Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Correspondence and Replies

The forced renaissance of telemedicine during COVID-19: A fellow-in-training's perspective

To the Editor:

The effort put into the detailed Work Group Report put forth by Hare et al[1] is appreciated, as it comprehensively covers how to start a telemedicine service and the various technical aspects to delivering this type of care. I hope to offer some perspective on how the sudden evolution of telemedicine shaped my fellowship experience.

I am a proud Millennial. The Millennial's role in this environment is crucial given our appreciation of old and new. We grew up with videocassette recorders, but were the first to adopt smartphones and the ubiquitous nature of the internet. Although our offices are equipped with pre-historic fax machines that we begrudgingly use, we also know that more streamlined and secure options exist.

As mentioned by Hare et al, exposure to telemedicine during training has not yet been standardized.[1] Throughout my medical training, I heard whispers of how the future of medicine would be delivered via camera, but actual implementation of these ideas never came to fruition. Seemingly overnight, through the efforts of our attendings, administrative staff, and relaxation of health care regulations,[2] we were setting up telemedicine.

The transition has not been seamless, but honestly, better than expected. I still believe that the quality of in-person office visits is unparalleled with the examination, skin testing, oral challenges, spirometry, and immunotherapy. However, there is value from this digitalization, and there are new standards being created for coordination of care and communication that should endure when COVID is a distant memory.

Certain disease entities can be easily managed through telemedicine. For food allergy, obtaining the history of trigger foods and reviewing avoidance techniques can be performed via telehealth. This can lead to increased efficiency for subsequent "procedural days" for skin testing and recommendations for oral food challenges. Review of indications for epinephrine auto-injectors can be supplemented with instructional videos, and emergency treatment plans can be emailed to reference on smartphones should that dreaded accidental exposure occur.

Using Asthma Control Test scores, we have managed well-controlled asthmatics through telemedicine, though lack of spirometry data has been limiting and certainly, for poorly controlled asthmatics, telemedicine has not proven to be as beneficial. For patients with urticaria or angioedema, we have obtained the history and with the patient's assistance performed maneuvers such as dermatographism and ice cube test via telemedicine.

I agree with the Work Group Report regarding telemedicine expanding access to care. Being located in Manhattan and caring for immunodeficient patients, we have been exceptionally accommodating with telehealth to limit infectious exposures as many rely on mass transit. We remotely review the patient's infectious history, discuss benefits of supplemental immunoglobulin, and have transitioned patients from intravenous to subcutaneous infusions. Furthermore, we have been able to provide immunodeficiency consultation for patients in geographical areas that may not have had access to specialized care without missing work or arranging childcare. Still, this increased access to care is not uniform with lack of technological hardware/internet that may contribute to health care disparities in low-income groups and ageism if there is an over-reliance on telehealth.[3-5]

From the trainee's perspective, the "Print to PDF" and email functions rather than faxing and playing phone tag has saved time in care coordination and feels more reliable. This gained time allows for more academic efforts, such as completing stagnant research projects and partaking in more inquisitive scholarly reading. We have transitioned our didactics to a virtual platform that has been great for interactive group learning, where trainees can share resources and practice questions.

Although everyone is adjusting to the new normal of wearing masks, social distancing, and incessantly washing their hands, now is the time for medicine to adopt a new normal. For us trainees, if any of us have voiced frustrations over antiquated care delivery models, now is an opportunity to help mold the new standard.

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Reply to "The forced renaissance of telemedicine during COVID-19: A fellow-in-training's perspective"

To the Editor:

Waqar and Agarwal[1] make significant points regarding the rapid adoption of technology, specifically telemedicine, into fellowship programs. As all of the authors in the American Academy of Allergy, Asthma & Immunology telemedicine work group will attest to, many factors need to be taken into account before adopting a functional telemedicine platform in the clinic. Keeping

up with current regulations to maintain compliance in light of the changes during the COVID-19 pandemic and beyond also requires considerable effort.[2] What is uniquely addressed in this letter are the practical issues that allergists and immunologists face with telemedicine. Although spirometry is limited at this time, technologies are being created and implemented to accomplish home forced expiratory volume in 1 second measurement.[3] Assessing and teaching the inhaler and emergency epinephrine device technique can be performed remotely and re-evaluated at follow-up visits via telemedicine. Telemedicine has also been valuable to evaluate and monitor our most at-risk patients, such as those with immunodeficiency, as they may be fearful of returning to the clinic for routine in-person evaluations. Time will reveal more data in our field as we are able to obtain cost-benefit analysis for allergy and immunology telemedicine encounters. By providing innovative, valuable, and cost-effective care while educating our fellows and continuing to rapidly adapt in times of need, we will persist in pushing open the door of modern medical technology in health care.

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Mortality-related immune features and COVID-19

To the Editor:

We would like to share ideas on the report "Predictive nomogram for severe COVID-19 and identification of mortality-related immune features."[1] Cai et al[1] noted that "the abundance of $CD45RO^{+}CD3^{+}$ T cells and neutrophil-to-lymphocyte and neutrophil-to-natural killer cell ratios may serve as useful prognostic predictors in severe patients." The finding from this small study is interesting. Indeed, the change in white blood cells in coronavirus disease 2019 (COVID-19) is possible and might contribute to the clinical manifestations.[2] Several factors can additionally contribute to the severity of infection. The underlying disease of the patient might also be reactivated because of COVID-19. Nevertheless, as noted by Lupia et al,[3] there is a role of cytokine response during COVID-19 illness that is an important determinant for severity, and the clinical problem due to change in white cells might be overt during the recovery stage of COVID-19 when there is a decreased level of cytokine response.

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Reply to "Mortality-related immune features and COVID-19"

To the Editor:

We have read with interest the comments by Mungmunpuntipantip and Wiwanitkit,[1] and we agree that cytokines are associated with disease severity and have an effect on the underlying