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A Case for Academic Teleradiology

Jeffrey P. Kanne, MD, Jonathan H. Chung, MD

INTRODUCTION

Although many radiology departments already employed home-based or other remote PACS capabilities before the coronavirus disease 2019 (COVID-19) pandemic, we believe that many of the changes in teleradiology will continue beyond the acute phases of the pandemic, especially in academic radiology departments. Early in the pandemic, many academic radiology departments reduced in-house faculty and trainee presence to allow social distancing and reduce the risk that a large portion of the work force would become sick all at once. Departments that already had remote PACS capabilities were able to instantly provide ongoing radiology coverage, whereas others had to scramble to build and distribute PACS workstations. Besides diagnostic interpretations, academic radiology departments also needed to continue trainee education and multidisciplinary activities. Although in-house staffing has returned to prepandemic levels for many departments, remote interpretation, electronic messaging, and video conferencing have become important facets in our regular workday.

WORKFORCE SHORTAGES

Even before the COVID-19 pandemic, recruiting faculty members to academic positions had been challenging for some departments. Factors such as geography, spousal or partner employment, family and school obligations, and economics had impacts on recruiting [1]. Furthermore, some subspecialties,

such as cardiothoracic and pediatric radiology, have been suffering from an ongoing workforce shortage because of increased demand for these specialties but stubbornly low numbers of trainees entering these fields [2].

To address acute and long-term staffing needs, some academic departments contract with locum tenens companies for onsite radiologists or teleradiology companies for remote coverage. External teleradiology partnerships as a long-term solution are attractive given that there is no need to interview or vet potential hires, staffing can be augmented daily on the basis of imaging volume, and contracts can generally be rapidly dissolved or created if interpretations are not performed as a satisfactory level. However, the downsides to relying on teleradiology interpretations are myriad and include high cost, commoditization of radiology in the eyes of clinicians and hospital leadership, nonspecialized diagnostic interpretations of advanced imaging studies, and safety issues given difficulties in facilitating communication between teleradiologists and referring clinicians. In addition, the nature of these relationships leaves much if not all the educational and interdisciplinary activities to regular faculty members, further increasing the burden of non–relative value unit–related tasks to onsite academic faculty members.

We believe that academic teleradiology is one potential solution to

address these workforce challenges. Not only can remote faculty members provide diagnostic imaging interpretation, but with the right tools, faculty members can review cases one on one with trainees, engage in video consultations with clinical services, attend and participate in multidisciplinary conferences, and present lectures and case conferences to trainees and students [3–5].

BURNOUT

Radiologists, like other physicians, report high levels of professional burnout [6,7]. In addition to clinical work, educational and scholarly activities are also professional requirements of many academic radiologists. Some academic radiology departments have had to reduce protected time allotted for academic and administrative activities as clinical volumes increase, and some subspecialty sections lack adequate staffing. These reductions further strain faculty members, especially those early in their careers, often turning evenings, weekends, and holidays into de facto academic time.

Academic teleradiology allows flexibility in clinical schedules, including expanding faculty coverage hours through remote work while letting radiologist work “swing” or evening shifts to better accommodate needs at home, such as child or elderly care. Many academic radiology departments are in large urban centers, where the cost of living can add to

work-related stresses. The ability to live farther afield in more remote suburbs, smaller cities, or anywhere in the United States while practicing at a major academic medical center might be appealing to early-career faculty members or senior faculty members looking for a late career change without added financial pressures. Furthermore, time saved on commuting, which in some large cities could be 1 to 2 hours a day, could be used for academic and administrative tasks or wellness-focused activities.

CHALLENGES

Academic teleradiology is not without challenges. First, the lack of a physical presence can leave radiologists working remotely feel less “a part of the team” than their onsite colleagues. Professional relationships with trainees and clinical colleagues developed in cyberspace can seem less personal. Second, engaging students and trainees over video conferencing and screen-sharing software might prove challenging for parties involved. Third, ideas for research and other scholarly activities often come about in casual conversation in hallways or at the coffee stand, activities not available to radiologists working remotely. Fourth, academic teleradiology is limited primarily to nonprocedural clinical activities. Fifth, some fear that the flexibility inherent to remote work may lead to lower productivity; however, recent data regarding residents reading remotely showed no significant decrease in productivity [8]. Still, careful selection of candidates for remote work, including those with productivity-based compensation models, must be designed to ensure desired performance of remote readers. Finally, some jurisdictions and health care systems might have specific requirements for professional licensure and insurance coverage with respect to telemedicine.

SOLUTIONS

Despite these challenges, solutions do exist. Academic radiologists working remotely could be asked to work in person a set number of days or weeks per year and, during those on-site workdays, participate in student and trainee clinical and didactic teaching, in-person multidisciplinary conferences, and departmental professional and social activities. Second, departmental and section faculty meetings and research team meetings could all offer remote attendance options. Although performing image-guided procedures will prove to be more challenging for academic radiologists who primarily work remotely, options may be available to perform some procedures if on-site work occurs frequently enough to ensure that skills are maintained. With the need for telemedicine during the COVID-19 pandemic, health care systems likely have updated policies and procedures for remote work for medical staff members, and legal support is typically available to navigate any medical licensure and insurance requirements.

For academic departments, creating a critical mass of specialized radiologists can be leveraged to provide teleradiology services to community practices within the health care network. In this case, the teleradiology service would not be to primarily act as a release valve for imaging volume or act as a bridge during overnight or weekend hours. Instead, the main need would be that of interpretation of uncommon or specialized studies. For example, high-resolution chest CT (HRCT) scans are not commonly ordered in the community setting. Moreover, the overall confidence of the typical general radiologist is low when interpreting HRCT scans. An academic teleradiology service could interpret all HRCT scans from their community partners in their health care network. The same mechanism could be generalized to other specialized studies, such as

cardiac MRI, cardiac CT angiography, prostate MRI, MRI lymphoscintigraphy, MRI of small joints, and so on.

Academic teleradiology might also be an appealing practice alternative for faculty members who desire a change in their practice for personal reasons. Rather than losing talented faculty members to national teleradiology services, academic departments could transition some traditional faculty positions to remote positions, either with remote resident supervision or purely for independent clinical work. Opportunities for continued trainee engagement such as lectures, teaching sessions, and remote supervision could be offered. Faculty members could also continue to participate in multidisciplinary conferences, which are often not practical in the standard teleradiology framework. Compensation plans could be adjusted accordingly commensurate with duties to ensure fairness with faculty members' remaining in more traditional roles.

CONCLUSIONS

We believe that academic teleradiology will continue to grow beyond the COVID-19 pandemic and will allow departments to hire and retain top talent. Academic radiology departments offering full-time or part-time remote work will have advantages in recruiting.

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Jeffrey P. Kanne, MD, is Chief of Thoracic Imaging and Vice Chair of Quality and Safety in the Department of Radiology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin. Jonathan H. Chung, MD, is Chief of Cardiopulmonary Imaging and Vice Chair of Quality in the Department of Radiology, University of Chicago, Chicago, Illinois.

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Jeffrey P. Kanne, MD: Department of Radiology, University of Wisconsin School of Medicine and Public Health, 600 Highland Ave., MC 3252, Madison, WI 53792-3252; e-mail: jkanne@uwhealth.org