
3. Identify current didactic and clinical learning opportunities within your program that are amenable to virtual delivery.
4. Pinpoint current gaps in the curriculum that may be well-served with innovative distance learning methods.
5. Establish short, frequent communication with trainees and faculty to ease the transition to distance learning and quickly address barriers to implementation.
What to Do: Long Term
1. Check with your IT colleagues periodically to ensure that your program's online platforms align with institutional standards (and with HIPPA regulations, if applicable).
2. Identify measurable outcomes—educational and patient-related—to gauge success of your innovative virtual methodologies.
3. Include an evaluation of the distance learning initiatives as part of your Annual Program Evaluation, to identify those which should be longitudinally integrated into the program.
4. Compare notes with other graduate medical education (GME) programs at your institution to understand local regulations and best practices.
5. Collaborate with other GME programs in your specialty to develop and implement multi-institutional distance learning initiatives.
What to Do: All Time Points
1. Create your program's virtual delivery innovations through the lens of equity for all participants, including trainees and patients.
2. Incorporate faculty development sessions on distance learning and bias mitigation.

and keeping the camera at eye level. When conducting virtual interviews, faculty and other interviewers should be mindful that candidates may not have equal access to personal devices, cellular networks, and/or high-speed internet; these factors should not be regarded as surrogate predictors of an individual's potential clinical and academic performance. Faculty interviewers

should engage in unconscious bias training prior to the start of the recruitment season to maximize diversity, equity, and inclusivity during application review, candidate interviews, and rank order list creation.[16]

Helpful resources for equity in a virtual clinical learning environment: (1) University of Michigan. DEI Strategic Planning Toolkit [webpage]. https://diversity.umich.edu/strategic-plan/dei-strategic-planning-toolkit/. Accessed July 20, 2020. (2) Forbes. Minimize Unconscious Bias In Your Hiring Process With These 13 Tips [webpage]. https://www.forbes.com/sites/forbescoachescouncil/2019/04/09/minimize-unconscious-bias-in-your-hiring-process-with-these-13-tips/#60bdbbfd541a. Accessed July 20, 2020.

CONCLUSIONS

Table 2 summarizes short-term and long-term steps to successfully incorporate virtual and distance learning into a clinical training program. For all the uncertainty the COVID-19 pandemic brings, it also offers training programs the chance to think creatively and innovate educational methodologies and delivery. Programs should seize this opportunity to create sustainable patient-centered and learner-centered processes that have the potential to improve patient care and clinical training.

ABBREVIATIONS

COVID-19, novel coronavirus 2019
GME, graduate medical education

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DISCLOSURE STATEMENT

The author has reviewed and approved the manuscript. The author declares no conflicts of interest. This work was performed at the University of Michigan.