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NOTES FROM THE FIELD

Stand Together and Deliver: Challenges and Opportunities for Rheumatology Education During the COVID-19 Pandemic

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In a matter of weeks, the COVID-19 crisis has totally upended clinical medicine and the practice of rheumatology. Our old ways of seeing patients in person, precepting fellows in clinic or on the consult service, and leading in-person interactive teaching rounds are gone for now and possibly for good. But how can we replace these critical teaching and training elements? Despite the mounting challenges of managing a growing population of COVID-19–infected patients and caregivers, we must find innovative ways to foster our trainees' professional development. The challenge is how to pursue our educational mission safely and effectively during these critical times, when isolation and social distancing have become the new rules of disengagement.

Recent health and environmental crises have provided limited evidence on their disruptive effect on medical training in the US (1). The experience of a Canadian training program during the 2003 SARS epidemic demonstrated that there was fear and anxiety surrounding the potential risk of trainees acquiring SARS (2,3). Residents reported that their scheduled rotations during the epidemic were severely affected, while other educational endeavors were canceled.

More recently, the response to the 2014 Ebola virus disease outbreak raised the question of whether trainees should be allowed to care for infected patients. The Accreditation Council for Graduate Medical Education (ACGME) published guidelines stating that all trainees should gain familiarity with the basic signs and symptoms of Ebola infection, receive training on proper safety protocols for all care settings, and only provide care for patients under direct supervision of attending physicians trained in treatment and infection control (4). Some have argued that residents should be expected to participate in disaster responses: "completely removing trainees from these situations can be detrimental to their overall experience and education" (1,5). As others have noted, "if we avoided all situations that we couldn't understand in advance and that posed any risk, we would spend our lives in a state of paralysis" (6). The key is to strike a balance between the inherent risks associated with serving on the front lines of care during a pandemic and creating sufficient safety measures for our trainees as they move beyond the normal scope of the practice of rheumatology.

We must remember that our fellows are specialists *in training*. They still need our mentoring and guidance to help them navigate through the COVID-19 crisis. They need to proceed along their learning curves, acquiring the knowledge required of a practicing rheumatologist. For this to happen, medical pedagogy must change, and it already has. For example, unprecedented use of videoconferencing during the COVID-19 pandemic is occurring at many levels, particularly to facilitate education and patient care in times of social distancing. "Zoom" has replaced "Google" as our favorite verb. Leveraging video platforms by including trainees from other programs in videoconferences affords an innovative way to expand both the educator and learner pools, thus increasing the value of team-based learning exercises.

We implore program personnel to initiate or maintain and expand telecommunications opportunities in patient care, training evaluation, and education. For example, rheumatology program directors could engage in larger collectives or in smaller groups to promote virtual teaching and training seminars. One of us (SH) recently organized a multiprogram virtual journal club to review the published data and discuss the quality of evidence regarding the use of hydroxychloroquine and chloroquine as treatments for COVID-19 infection. This exercise was attended by 3 times as many participants as a typical journal club (~70 participants) and included rheumatologists from other cities. Such events could serve as a springboard for new virtual education curriculums that could expand well beyond the current urgent needs.

Other potential virtual learning opportunities come to mind. Our role as experts in inflammation might be used to teach the concepts of hyperinflammation and cytokine storm in COVID-19

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infection to an ever-widening audience of our peers and even patients. Telemedicine will allow rheumatologists to interact with colleagues working in areas that are more severely impacted by COVID-19, so that we can quickly disseminate our collective experience. As our own patients become infected, it will be critical that we disseminate the information to our colleagues across the globe; we are all in this together.

Remote learning has its drawbacks, particularly for the assessment of skill acquisition and development. Also, it may restrict our ability to assess a trainees' personal development. Lost are the spontaneous interactions that occur in the "fellows' room" or in the hallway, and the nearly imperceptible whispers during Grand Rounds. One of us (FK) noticed that during video meetings, the chat sections are often very active with thoughtful insights, quips, and sharing of concerns and fears among fellows. It is highly reassuring that *esprit de corps* remains alive and well among our fellows and that the instinctual impetus to gather and share collective experiences remains very powerful. It might be worth making fellows-only chat rooms available in videoconference meetings.

Programs must create protocols for managing both inpatient consults and outpatient care. With the relaxation of many telemedicine-related regulations, telephone and video visits can easily be established as the primary means of maintaining contact with patients to provide guidance through these critical times. Our early experience precepting fellows in telemedicine has been highly successful, and it may become one of the most positive features to emerge from this pandemic. Videoconferencing applications allow for the creation of separate virtual rooms in which the preceptor could be present, and that the fellow could enter when needed.

Inpatient consults require new approaches too, since hospitals are quickly filling up with infected patients. For example, many consultations could occur via video without the need to see the patient in person, with most of the history gathering occurring via telephone or video with the primary team members. The role of the fellow would be to assemble the patient's history, review the data, write the note, discuss the case with the preceptor, formulate a differential diagnosis, and recommend a treatment plan. It is important that the educational value of this activity is demonstrated. Written communication is key. For consult service patients who are infected with COVID-19, there will be opportunities to hold virtual visits using newly developed video programs on Microsoft and other platforms. The key element for all these activities is the practice of safe social distancing. Last, many subspecialty sections are being reorganized into command treatment teams to address the anticipated surge in hospitalized patients. For trainees who are excluded from performing face-to-face encounters, we suggest reorganizing consult teams to allow at least one member (preferably faculty) to participate in face-to-face encounters while fellows gather data and facilitate communication.

During these times of crisis, it is important to remember some key words to guide our thinking about rheumatology training and education. The first is *flexibility*. Flexibility must occur at all levels, including the ACGME, the National Board of Medical Examiners, the American Board of Internal Medicine, the American College of Rheumatology, our sponsoring institutions, our faculty, and all learners. The ACGME granted flexibility for training requirements by enacting a national Pandemic Emergency Status executed under its Extraordinary Circumstances policy. This allows all residents and fellows to care for all patients, while loosening many regulatory requirements. Though supervision requirements and work hour limits remain in effect, all other Common Program Requirements and specialty-specific Program Requirements have been suspended. This allows for subspecialty fellows who are board-certified or -eligible and meet criteria for medical staff appointments to function within their core specialty for up to 20% of the academic year. Recognizing the need and opportunity for medical education to continue and for trainees to remain involved, the ACGME has proven so far to be highly flexible and understanding (7,8).

The second word is *innovation*. As noted above, this includes the deployment of virtual medicine to provide clinical care and rheumatology education. We will need to be able to evaluate competency milestones pertaining to virtual patient visits by our fellows (9). Programs may need to consider using some newly developed tools for virtual-space medicine, including virtual musculoskeletal ultrasound and the use of virtual reality simulators to teach palpation skills (10). Much of radiology is already in the virtual space and should be readily incorporated into rheumatologists' virtual care visits in the near future.

The third key word to guide us is *safety*. Our fellows are young, generally healthy people who represent the future of rheumatology. Program directors will have to carefully weigh requests from their hospitals to deploy trainees to other critical tasks during the pandemic. How do we weigh the risk of acquiring infection when a fellow is the parent of a newborn or is pregnant, postpartum, or has increased personal risk of infection due to underlying medical conditions? These issues have generated considerable anxiety and are not easily answered. Integrated stress management resources that are specialized for medical crisis work must be available to our trainees.

We have entered uncharted waters. The Herculean effort underway to prepare our medical centers for the times ahead requires us to prepare our trainees for these changes, keeping them well informed. It is our duty to ensure their preparedness as trainees remain on the front lines. During this time of crisis, let us reiterate that our trainees embody what is good in medicine. Their education must continue, and we must stand shoulder to shoulder with them and deliver.

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AUTHOR CONTRIBUTIONS

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