

**Title: Maintaining high quality multidisciplinary pain medicine fellowship programs:  
Part I: Innovations in pain fellows' education, research, applicant selection process,  
wellness and ACGME implementation during the Covid-19 pandemic**

**Abbreviated Title: Pain fellows' education and research during Covid-19**

**Authors: Lynn Kohan, MD<sup>1</sup>, Susan Moeschler<sup>2</sup>, Boris Spektor<sup>3</sup>, Rene Przkora<sup>4</sup>, Cristopher Sobey<sup>5</sup>, Scott Brancolini<sup>6</sup>, Sayed Wahezi<sup>7</sup>, Magdalena Anitescu<sup>8</sup> MD, PhD**

**Affiliations:**

<sup>1</sup> Associate Professor, Department of Anesthesiology, Division of Pain Medicine, University of Virginia, Charlottesville, VA

<sup>2</sup> Associate Professor, Department of Anesthesiology and Perioperative Medicine, Division of Pain Medicine, Mayo Clinic

<sup>3</sup> Assistant Professor, Department of Anesthesiology, Emory School of Medicine

<sup>4</sup> Professor, Chief Pain Medicine Division, Department of Anesthesiology, College of Medicine, University of Florida

<sup>5</sup> Assistant Professor of Clinical Anesthesiology, Vanderbilt University Medical Center

<sup>6</sup> Associate professor, department of anesthesia, University of Pittsburgh medical center

<sup>7</sup> Associate Professor Physical Medicine and Rehabilitation, Anesthesiology, and Orthopedic, Montefiore Medical Center

<sup>8</sup> Professor, Section chief pain management department of anesthesia and critical care medicine university of Chicago

**Corresponding author(s)**

**Lynn R. Kohan, MD**

Pain Management Center

Fontaine Research Park, Third Floor, 545 Ray C Hunt Dr.

Charlottesville, VA 22908

434-243-5676

[Lrk9g@hscmail,mcc.virginia.edu](mailto:Lrk9g@hscmail,mcc.virginia.edu)

**Magdalena Anitescu, MD, PhD**

Department of Anesthesia and Critical Care

5841 S. Maryland Ave, MC 4028

Chicago, IL 60637

[manitescu@dacc.uchicago.edu](mailto:manitescu@dacc.uchicago.edu)

**Funding:**

No funding was received.

**Conflict of interest:**

All authors are officers or board members of the Association of Pain Program Directors.

## **Abstract**

**Background:** Pain fellowship programs are facing unique challenges during the COVID-19 pandemic. Restrictions from state governments and the Centers for Disease Control and Prevention have resulted in a rapidly changing and evolving learning environment for today's fellows. Innovative solutions must be sought to guarantee proper education is maintained and ensure the well-being of our trainees.

**Methods:** We assembled a panel of pain program directors who serve as officers/board members of the Association of Pain Program Directors to provide guidance and formulate recommendations to pain fellowship directors nationally. This guidance is based on reviewing current changes to Accreditation Council Graduate Medical Education (ACGME) and American Board Anesthesiology policies and best available evidence and expert opinion on use of remote educational activities, research endeavors, and trainee wellness.

**Conclusions:** The country is in the midst of an unprecedented pandemic. The impact on pain management fellowships has been severe and will likely last for months, resulting in extraordinary challenges to the administration of pain fellowship programs and the education of our fellows. Understanding revisions in ACGME policies, use of technology to promote remote learning opportunities, and providing trainees with opportunities to alleviate their anxieties and encourage mental health are beneficial strategies to implement. Together, we can implement innovative solutions to help overcome these challenges.

## **Key Words**

COVID-19

Pandemic

Fellowship program

Pain Management

Accreditation Council Graduate Medical Education Telehealth

Competency

Wellness

## **Introduction**

The mounting COVID-19 pandemic is increasing pressures within the medical community across the country. While there is a wide variation of the current impact of the pandemic on institutions, it is clear that institutions must prepare for the anticipated surge of patients infected with the novel coronavirus. In the context of the COVID-19 pandemic, a new conceptual framework for pain medicine fellowship education is needed. “Social distancing” requirements are having a profound impact on clinic operations that may alter the clinical duties of fellows, including but not limited to decreased clinical/procedural volumes and possible deployment to their primary specialty or to the care of COVID-19-positive patients.

As clinic visits and elective procedures have been curtailed, if not completely eliminated (1), fellows’ skills may deteriorate or they may fail to acquire the necessary skill levels required to provide autonomous care. The standard evaluation processes of fellows may be altered secondary to these changes.

As such, programs must adapt their educational agendas to account for social distancing and to understand the impact on board certifications. Educational program changes need to incorporate the use of remote conferencing and, in some cases, educational activities might be suspended altogether.

Interview processes may also need to be redefined given current travel restrictions with implications on the ability of programs and applicants to sufficiently highlight their strengths. Research activities at most institutions have been suspended, thus impacting fellows’ academic production.

Finally, with the pandemic come feelings of social isolation, anxiety, and depression that can necessitate a better understanding of the best resources to protect the mental well-being of our trainees.

The aim of this article, organized in 5 sections, is provide guidance of (1) issues related to the Accreditation Council for Graduate Medical Education (ACGME); (2) education; (3) fellowship interviews in the context of COVID-19; (4) research; and (5) fellow wellness. We hope to provide much-needed resources to maintain the high quality of pain fellowship education during this unprecedented time.

## **Methods**

Amongst the growing COVID-19 pandemic, pain fellowship PD's have mounting requests for guidance on maintaining quality multidisciplinary pain fellowship programs. To address this need, a conference call was held by officers and board members of the APPD on March April 9 2020 to determine the need for pain fellowship guidelines. Based on the conference call, an outline was prepared with each member selecting a section to author. All authors agreed to submit their sections within 6 days. The final document was reviewed and revised by the corresponding authors and submitted for publication to "Pain Medicine" on April 23 2020.

## **Section I**

### **ALTERATIONS IN ACGME POLICIES**

It is evident that fellows in the current academic year may not be able to satisfy clinical, procedural, and educational requirements as set forth by ACGME. However, ACGME is committed to playing an active role in guiding institutions through the pandemic. While ACGME recognizes the undue burden and limitation of resources currently affecting hospital systems, the organization reaffirms the importance of maintaining the Common Core Requirements (Section VI.F.) for all accredited programs nationally [1]. The organization affirms that these requirements are based on multicenter educational trials over the past decade, which demonstrate that violations are associated with increased risk to patients and trainees.

ACGME provides guidance on stages of operation within institutions based on the severity of the pandemic within each institution. Sponsoring institutions and any participating sites are set to function at one of three stages along a continuum:

Stage 1: Business as usual

Stage 2: Increased but manageable clinical demand

Stage 3: Crossing a threshold beyond which the increase in volume and/or severity of illness creates an extraordinary circumstance in which routine care, education, and delivery must be reconfigured to focus only on patient care [2]. [Figure 1]

**[Insert Figure 1]**

Regardless of stage, ACGME has suspended the following activities during the pandemic: site visits, Accreditation and Clinical Learning Environment Review (CLER), self-study, and ACGME surveys.

It is recognized by ACGME that institutions and programs in stages 1 and 2 are planning for stage 3. ACGME program expectations during these stages are as follows:

Programs in **Stage 1** are expected to follow all relevant accreditation requirements except as noted above [suspension of site visits (accreditation and CLER), self-study, and ACGME surveys]. ACGME surveys will still be available to programs that elect to complete them voluntarily. However, as the surveys have typically been analyzed in the context of all responders and the response rate is likely to be reduced, it is unclear the extent of analyzed data that will be available [3].

In addition, all site visits have been suspended to avoid further stress on clinical environments during the pandemic and diminish the risk to and from site visitors [4]. During this stage, there is no disruption to patient care or education and there is no redeployment of fellows [5]. ACGME also implemented revisions to the Common Program Requirements that allow and encourage expanded use of tele-supervision [3]. These revisions apply to all stages of graduate medical education (GME), including stage 1.

For programs **in Stage 2**, some clinical duties or educational activities will be cancelled. Those in stage 2 should begin preparing for changes that might occur if stage 3 is reached. In stage 2, fellows may be reassigned to work as attendings up to 20% of the time. While each institution may have its own rules regarding transition from fellow to attending status, the re-deployed trainee may need to undergo a credentialing process initiated via the local GME at the request of the department. Reassignments can occur to other rotations or forms of clinical work within the department. Fellows can also be re-deployed to serve other care-related needs within the scope of their abilities. When redeployed in this manner, the fellow still functions in the role of a fellow; not as an attending. There is no limit on time the fellow can be redeployed in this

manner. Fellows still must abide by work-hour limits, supervision requirements, training requirements, and be provided with adequate resources. [Table 1].

**[Insert Table 1]**

ACGME speculates the violation of duty hours during the pandemic can lead to lapses in infection control procedures, resulting in increased COVID-19 (SARS COV2) virus infection in residents and fellows [2].

Flexibility will be awarded by ACGME for re-assigned fellows who do not accrue required minimums for graduation. It is ultimately the responsibility of the Clinical Competency Committee to assess a prospective graduating fellow's level of competence and hence graduation eligibility [6]. Flexibility will also be permitted for educational program changes and disruptions. However, if the disruptions to educational activities exceed 30 days, the relevant review committee executive director should be contacted.

ACGME recognizes the extraordinary circumstances encountered by institutions in stage 3. Therefore, ACGME has developed a process under its existing Extraordinary Circumstances Policy (ACMGE Policy 21.0) to accommodate the need for attendings, residents, and fellows, to care for patients to the best of their ability during the Covid pandemic.

Programs **in Stage 3** should consider self-declaring a Pandemic Emergency Status in accordance with the appropriate procedure [2]. [See appendix 1].

The declaration of stage 3 is an institutional level decision. The institution must inform ACGME before implementation and communicate to all program directors (PDs) and coordinators. In stage 3, all or most residents/fellows are shifted to patient care and the majority of educational activities are suspended. Residents/fellows still need to abide by work-hour limits, supervision and training requirements, and are provided with adequate resources [Table 1]. Fellows are allowed to function as attendings in their core specialty up to 20% of the time if they are board certified/eligible. Fellows can also be re-deployed to serve other care-related needs

within the scope of their ability. When redeployed in this manner, the fellow still functions in the role of a fellow; not as an attending. There is no limit on the number of times the fellow can be redeployed in this manner. Fellows must receive detailed communications regarding how long the re-deployment will last and any impact on their ability to complete the program on time. Given that fellows will have decreased clinic/procedural exposure, the program director can deem that fellows meet the criteria for autonomous practice, thereby enabling the fellow to graduate on time [7].

A summary of the 3 stages is provided in table 2.

**[Insert table 2]**

ACGME understands the serious challenges that hospitals and teaching institutions must endure during this time and seeks to reduce the regulatory burden on programs so care can be appropriately provided to patients affected by the pandemic.

ACGME understands that fellows may not complete all of their planned assignments within the curriculum. The decision to deem a fellow clinically competent is determined by the program director with input from the Clinical Competency Committee. This decision is based on the fellow's ability to perform medical, diagnostic, and procedural/surgical skills appropriately. Therefore, a fellow could be deemed competent for graduating even if the fellow has not completed the previously scheduled curriculum. In contrast, if the program director, with guidance from the Clinical Competency Committee, determines additional training is necessary, an extension of educational program training should be provided [6].

It is important for the PD to understand these ACGME stages and policy revisions in order to successfully administer their program during the COVID-19 pandemic.

## **Section II**

### **EDUCATION**

The PD must understand the impact of COVID-19 on fellows' education. Fellows are experiencing variability in clinical load by location and program. While some fellows are thrust



into new, critical assignments others are working from home and participating in telehealth visits. As such, the time and space that fellows have to spend on studying and self-directed learning is also variable. With this in mind, the ongoing education of pain medicine fellows during this pandemic is important. Programs, faculty, societies, and industry are all putting forth additional efforts to provide resources aimed at providing education in novel methods.

Self-guided learning, an important skill during medical training, is of utmost importance at this time. Establishing timelines and daily goals can help keep track of topics and resources. These include webinars, pre-recorded lectures, and recorded conferences provided by medical societies and industry. Programs can utilize various platforms to engage in virtual journal clubs, lectures, and case-based discussions. Home-based education opportunities available to fellows arise from collaborations between multidisciplinary pain fellowship programs across the country. As of mid-April, one such initiative between the University of Washington and Brigham and Women's programs attract fellows with common lectures, case discussions, and journal clubs. Such inter-institution initiatives add to the educational opportunities available to fellows enrolled in pain fellowships; these educational endeavors constantly expand by inviting additional programs across the country [8]. Similar virtual processes should be used for faculty meetings, including clinical competency committee meetings and annual program evaluations.

The American Board of Anesthesiology (ABA) administered applied ITE (in-training exam) was initially offered March 19-21, 2020. At the time of this publication, it is expected to be offered to current pain medicine fellows in May 2020. This is intended as a self-assessment for pain fellows prior to taking the Pain Medicine Board exam. In order for a physician to be eligible to take the pain medicine board exam, he/she must have completed a 12-month ACGME fellowship and be boarded by the ABA in Anesthesiology (or other ACGME approved core programs: PMR, Neurology, Psychiatry, and Child Neurology).

Because of the COVID-19 pandemic, the ABA has cancelled and delayed the traditional part 2 exams that were to be held in April and May 2020, in Raleigh, NC. These cancellations affect current pain fellows who were planning to take the exam during these dates in anticipation of then sitting for the Pain Medicine Board Exam. The ABA pain medicine boards are currently

scheduled for September 12, 2020 [9]. However, graduating fellows may not be eligible as they will not be ABA board certified given the cancellation of the part 2 exams.

In addition, the American Board of Physical Medicine and Rehabilitation (ABPMR) has rescheduled the part 2 board exam scheduled for September 12-13, 2020 [10]. This currently overlaps with the date of the aforementioned pain medicine boards. The APPD has communicated via letter to ABPMR regarding this overlap in dates. There have been no further updates regarding the date of the Pain Medicine Board exam at this time.

A part 2 examination is not required by the American Board of Psychiatry and Neurology; thus no implications exist for graduating fellows to participate in the Pain Medicine Board Examination.

### **Section III**

## **COVID-19 AND FELLOWSHIP INTERVIEWS**

The main purpose of fellowship interviews is to match the best candidate to the best program and vice versa. The gold standard is an in-person or traditional interview between the candidate and the training institution. The COVID-19 pandemic has severely limited the option of traditional interviews due to increased clinical duties, travel restrictions, and preventive measures to contain the disease. Web-based interviews (e.g., videoconferences) using digital platforms are an alternative. The acceptance of web-based interviews by applicants and interviewers in residency and fellowship settings has been studied, but not extensively. Healy et al. reported that more than 80% of applicants interviewed for an adult reconstructive surgery fellowship stated that their expectations were met; however, 30% stated that the videoconference interview had a negative impact on their ranking of the fellowship program [11]. Shah et al. analyzed applicants for their institution's urology residency and reported that applicants found the web-based interview less effective compared to the traditional interview format [12, 13]. Both studies found that applicants appreciated the convenience and cost-saving benefits of web-based interviews. Vadi et al. directly compared in-person versus web-based interviews in a pilot study of 211 candidates who applied for an anesthesiology residency [14]. In the study, 127 applicants (75.1%) completed face-to-face interviews and 42 (24.9%) completed web-based interviews. The researchers found that the type of interview did not influence which applicants

were selected for admission to the residency program. Vadi and team concluded that web-based interviews are a viable alternative to traditional interviews [14].

All of the studies referenced also identified common positive aspects of web-based interviews, such as ease of scheduling, financial savings, and less impact on personal time. However, in-person interviews would ideally give applicants a better “feel” of the programs that they would visit; this raises an interesting question about how applicants will actually choose a new program versus programs that applicants had previously considered at some time point during residency training. When restrictions are in place by local and federal governments, programs must find ways to promote their own strengths via virtual platforms. Based on these findings and the COVID-19 crisis, the Association of Pain Program Directors (APPD) issued a statement on March 13, 2020, endorsing web-based interviews to assist our future fellows and training programs during these difficult times.

## **Section IV**

### **RESEARCH**

The COVID-19 pandemic has had a major impact on biomedical research, most prevalent for research-intensive institutions. Trainees involved in research at those institutions followed the rules established in concordance with both social distancing and individual states’ executive orders.

Individual institutional policies on conducting research during the COVID-19 pandemic generally follow several key principles:

1. Non-critical research and/or research-related activities must be performed remotely
2. Strict adherence to social distancing
3. New projects requiring in-person completion are not permitted; however, COVID-19 related research whether basic or clinical is permitted and encouraged

In many institutions, laboratories have closed their doors with only essential and critical personnel allowed to enter the facilities. When research is deemed critical, a rotation system may allow a critical laboratory member to enter the facility [15]. While many laboratory research

activities are conducted remotely, current active and therapeutic clinical trials are maintained. (Figure 2)

**[Insert figure 2]**

Fellows with protected time for research during their 1-year fellowship and those that have additional research time added to their fellowship face unique challenges stemming from the abrupt interruption of research activities and the indeterminate timeframe for restoring these activities.

In these situations, trainees involved in research may experience high levels of anxiety regarding completion of their projects. The majority may exhibit signs of frustration related to feeling unproductive and unable to advance potentially exciting discoveries. Therefore, the program director in collaboration with the research supervisor will need to help these fellows adjust their thinking and address these challenges in complementary ways (Figure 3).

**[Insert Figure 3]**

As communications continue via teleconferences, clinical research that does not involve patient contact can be maintained remotely. Fellows interested in pursuing academic careers should be encouraged to participate in other scholarly activities, such as planning and writing grants, submitting papers, and summarizing current and ongoing research.

It is important for fellows to continue exploring their research interests. As such, direct supervisors and program directors should maintain the research momentum and maintain motivation. Several activities should be emphasized and encouraged, including changing target journals, maintaining virtual lab meetings or research seminars, preserving their academic needs, and creating novel research opportunities. [16, 17].

In terms of novel opportunities, COVID-19 related projects are on an ascending curve [18]. In the current pandemic, there are significant funding opportunities for basic and clinical research related to solutions for treatment [18, 19], vaccines, or testing [20]. Important areas of research may also be related to baseline biometric measurements of affected populations,

identifying risk factors or sequelae of disease. As such, fellow researchers could be encouraged to participate in these novel projects.

In the more clinical-oriented programs, typical examples of scholarly activities include writing or participating in preparing a book chapter, giving presentations at scientific meetings, participating in grand rounds presentations, and conducting quality improvement projects. In the context of COVID-19, scholarly activities and projects must continue but the type of project should be carefully considered. For example, quality improvement projects and book chapters may have a higher likelihood of successful completion compared to developing a presentation for a national meeting that may be cancelled. In the current state of COVID-19 pandemic, scholarly projects still need to be completed; however, choosing projects plays an important role. Quality assurance projects or book chapters may be more appropriate to finalize than a presentation at a national meeting that was cancelled due to the pandemic.

To maintain the quality of the pain fellowship programs, scholarly activity must continue even in the context of the pandemic. Leadership from the PD's is critical to identify barriers and enhance facilitators of a broad range of feasible scholarly activities. Successful leadership will be needed to successfully change the direction of ongoing scholarly activities and re-orient fellows toward the alternative projects.

## **Section V**

### **FELLOW WELLNESS DURING COVID-19**

Infectious disease outbreaks significantly impact the physical and psychological well-being of communities, patients, and medical providers [21]. Studies from prior pandemics including the severe acute respiratory syndrome (SARS) outbreak in 2002-3, H1N1 influenza pandemic in 2009, and Middle East respiratory syndrome (MERS) in 2012 reveal marked anxiety; this has been confirmed among medical providers during the COVID-19 pandemic. Increased anxiety levels and fear are attributed to a sense of personal vulnerability, uncertainty regarding risk and available personal protective equipment, rapidly changing prevention guidelines, the health of family members, economic instability, separation from friends and

loved ones resulting from social distancing, and disruption in work and life routines [21, 22]. A perceived lack of control with possible redeployment into less familiar, high acuity clinical care environments further facilitates a sense of fear and anxiety, and post-traumatic stress symptoms may arise, manifesting in intrusive thoughts, nightmares, and hypervigilance.

Fellows with young children face the additional burden of school closures necessitating alternate childcare and education planning. Fellows with older children are tackling a nebulous landscape wherein standardized testing may have been delayed with unclear implications for college planning [23]. Working from home while balancing parental responsibilities, clinical and research activities can be overwhelming [23]. Depressive symptoms may arise secondary to disruption in daily routines, isolation, impaired sleep patterns, loss of control, and potential negative effects on future job prospects [21]. Feelings of anger and irritability may ensue as well as a sense of grief and loss. Potential areas of loss include loss of one's prior way of life, financial loss, and loss of control [21]. Stigmatization and xenophobia toward Asian-Americans is being reported during COVID-19, creating feelings of abandonment and isolation [21]. In China, more than 70% of healthcare workers during this pandemic report insomnia, anxiety, and depression [23].

COVID-19 has undoubtedly increased the risk of burnout among medical providers (including emotional exhaustion, depersonalization, and a sense of reduced personal accomplishment), already deemed a significant challenge for medical trainees prior to the current COVID-19 pandemic [23, 24]. The repercussions of burnout include increased medical errors, impaired professionalism and empathy, higher rates of drug and alcohol abuse, domestic violence, and suicide [23]. It is imperative to recognize the warning signs of depression and anxiety, PTSD, and substance abuse; the signs include withdrawal and social isolation, absenteeism, irritability, and agitation. Providers with pre-existing psychiatric comorbidities are at higher risk for suicide (2).

Wellness has been conceived as the opposite of burnout, encompassing a multifaceted blend of individual physical, mental, and emotional health [23]. Interventions to reduce burnout and improve wellness can take the form of individualized approaches or organizational

strategies, and both have proven effective in randomized trials [25]. Effective individual strategies include mindfulness, stress management training, and small group curricula [25]. The Strength-focused and Meaning-oriented Approach to Resilience and Transformation (SMART) has been utilized by social workers in times of crisis to foster resilience and growth and can be implemented during the COVID-19 pandemic. SMART emphasizes a mind/body/spirit connection to promote awareness, understanding, compassion, and gratitude [22]. Multiple mindfulness, relaxation, and breathing apps are available, including Headspace (free during the COVID19 pandemic with NPI number), Calm, Breathe2Relax, Insight Timer, and Happify. Social connectedness through virtual means is essential despite mandated physical distancing; social isolation is strongly discouraged [22]. Limiting media consumption may help reduce stress. Additionally, daily gratitude practice through journaling has been shown to improve sleep and well-being, while religious or spiritual practices among medical trainees can help reduce burnout and improve coping skills [22].

For trainees, a variety of organizational strategies can foster well-being, such as establishing regular phone/video communications to check-in with fellows. Historically, healthcare professionals avoid assistance when experiencing depression and suicidality, generally due to concerns about confidentiality, stigma, costs, time, and perceived negative career implications. It is imperative to provide affordable, confidential, and convenient access to psychological services [22]. Group mindfulness sessions can be integrated into online didactic sessions to promote social connection and well-being. Further, with the elevated risk of infection among healthcare staff, many concerned trainees are requesting institutional access to legal services intended to secure financial resources for their families and ensure advance directives are clarified should incapacitation occur. Facilitating housing options is another important organizational strategy for ill trainees who do not wish to return home to avoid potentially infecting their families. Additionally, providing assistance with child care services can significantly reduce familial stress. Organizations may facilitate use of community-donated resources such as food vouchers to promote self-care and healthy nutrition. When scholarly work pursuits are feasible, assigning small, concrete educational projects that are more manageable avoids overwhelming fellows, creating a sense of accomplishment and enhancing

satisfaction [22]. Burnout is also minimized by maintaining duty-hour restrictions and optimizing local work protocols when possible [26]. (Appendix 2)

In addition to providing resources for fellows mental and psychological well-being, it is important to consider whether trainees should receive special protections against the risk of COVID-19 infection. Policies to protect trainees among institutions. Individual GME offices within institutions are responsible for this guidance. While some institutions recommend the same level of protection to trainees as other healthcare providers within the institution, others are excluding trainees from care of COVID-19 positive patients. While these policies may differ based on the climate of the local GME, the scope and extent of the pandemic within the institution may also drive these policies or policies may evolve as the number of cases within the institutions grows. Techniques to protect fellows who directly care for COVID-19 positive patients include mandatory detailed instruction on proper donning of PPE and providing comprehensive pre-treatment plans as well as thorough debriefings. Following detailed protocols and minimizing exposure will help to ensure the safety of our trainees.

## **Conclusions**

The COVID-19 pandemic has deeply impacted numerous aspects of pain fellowship programs, including education, clinical experience, research, and future employment opportunities. While none of us have faced such challenges in the past, resources are available to help us navigate this challenging time. The ACGME is revising its policies to protect trainees and to provide administrative guidance to PDs. Education has evolved to allow for remote conferences with the additional benefit of increasing collaboration among institutions. Research has mostly halted, but programs with less clinical needs may encourage fellows to use this time to complete unfinished projects or write grants. Finally, fellows may experience significant stressors related to changes in clinical duties, re-deployment concerns, and fear of getting sick or being quarantined. PDs can provide fellows with resources to mitigate deleterious mental health effects. Armed with these tools, PDs can help steer our fellows through these unprecedented times.





## References

1. COVID-19: Recommendations for management of elective surgical procedures. Available at: <https://www.facs.org/covid-19/clinical-guidance/elective-surgery>. Accessed 25 March 2020.
2. ACGME response to pandemic. <https://acgme.org/Newsroom/Newsroom-Details/ArticleID/10111/ACGME-Response-to-the-Coronavirus-COVID-19>. Accessed April 10 2020.
3. ACGME response to COVID-19: Clarification regarding telemedicine and ACGME surveys. Available at: <https://www.acgme.org/Newsroom/Blog/Details/ArticleID/10125/ACGME-Response-to-COVID-19-Clarification-regarding-Telemedicine-and-ACGME-Surveys>. Accessed 25 March 2020. <https://www.acgme.org/COVID-19>
4. Updated: Coronavirus (COVID-19) and ACGME site visits, educational activities, and other meetings. <https://acgme.org/Newsroom/Newsroom-Details/ArticleID/10169/The-ACGME-Common-Program-Requirements-and-COVID-19>. Accessed April 10 2020.
5. [<https://www.acgme.org/COVID-19/Three-Stages-of-GME-During-the-COVID-19-pandemic>]. Accessed March 25, 2020.
6. <https://www.acgme.org/COVID-19/Stage-2-Increased-Clinical-Demands-Guidance>. Accessed March 25, 2020.
7. <https://www.acgme.org/COVID-19/Stage-3-Pandemic-Emergency-Status-Guidance>. Accessed March 25, 2020
8. <https://sites.google.com/uw.edu/coepe/training-opportunities/for-trainees?authuser=0>. Accessed April 10, 2020.
9. <http://www.theaba.org/Exams/Pain-Medicine-Certification/Pain-Medicine-Certification>. Accessed April 10, 2020.
10. <https://www.abpmr.org/Primary/PartII>, accessed April 8, 2020
11. Adler-Milstein J, Kvedar J, Bates DW. Telehealth among US hospitals: several factors, including state reimbursement and licensure policies, influence adoption. *Health Aff (Millwood)* 2014; 33:207-15.
12. Healy WL, Bedair H. Videoconference Interviews for an Adult Reconstruction Fellowship: Lessons Learned. *J Bone Joint Surg Am.* 2017;99(21):e114.
13. Shah SK, Arora S, Skipper B, Kalishman S, Timm TC, Smith AY. Randomized evaluation of a web based interview process for urology resident selection. *J Urol.* 2012;187(4):1380-4.
14. Vadi MG, Malkin MR, Lenart J, Stier GR, Gatling JW, Applegate RL. Comparison of web-based and face-to-face interviews for application to an anesthesiology training program: a pilot study. *Int J Med Educ.* 2016;7:102-8.
15. Omary MB, Eswaraka JR, Kimball SD, Moghe PV, Panettieri Jr RA, Scotto KW. The COVID-19 pandemic and research shutdown: staying safe and productive. *The Journal of Clinical Investigation.* 2020 April 3. <https://doi.org/10.1172/JCI138646>.
16. Eisen MB, Akhmanova A, Behrens TE, Weigel D. Peer Review: Publishing in the time of COVID-19. *eLife.* 2020;9:e57162.
17. Conte ML, Omary MB (2018). NIH career development awards: Conversion to research grants and regional distribution. *J Clin Invest* 128:5187-5190.

18. <https://www.clinicaltrials.gov/ct2/results?cond=COVID-19> (clinical trials for COVID-19) Accessed April 3, 2020.
19. <https://www.nature.com/articles/d41586-020-00888-7> (about research on drugs). Accessed April 3, 2020.
20. <https://www.bloomberg.com/news/articles/2020-03-27/abbott-launches-5-minute-covid-19-test-for-use-almost-anywhere> (about abbot tests). Accessed April 3, 2020.
21. Chew QH et al. Narrative synthesis of psychological and coping responses towards emerging infectious disease outbreaks in the general population: practical considerations for the COVID-19 pandemic. *Singapore Med J* 2020 Apr 3. Epub ahead of print.
22. Shanafelt T et al. Viewpoint: understanding and addressing sources of anxiety among healthcare professionals during the COVID-19 pandemic. *JAMA* 2020; Epub ahead of print.
23. Bansal P et al. Clinician wellness during the COVID-19 pandemic: extraordinary times and unusual challenges for the allergist/immunologist. *J Allergy Clin Immunol Pract* 2020 Apr 4. Epub ahead of print.
24. Lefebvre DC. Perspective: resident physician wellness: a new hope. *Acad Med* 2012 May; 87(5): 598-602.
25. Aggarwal R et al. Resident wellness: an intervention to decrease burnout and increase resiliency and happiness. *MedEdPortal* 2017;13:10651
26. West CP et al. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet* 2016; 388:2272-81.

## Figure legends

Figure 1. Infographic on ACGME response to the COVID-19 pandemic, courtesy of American Society of Regional Anesthesia and Pain Medicine

Figure 2. Responsibilities of program directors and research advisors involved in pain fellow research. All non-Covid research except therapeutic clinical trials have reduced effort due to maintaining social distancing and safety of laboratory personnel. Animal studies are similarly reduced with only critical personnel maintained for the care and safety of the animals. New research related to COVID-19 is emerging. Program directors and research supervisors are tasked to continue mentoring and educating fellows, guiding budding researchers toward novel subjects of study and new projects that can be completed within the pandemic restrictions.

Figure 3. Change in activities of the pain fellow involved in research. Guided by the program director and research advisor, pain fellows involved in research may direct focus on different activities; while having limited on-site research presence fellows may now focus on writing grants, publishing current-stage research, and starting projects related to COVID-19 while maintaining close communication with supervisors to maintain critical research.

Table 1. Elements maintained through the graduate medical education continuum of stages during the COVID-19 pandemic

**1. Adequate Resources and Training**

All residents/fellows must be trained in, and be provided with, **appropriate infection protection for the clinical setting and situation**. Appropriateness should consider the needs of the patient and the health care team, as well as the range of clinical care services being provided. Residents/fellows must only be assigned to participating sites that **ensure the safety of patients and residents/fellows**.

**2. Adequate Supervision**

Any resident/fellow who provides care to patients will do so **under appropriate supervision for the clinical circumstance and for the level of education and experience** of the resident/fellow. Faculty members are expected to have been trained in treatment and infection control protocols and procedures adopted by their local health care settings.

**3. Work-Hour Requirements**

The ACGME Common Program Requirements in Section VI.F. addressing work hours **remain unchanged**. Safety of patients and residents/fellows is ACGME's highest priority, and it is vital that all residents and fellows receive adequate rest between clinical duties. Violations of the work-hour limitations have been associated with an increase in medical errors, needle sticks, and other adverse events that might lead to lapses in infection control. Deviations in this domain could increase risks for both patients and residents/fellows.

**4. Fellows Functioning in Core Specialty**


Fellows in ACGME-accredited programs **can function within their core specialty, consistent with the policies and procedures of the sponsoring institution** and its participating sites, if:

- a. they are American Board of Medical Specialties (ABMS) or American Osteopathic Association (AOA) board-eligible or -certified in the core specialty;
- b. they are appointed to the medical staff at the Sponsoring Institution; and,
- c. their time spent on their core specialty service is limited to 20 percent of their annual education time in any academic year.

Reprinted with permission from ACGME. (<https://acgme.org/COVID-19/Three-Stages-of-GME-During-the-COVID-19-Pandemic/Stage-2-Increased-Clinical-Demands-Guidance>)

Table 2

Three stages of Graduate Medical Education During the Covid-19 Pandemic

|                               | Stage 1:<br>"Business as Usual" »   | Stage 2:<br>Increased Clinical Demands Guidance »   | Stage 3:<br>Pandemic Emergency Status Guidance »   |
|-------------------------------|---|---|--|
| <b>Definition</b>             | No significant disruption of patient care and educational activities; planning underway for increased clinical demands  | Some residents/fellows need to shift to patient care duties; some educational activities are suspended  | Most or all residents/fellows need to shift to patient care; majority of educational activities are suspended  |
| <b>Requirements in Effect</b> | Governed by the Common and specialty-specific Program Requirements  | Governed by the Common and specialty-specific Program Requirements and variances addressed in the Stage 2: Increased Clinical Demands Guidance  | Governed by four overriding requirements: <ul style="list-style-type: none"> <li>• Work hour limit requirements</li> <li>• Resources and training requirements</li> <li>• Supervision requirements</li> <li>• Fellows allowed to function in core specialty</li> </ul> |
| <b>Flexibility</b>            | ACGME activities suspended: <ul style="list-style-type: none"> <li>• Site Visits (accreditation, recognition, and CLER)</li> <li>• Self-Study</li> <li>• ACGME Surveys</li> </ul> Telemedicine requirements in effect | Stage 1 plus variances addressed in the Stage 2: Increased Clinical Demands Guidance, on the following: <ul style="list-style-type: none"> <li>• Fellows working as attendings</li> <li>• Residents/fellows <ul style="list-style-type: none"> <li>◦ reassigned</li> <li>◦ fail to accrue required minimums</li> <li>◦ graduation</li> </ul> </li> <li>• Educational program changes</li> <li>• Review Committee evaluation of disruptions</li> </ul> | <b>Stages 1 and 2 plus specialty-specific requirements waived</b>  |
| <b>ACGME Notification</b>     |   | If educational activities are disrupted for over 30 days, contact the relevant  Review Committee Executive Director  | Sponsoring Institutions can declare Pandemic Emergency Status; contact Institutional Review Committee Executive Director   |

Reprinted with permission from ACGME. (<https://acgme.org/COVID-19/Three-Stages-of-GME-During-the-COVID-19-Pandemic>)

# GRADUATE MEDICAL EDUCATION DURING THE COVID-19 PANDEMIC

3 STAGES ALONG A CONTINUUM based on information from [www.acgme.org/COVID-19](http://www.acgme.org/COVID-19)



## 1. BUSINESS AS USUAL

NO DISRUPTION TO PATIENT CARE OR EDUCATION

- Plan for stages 2 and/or 3.
- Site visits, accreditation, CLER, self-study, and ACGME surveys are suspended.
- Telemedicine requirements are in effect.
- No redeployment of fellows.

## 2. INCREASED BUT MANAGEABLE CLINICAL DEMAND

SOME CLINICAL DUTIES/EDUCATIONAL ACTIVITIES CANCELLED

- Plan for stage 3.
- Suspension of site visits (Accreditation and CLER, self-study, ACGME surveys)
- No change to work hour requirements
- Telemedicine can be utilized
- Some fellows will be re-deployed within department/base specialty; reassignment can occur to other rotations or forms of clinical work within the confines of the department.
- Understanding that fellows may have decreased procedural/clinical volumes - program director can assess for readiness for autonomous practice (i.e. graduation).



## 3. EXTRAORDINARY CIRCUMSTANCES

ONLY FOCUS ON PATIENT CARE (SUSPENSION OF CLINICAL CARE AND EDUCATION)

- Suspension of most specialty patient care (ie, pain management) and educational activities
- Program can declare "Pandemic Emergency Status."
- 30-day limit, can ask for extension
- Most fellows will be re-deployed to clinical duties with the area of expertise of their core specialty (ie, critical care, wards, ER).
- Since re-deployed fellows may not complete core curriculum in specialty, program director can assess for readiness for autonomous practice (ie, graduation)

## REQUIRED CONDITIONS WHICH MUST BE MAINTAINED DURING THE PANDEMIC



Work hour limits are unchanged.

Proper supervision must be maintained.



### Applies to all stages:



Adequate resources and training required:

- Must be trained in appropriate infection control.
- Must be supplied with infection protection supplies.

### Applies to stages 2-3

Re-deployed fellows must be:

- American Board of Medical Specialties or American Osteopathic Association board-eligible or certified in core specialty.
- Appointed to medical staff at sponsoring institution.
- Time spent in core specialty cannot exceed 20% of annual education time.



Check out our COVID-19 resources page at [www.asra.com/covid19](http://www.asra.com/covid19)





