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EDITORIAL

Mentorship in Pain Medicine Fellowship: Addressing the Gaps and Advocating for Change

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Introduction

Pain Medicine (PM) fellowship programs, accredited by the Accreditation Council for Graduate Medical Education (ACGME), are designed for physicians who have completed their residency training in anesthesia, physical medicine and rehabilitation (PM&R), neurology, emergency medicine, primary care, interventional radiology or psychiatry. These fellowship programs aim to provide a comprehensive curriculum integrating a multidisciplinary pain management approach. The scope of pain management has changed considerably over the past three decades, encompassing a range of treatment modalities, such as the incorporation of cutting-edge medications, psychological patient-interfacing tools, and percutaneous surgeries. However, our educational system has not adequately adjusted to these changes and has left our educators struggling with the obligation to expand the PM fellowship curriculum to meet the needs of our patients in the same one-year educational model that existed before these advances.[1] PM is the only fellowship accredited by ACGME that offers surgical training in a one-year program that enrolls trainees from varied non-surgical educational backgrounds, most without receiving the required pain education during residency.[2] The creating a stratified mentorship model during fellowship is necessary to improve the efficacy of training and the quality of our graduate education.

Most trainees entering PM fellowship programs expect to be trained in advanced interventional procedures such as neurostimulation, percutaneous surgeries for spinal pain and the use of ultrasound and peripheral nerve surgery, and radiofrequency ablation techniques. Therefore, most PM fellowships have morphed towards a more procedure-heavy training model.[3,4] The demand for competent interventional pain physicians in the workforce is necessary to meet the need of patients and to continue to develop the evidence for the therapies safety and efficacy.[1] The wider application of these procedures has made it more difficult for training programs to incorporate translation of this information in a clinically impactful way. As the clinical data evolves, there is a demand for both enhanced knowledge and practical hands-on skills, which makes the presence of closely working mentors during the fellowship training period critically important.

While the scope of pain management training continues to expand, notable challenges are inherent in the current one-year fellowship structure.[1,3] With the increasing complexity of pain management treatments and technologies, achieving proficiency in such a brief timeframe is becoming increasingly difficult. This is particularly evident with the growing number of advanced procedures available and the pressure to balance training in pharmacological and procedural treatments. In addition, none of the specialties that lead to Pain Medicine fellowships—such as Anesthesiology, Physiatry, Emergency Medicine, Neurology, Family Practice, Interventional Radiology and Psychiatry—include surgical training. Yet, fellows are expected to learn surgical techniques within a one-year Pain Medicine fellowship. Another challenge for Program Directors is creating a curriculum that provides educational equity among these groups despite having varied clinical foundations. This concern is

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increasingly relevant as the gap between basic and advanced skills widens, and educational programs struggle to effectively address the field's broad scope.

Multi-year training programs offer a unique advantage by fostering mentorship relationships between senior and junior trainees, which are mutually beneficial for both the learner and the instructor. Senior trainees, having recently navigated the challenges of their junior counterparts, are well-positioned to provide guidance that is both relatable and practical. This mentorship enhances the learning experience for juniors by offering peer-level support and encouragement and benefits the senior trainees by solidifying their knowledge and developing their teaching skills. Additionally, senior trainees can provide an intermediary for instructors, easing the teaching burden while providing continuity and a layered approach to education. Such a structure creates a collaborative environment that enhances the overall quality of training, blending peer-based and faculty-led learning for optimal outcomes.[5–7]

Current Mentorship Roles for Pain Fellows are Suboptimal

The current one-year model does not allow for a hierarchical mentoring system in which senior fellows can guide junior fellows. Ideally, more experienced fellows would mentor their less experienced counterparts, helping them develop teaching skills and leadership qualities and refining their procedural expertise. Mentorship in PM fellowships follows a linear structure: faculty mentor to the fellow and fellow to the resident. While faculty mentorship provides essential guidance in clinical skills, research, and overall career development, it often lacks the depth necessary for the fellow's long-term professional growth.[8] Given a one-year fellowship duration, fellows are expected to master a range of advanced procedures in a brief timeframe.[3] Although faculty are generally well-versed in pain management, the current mentorship model fails to provide sufficient opportunities for fellows to engage in meaningful, peer-to-peer mentorship.[8]

There is a current mentoring model within most PM fellowships, although it is fellow-to-resident focused and caters to rotators who often have simple, foundational knowledge of the field. While beneficial for residents, fellows repeat but do not expand on their knowledge base. This system not only diminishes the educational value of the fellowship for the fellow but also fails to offer the type of mentorship that could foster deeper learning and mastery of advanced PM.

Though pain programs with more than one fellow allow the learners to teach one another and thus potentially expand clinical information, they may not increase the complexity of knowledge sharing. The lack of senior fellow-to-junior fellow mentorship reduces the fellows' chances to teach complex concepts and pass on their insights to junior peers, mitigating educational and professional development.[5–7]

Educating Millennials is Crucial in Pain Medicine Education

Millennials will be the primary generational class in PM for the next two decades. They are widely recognized for their preference for peer-based learning, which is often more effective than traditional hierarchical methods.[9,10] Growing up in a digitally connected world, this generation thrives in collaborative environments where knowledge is shared horizontally rather than solely from top-down structures. Peer mentorship and learning from individuals with similar experiences allow millennials to engage more deeply, build confidence, and foster creativity in problem-solving. However, in PM fellowships, this generational learning preference presents a challenge. Due to the one-year structure of PM fellowships, no senior fellows are available to provide peer mentorship, leaving fellows to rely exclusively on faculty members, generally from older generations, for guidance. This absence of peer-to-peer mentorship may hinder the learning experience for millennial fellows, highlighting a critical gap in the current fellowship model.

Mentorship should play a pivotal role in the development of fellows in PM, particularly given the complexity of the field and the diversity of treatments involved. Pain fellowship training ideally includes a broad range of procedures, as well as pharmacological and psychosocial management. Medical education literature has suggested that when learners become teachers, information retention and understanding are optimized.[11,12] Therefore, if a fellow is provided with junior faculty to teach, education is improved. We submit that the education must be progressive for a long-term longitudinal learner, thus allowing fellows' mentorship to mature commensurate with clinical experience during their training. We also argue that fellow-to-resident only mentoring strategies stifle the advancement of education, as fellows become intellectually confined to teaching basic principles to residents. If PM education followed a multi-year trainee

platform, senior-level learners would be tasked with teaching juniors to navigate more complex clinical scenarios, imprinting optimal clinical skills, and fostering stronger collegial bonds post-training.[8]

Although the current one-year model of pain education offers fellows the opportunity to cross-pollinate clinical education through hands-on experience that is essential for mastering techniques such as nerve blocks and interventional procedures, it is best developed under the mentorship of senior learners. Regular feedback and practical training from senior to junior trainees enable the refinement of clinical skills, build confidence, and develop proficiency in advanced procedures that are difficult to teach in a traditional classroom setting. This personalized instruction ensures that fellows do not simply understand the theory but are also capable of applying their knowledge in real-world scenarios.[13,14]

Challenges of One-Year Fellowships and the Absence of Mentorship

The one-year structure of PM fellowships presents significant challenges that impact both fellows and mentors. One primary challenge is the vast knowledge and skills fellows must acquire in such a brief period. Pain pharmacology, interventional techniques, rehabilitation, and psychological therapies are all critical skills that must be mastered.[3]

The compressed timeline also limits the ability to form meaningful mentor-mentee relationships. Many faculty are experienced practitioners with busy schedules and often cannot provide the personalized attention required to help fellows fully master complex procedures or integrate advanced concepts into their practices. Many residencies and multi-year training programs involve structured senior to junior trainee mentoring.[5,13] Furthermore, without sufficient opportunity for in-depth guidance, faculty-trainee bonding suffers, and this may mitigate the benefits of post-graduate mentorship.[8] Rather than solely relying on faculty, incorporating mentorship throughout the fellowship would strengthen the system-based practice model. Fellows would benefit not only from the direct expertise of faculty but also from their peers' shared knowledge and experiences. This peer-to-peer learning system would allow for a deeper understanding of complex procedures and a more robust appreciation of the multidisciplinary nature of PM.

Thus, the absence of a multi-year approach to fellowship training significantly limits the depth of the learning experience and hinders the development of critical skills in PM.

Conclusion and Recommendations

A multi-year educational model should be considered to better support the growth and development of learners in PM. Extending the training duration would allow fellows to engage in more comprehensive training while fostering a culture of mentorship among peers. Under such a model, senior trainees could mentor junior trainees, providing guidance on both clinical and procedural matters. This peer-to-peer mentorship would help fellows consolidate their learning, refine their skills, and be better prepared for independent practice.

Additionally, a multi-year training model would provide more opportunities for fellows to develop their teaching skills. By being involved in the education of both residents and junior fellows, they could foster a more dynamic learning environment. This would also allow faculty to allocate more time for individualized mentorship, ensuring that fellows are fully prepared for the demands of PM practice.

The current mentorship model in one-year PM fellowships is insufficient to address the field's growing complexity. Mentorship is a vital component of medical training, and its absence in the fellowship stage leaves fellows without the critical guidance they require to succeed. Reconsidering the structure of fellowship programs is essential to improving the overall quality of training and fostering the next generation of PM leaders.

We propose key recommendations to address these challenges:

1. Extending the fellowship duration: By extending the fellowship period to two or more years, fellows would have more time to absorb complex concepts, refine their procedural skills, and develop stronger mentor-mentee relationships. The additional duration would allow for better integration of advanced techniques and the ability to revisit important topics with ongoing guidance.
2. Considering PM as a distinct residency program. By incorporating PM as a distinct residency specialty, trainees would be provided with more extensive and consistent exposure to the field's clinical and procedural aspects. This

would allow for a more thorough education and mentorship experience throughout their residency training, ensuring that postgraduates develop a solid foundation in knowledge and hands-on skills.

We acknowledge that proposing an extended training duration comes at a time when pain fellowship programs are already facing challenges with unfilled positions in the match.[15,16] However, this article aims to open the conversation among fellowship education leaders about addressing mentorship gaps in pain medicine training. While increasing training length might seem counterproductive in the short term, structured mentorship and longer training could ultimately enhance competency, improve career satisfaction, and strengthen the future of the field.

Although adding another year or more to PM fellowship programs would increase opportunities for skill development and effective mentorship, discussion with our current fellows suggests that extending the fellowship duration would be highly unpopular. Recent data demonstrates that PM fellowship applications are decreasing in number and that the quality of the applicant pool is saturated with learners from more varied specialties. This makes educating trainees in complex pain management more challenging than ever.[15]

Developing a multi-year PM fellowship program, or better yet, incorporating PM into residency, would enhance mentorship opportunities and improve the quality of education and professional growth for fellows. It is time to rethink how we prepare the next generation of PM specialists and prioritize mentorship as a key component of their training. By implementing these changes, we can better address the needs of current and future fellows, fostering the development of highly skilled and confident practitioners in this vital field.

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