Critical appraisal of the radiologic literature is an essential skill not only to promote lifelong learning but also to ensure optimal patient care. A medical tradition since 1875, initially designed by William Osler to encourage collective reading of expensive print journals and textbooks [1], such activities are designed to help learners stay up to date with current evidence by providing protected time to review the evidence behind medical decisions and discuss ways to appropriately incorporate these advances into practice. Traditionally, radiology residency programs offer in-person journal clubs, but these activities are met with variable success, depending on logistics and the expertise and skill of on-site faculty. The era of social distancing now poses additional challenges to ensure that effective learning continues to occur.

**HOW CAN RESIDENCY PROGRAMS OVERCOME THESE NEW PHYSICAL BARRIERS AND HARNESS TECHNOLOGY TO ENHANCE THE JOURNAL CLUB EXPERIENCE?**

Harpit Bedi, MD, Clinical Associate Professor of Radiology and Vice Chair of Education, Boston University Medical Center, Boston, Massachusetts

Journal clubs are a traditional component of resident education, because the objective review of the literature is a vital skill for trainees. In-person journal clubs are challenging given busy attending and resident schedules, variability in resident rotations, and moderators sometimes lacking the expertise in the content or critical evaluation of selected articles. Physical distancing during the coronavirus disease 2019 (COVID-19) era poses new challenges because in-person meetings must be limited in number.

Virtual conferencing tools (ie, Zoom, San Jose, CA) are now the mainstay for meetings. Many of these tools started with some degree of security risk. Initially, Zoom had difficulties with uninvited attendees displaying inappropriate language and pictures in an act called “Zoom-bombing.” More is now known about the capabilities and limitations of Zoom, and most security issues have been resolved.

The Boston University Neuroradiology section created a unique virtual journal club that leveraged the strengths of Zoom. We selected one junior-level article and one senior-level article on a given topic (ie, stroke). Sessions started with comments from the residents, including what they liked most and what they learned from the articles. Then came the surprise. I arranged for one of the authors of the articles to Zoombomb the session. These Zoombombing guests gave amazing additional insights, answered questions, and facilitated much deeper conversations. We also invited clinicians to Zoombomb sessions and give clinical insights. Having guests during the session would be impossible with an in-person journal club. Our residents loved having the guests virtually attend the sessions.

Guest Zoombombing was a fantastic addition to our neuroradiology journal club. Many more residents and staff attended the sessions, and we received very positive feedback from the guests and clinicians as well. We believe that using Zoom in the virtual journal club added unique value over the in-person experience.

Thomas Kesler, MD, Breast Imaging Fellow, Department of Radiology, University of North Carolina, Chapel Hill, North Carolina

The COVID-19 pandemic presented considerable challenges to our department’s residency education. To replace in-person teaching, our breast imaging division immediately instituted a virtual journal club that engaged participants, proved relevant and topical, promoted expert discussion, and facilitated connections between educators and learners.

The virtual format actually contributed to, rather than detracted from, multilevel learning. Discussion questions were offered at the end of each presentation to assure multilevel learner participation. Multidisciplinary
physicians also attended the virtual journal club when applicable, and participated in discussions yielding more robust discourse and enhanced learning. The breast surgeon first author of a selected journal article joined our virtual journal club, which would have proved very difficult to achieve in a traditional in-person journal club format.

We chose to use Zoom videoconferencing software. Journal articles were selected from major medical journals with topics relevant to learners’ interests and current cases seen on service. Paired learners were assigned to each virtual journal club session and consisted of either two residents, a fellow and resident, or a medical student and fellow. The two-learner speaker structure was selected for two reasons: to foster collegiality and to address online technical issues. Residents divided tasks and alternated screen sharing and presenting. Related to technical issues, when one presenter lost internet connectivity, the other presenter assumed screen sharing and continued the presentation to ensure a streamlined conference and continued participant engagement. A standardized template was used for each session to ensure reproducibility from presenter to presenter.

The medical students and residents found the information relevant and engaging. The fellows stated that the journal club strengthened their knowledge base and enhanced communication and teaching skills. The attendings learned from the frank discussions of differing practice patterns.

Alison Chetlen, DO, Professor of Radiology and Vice Chair of Education, Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania

The COVID-19 pandemic has taught us to live with uncertainty and embrace flexibility. The challenges of physical distancing and new safety concerns forced educators to design innovative methods of teaching. In trying to maintain some normalcy, journal clubs have thrived in our department. Before COVID-19, journal clubs typically occurred monthly or quarterly and were run by each division. Some divisions held the journal clubs at an intimate setting like a faculty member’s home with music and appetizers, and other divisions held the journal clubs in the reading rooms with bagels and coffee before the craziness of the work day began. My own division, a breast imaging division, hosts a monthly “Breasts and Bagels” journal club in which two or three residents each present an article to an audience comprised of faculty, fellows, technologists, nursing staff, and medical assistants. Not only does our format increase engagement and camaraderie of the entire work unit, it offers a unique opportunity to improve public speaking skills and challenges the resident to speak about a complex topic in a manner that is digestible to all audience members.

After COVID-19 changed our way of life, many divisions pivoted to a virtual journal club utilizing a Zoom format. Ground rules, content, and format were altered in this “new normal.” Ground rules shared included muting oneself unless speaking, encouraging utilization of the chat function for discussion prompts, and enabling video if possible. Faculty carefully chose journal club content that would spark rich discussions and be relevant, interesting, and applicable to our daily lives. Residents now prepare a short PowerPoint (Microsoft Corporation, Redmond, Washington) and utilize screen sharing during their presentation of the journal article; they intersperse photos of their family, pets, hobbies, or prior travel destinations in between slides to interweave some personal touches. Our virtual journal clubs are full of new knowledge, healthy controversy, and most importantly, laughter and camaraderie!

SUMMARY

In summary, in response to the COVID-19 pandemic, radiology departments have rapidly adopted virtual platforms to facilitate journal club activities, often creatively taking advantage of both the strengths (eg, multidisciplinary participants, personalization) and weaknesses (eg, Zoom-bombing the author into the conversation) of the specific platform. By bringing radiologists across generations together, journal clubs serve not only to teach critical appraisal of the literature using evidence-based articles but also to educate trainees and practicing radiologists on a diverse range of topics including quality improvement, practice management, health care disparities, leadership, communication, professionalism, and health care policy [2,3]. In fact, for the past several years, even national organizations such as the ACR have been bringing together organizational leaders with current radiology trainees to discuss published articles related to artificial intelligence and economics. In addition, chats on Twitter (Twitter Inc, San Francisco, California) sponsored by a national organization or a peer-reviewed journal can reach a global audience and provide another means to engage in conversation and share varied perspectives on published literature [4]. By discussing published research studies and engaging in respectful discourse, journal clubs offer an effective means to ensure that the next generation of radiologists is prepared both to succeed in practice and to provide the highest level of care to patients.

REFERENCES


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