

# E-Mentoring Medical Students and Residents in Radiology During the COVID-19 Pandemic



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# The Impact of COVID-19 on Medical Education

- The COVID-19 pandemic has led to many changes in personal and work life behaviors globally to reduce risks of infection and transmission.
- These changes are even more pronounced in clinical environments.
- Fortunately, due to the digital nature of much of diagnostic radiology, many measures can be taken to reduce the clinical risks to faculty.
- Unfortunately, many of these measures disrupt the teaching model of face-to-face readout and teaching between faculty, residents and medical students.
- During this tumultuous time of transition, many new methods for maintaining high quality education and mentoring can be adopted.

## Recommendations During the COVID-19 Pandemic

- Maintain social distancing (>6 feet between people)
- Limit the number of people present in work spaces
- Educate trainees to monitor signs and symptoms of COVID-19 infection and quarantine at home if symptoms develop
- Consider limiting or disallowing personal and business travel
- Alter service structure to allow work from home when possible

# Implementing Remote Learning



“ The pandemic is *not a revolution* in medical education – it is an *opportunity* to learn how we can *make education better* !

**PROFESSOR DAVID GORDON**  
President of the World Federation for Medical Education

- Remote learning has grown in popularity amongst the medical community, particularly in regard to medical education during this recent pandemic. Remote learning integrates technology to provide access to the educational curriculum outside for the classroom.
- Medical education has been trending toward an integrated curriculum utilizing both remote learning strategies and traditional face-to-face learning
- However, the emergence of the COVID-19 pandemic has caused a rapid shift toward remote learning strategies.

# Remote Learning in Radiology

- Remote learning for medical students, residents and fellows within radiology has been shown effective utilizing a multi-faceted approach.
- Many resources, including textbooks, are available virtually allowing students access to the basic materials for learning from nearly anywhere.
- Additionally, didactic formats can be pre-planned and recorded, or done live through electronic video calling allowing for flexibility of viewing and interactive sessions when one is desired over the other.
- Case-based modules can help trainees work through relevant problems as they learn along the way.
- ‘Flip-lectures’ can be implemented via various video calling programs to allow learning of a topic individually, with reinforcement of the learned topics through demonstrating knowledge and taking cases.
- Additionally, with technologies that allow for video calling and sharing of one’s screen, daily readout can occur virtually between attendings and trainees, recreating the typical in-person readouts.



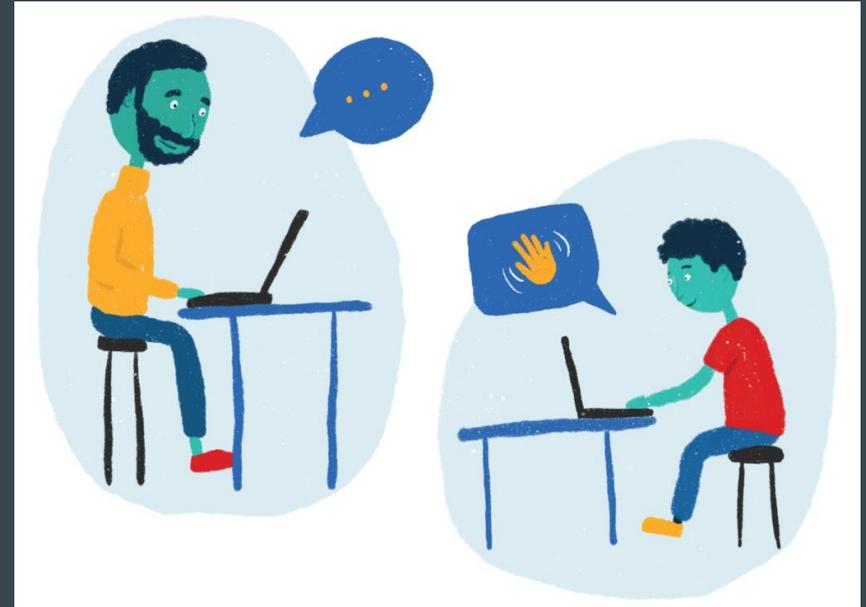
# Mentoring vs. Education



- Strategies for maintaining adequate education allow themselves well to study as quantitative performance metrics can be compared and measured easily.
- In contrast, the informal interactions between faculty and trainees that afford real life advice and insight are more difficult to measure.
- Thus, this aspect of mentoring is an important area to highlight as it can be easily overlooked during a transition to remote learning curricula.

# The Difficulties of Mentoring

- Many difficulties to mentoring have arisen during the COVID-19 pandemic.
- First, the process of matching mentor and mentee can be increasingly difficult as virtual interactions and introductions are often less familiar than our traditional in person impressions.
- Also, it can be difficult establishing relationships virtually for the first time with a new mentee.
- Meetings between a mentor and mentee can be affected as traditional strategies, such as in person meetings and conversations, are interrupted and new pathways of communication must be adopted.



# Strategies to Promote Mentoring



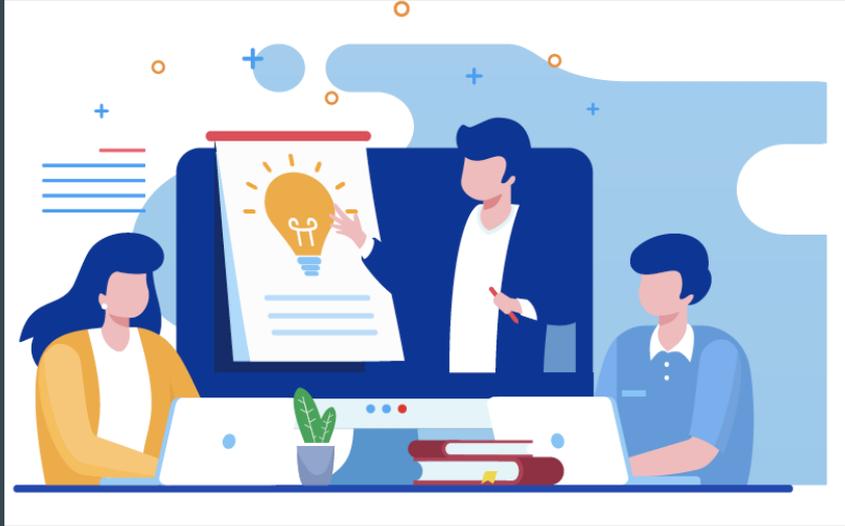
- First and foremost, keeping mentoring responsibilities present in your mind can help maintain relationships that had already been built and allow for new mentoring to grow.
- Additionally, since previously utilized methods of checking in with mentees may not be available, be aware of how this may impact informal communication pathways that were being utilized. More frequent ‘check-ins’ may be necessary to help address any mentee concerns and help them prioritize goals.

# Further Strategies

- With so many changes in the realm of COVID-19, one of the best strategies for mentors to employ is flexibility. With changes occurring rapidly in day-to-day life, allowing for expectations and schedules to change can be paramount to maintaining a productive mentoring relationship.
- With these changes, unexpected problems are likely to arise, so continually offering support is also highly encouraged as it will help foster a sense of teamwork and unity.



# Teamwork and Innovation



- For many, these times are unprecedented. This has also led to unprecedented problems that many of us have never encountered or even considered before.
- Many of these problems may pose challenges for mentees as they work through projects.
- Open communication about these new challenges and creating a culture of shared problem-solving can help reduce anxiety amongst the mentee and improve communication.
- Additionally, this can create an environment where creative solutions are encouraged and the mentoring relationship takes on a sense of teamwork.

# Finding Alternatives

- Though helping overcome the challenges that arise is fundamental for a mentor, sometimes circumstances may make achieving certain outcomes impossible.
- In this case, brainstorming to find alternatives can be key for the mentee.
- This may mean working on other portions of a project until the main components may continue.
- It also may mean readdressing the overall goal and seeing if another course of action would be suitable to achieve it, even if this would include changing the current direction.



# Making Time and Building Connections

- Time is something there never seems to be enough of, however, when mentoring, it is important to actively work to create the time necessary.
- Scheduling meetings and conversations can help build mentoring into a routine part of your week and can also help planning ahead to accomplish tasks.
- Discussing meeting schedule and frequency should be addressed early on in mentoring to ensure both the mentor and mentee can devote the proper time necessary. It will also be important to make sure that any desired outcomes from the mentoring relationship can be achieved within the timeframe agreed upon.
- Meeting alone is not enough. It is important to decide how meetings should take place.
- With in-person meetings being tougher to accomplish, virtual counterparts and visual calls can often achieve many of the same goals.
- Additionally, these alternatives can allow for flexibility of location as well.
- Additional methods of communication such as telephone calls, text messaging, and email can be used in conjunction to impart or exchange information.

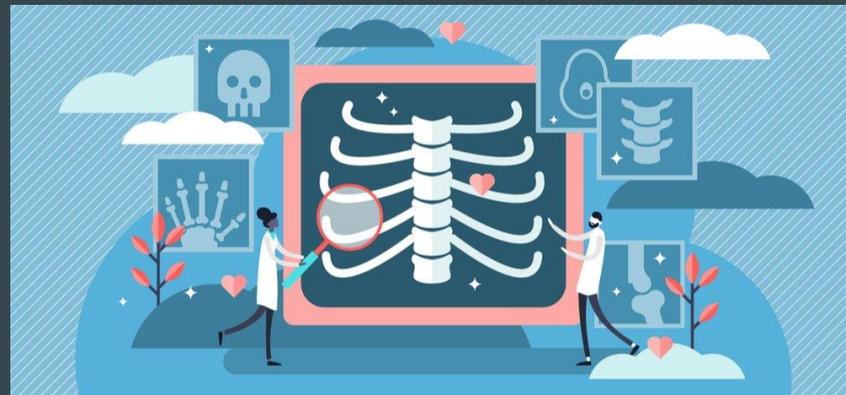
# Mentoring in Radiology



- Mentoring in radiology can be an amazing opportunity for medical students to learn more about the specialty.
- It also can be instrumental in showing how radiology interacts with the other specialties of medicine helping medical students make the difficult decision of what specialty is best for them.
- Additionally, mentoring can take the role of working on projects or papers together helping medical students get introduced to many of the aspects of research with a knowledgeable guide through the process.
- With remote mentoring, mentorship can be extended to more students than before.

# Conclusion

- COVID-19 has greatly changed the landscape of medicine, education and mentoring.
- By utilizing remote techniques for learning and mentoring, it is possible to help maintain the highest levels of medical education.
- Keys to effective mentoring include flexibility, communication, teamwork and unity. Additionally, making the time to schedule and provide mentoring is paramount to the process.
- By mentoring effectively, radiologists have the opportunity to:
  - welcome medical students to the fascinating field of radiology
  - learn more about its role within the hospital and for each patient
  - work on research projects with medical students serving as a knowledgeable guide to lead them through the process.



# References

1. Best podcasts on mentorship | Together Mentoring Software. Best Mentorship Software: Together Mentoring Software. <https://www.togetherplatform.com/blog/best-podcasts-on-mentorship>
2. Center DH Clinical and Translational Science. Mentoring During COVID-19 Pandemic. UC Davis Health | University of California, Davis. <https://health.ucdavis.edu/ctsc/area/education/mentoring-academy/covid-19-resources.html>
3. Coronavirus Resources - MENTOR. MENTOR. <https://www.mentoring.org/resource/coronavirus-resources/>
4. Covid-19 – Mentoring remotely: advice for mentors and students. ACCA Careers. Published April 22, 2020. <https://jobs.accaglobal.com/article/covid-19-mentoring-remotely-advice-for-mentors-and-students/>
5. Creagh S, Pigg N, Gordillo C, Banks J. Virtual medical student radiology clerkships during the COVID-19 pandemic: Distancing is not a barrier. *Clinical Imaging*. Published online December 2021:420-423. doi:10.1016/j.clinimag.2021.08.024
6. Ervin A. The Chronicle of Evidence-Based Mentoring | Mentoring in the era of COVID-19: Nine experts in the field weigh in. The Chronicle of Evidence-Based Mentoring | Sharing new research, ideas, and best practices in youth mentoring. Published March 30, 2021. <https://www.evidencebasedmentoring.org/mentoring-in-the-era-of-covid-19-a-look-at-the-past-present-and-future-of-mentoring/>
7. FDA clears “instant triage” radiology algorithm for pneumothorax - Med-Tech Innovation. Med-Tech Innovation. Published March 13, 2020. <https://www.med-technews.com/news/fda-clears-instant-triage-radiology-algorithm/>
8. Gaur U, Majumder MAA, Sa B, Sarkar S, Williams A, Singh K. Challenges and Opportunities of Preclinical Medical Education: COVID-19 Crisis and Beyond. *SN Comprehensive Clinical Medicine*. 2020;(11):1992-1997. doi:10.1007/s42399-020-00528-1
9. Ho PA, Girgis C, Rustad JK, Noordsy D, Stern TA. Advancing Medical Education Through Innovations in Teaching During the COVID-19 Pandemic. *The Primary Care Companion For CNS Disorders*. 2021;(1). doi:10.4088/pcc.20nr02847
10. How COVID-19 has changed medical education for these trainees - The DO. The DO. Published August 12, 2020. <https://thedo.osteopathic.org/2020/08/how-covid-19-has-changed-medical-education-for-these-trainees/>
11. Kulkarni R. Article: How to design mentoring programs — People Matters. People Matters. Published March 9, 2018. <https://www.peplematters.in/article/training/how-to-design-mentoring-programs-17681>
12. Medical education during COVID-19: Lessons from a pandemic | British Columbia Medical Journal. British Columbia Medical Journal. <https://bcmj.org/special-feature-covid-19/medical-education-during-covid-19-lessons-pandemic>
13. Mentoring-Advising. Home. <https://www.aur.org/affinity-groups/amser/educator-resources/mentoring-advising>
14. Mentorship Models Aimed at Maximizing Impact. Social Impact Powered By Design Thinking - OpenIDEO. <https://www.openideo.com/content/intentional-mentorship-design>
15. MVMPT - CME on Fundamentals of Radiology - MVM Group of Institutions. MVM Group of Institutions. Published October 17, 2020. <https://mvmedu.org/education/mvm-college-of-physiotherapy-organizes-radiology-cme/>
16. Ray K. What is Remote Learning? | Tech & Learning. TechLearningMagazine. Published March 31, 2020. <https://www.techlearning.com/how-to/what-is-remote-learning>
17. Rose GL, Rukstalis MR, Schuckit MA. Informal Mentoring Between Faculty and Medical Students. *Academic Medicine*. 2005;(4):344-348. doi:10.1097/00001888-200504000-00007
18. WFME on medical education in the COVID-19 context - The World Federation for Medical Education. The World Federation for Medical Education. <https://wfme.org/news/wfme-on-medical->