

# Infectious Diseases/Critical Care Medicine: Time to Embrace a New Subspecialty of Infectious Disease

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Infectious diseases (ID) is a broad specialty with many areas of specialization. In the past, academic ID physicians became experts in areas based on their research focus, but in recent times, ID clinicians are increasingly subspecialized with areas of expertise in hospital epidemiology and antimicrobial stewardship, transplant ID, human immunodeficiency virus (HIV)/AIDS, hepatitis C, and global health, to name a few. As a field, we have embraced many of these pathways, often developing additional curricula for fellow trainees interested in pursuing further subspecialization, although there is no formal additional certification. Increasing enthusiasm is now developing for combined infectious diseases/critical care medicine (ID/CCM) training, which, unlike these other pathways, combines 2 fellowships with 2 separate board certifications and involvement of 2 or more academic divisions or departments. As a result, achieving specialized training in this pathway is logistically more challenging. Nevertheless, 1 year ago in this journal, Kadri et al [1] documented increasing numbers of trainees pursuing dual ID/CCM training despite challenges coordinating the 2 fellowships. Program directors around the country report increasing numbers of

fellowship applicants inquiring about the possibility of dual training. Fundamentally, it is not surprising that combined training would be appealing to those interested in ID. When trainees are asked why they developed an interest in ID, a common answer is that they have an interest in systemic illness rather than illness restricted to a single organ system, and an interest in complex patients. In addition, the acuteness of disease in hospitalized patients has increased dramatically and internal medicine residents may spend 3–6 months in critical care rotations throughout their 3 years of training, thus increasing their exposure to this field [2]. In this issue of *Clinical Infectious Diseases*, Kadri et al [3] report the results of a survey of dually trained ID/CCM physicians in the United States. Seventy-nine percent of all dually trained physicians responded to the survey. Respondents were roughly split between academic and community/private practice settings. Notably, the group showed a high degree of satisfaction with their career path (83% extremely or very satisfied), and 76% reported they would pursue dual training again. No respondents indicated they would pursue ID training alone instead. Forty-four percent of this group self-identified as an intensivist with ID expertise, with only 38% identifying equally as an ID physician and an intensivist. Despite this, many of the respondents held hospital roles associated with their ID expertise, including 44% who had a role in antimicrobial stewardship and 28% in hospital epidemiology/infection control. Another 38% were

involved in quality control/quality improvement. Despite this, CCM departments were perceived to be more receptive to dually trained physicians compared with ID divisions.

Dually trained ID/CCM specialists have much to contribute to both the ID and the CCM community. With the aging of America, many project a critical shortage of trained intensivists as the need for intensivist-trained physicians may exceed the supply [4]. In addition, increasing numbers of patients in intensive care units (ICUs) are immunocompromised. Furthermore, the landscape of critical care within hospitals is in flux. In recent years, there has been a movement away from specialty-specific/geographic ICUs managed individually by specialty as has been the traditional model, toward more standardized care under more central leadership. This has led to an increasing number of departments of CCM that oversee activities in multiple ICUs [5]. In this environment, there is a clear role for the dually trained ID/CCM physician. For example, antibiotics are among the most prescribed medications in ICU settings. Within hospitals, on average, ICUs often have higher levels of antimicrobial resistance than do other units in the hospital. Expertise at antimicrobial management and stewardship on site would be advantageous both for the ICU patients as well as to the hospital population as ICU patients are discharged to the general wards. Furthermore, dually trained ID/CCM physicians have the opportunity to more rapidly impact the care of the immunocompromised patient

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in the ICU with the potential for more unusual infections. Emerging infections and serious communicable diseases represent another important area of contribution [6]. The potential value of ID/CCM dually trained physicians should be obvious not only in the care of those infected with serious communicable diseases such as Ebola virus disease but in preparedness in ICUs as well. Clinical and translational sepsis research, currently predominantly the domain of non-ID physicians, would benefit from the perspective of the ID-trained practitioner. While the future intensivist workforce may benefit from the perspectives of those trained with a variety of backgrounds (renal medicine, emergency medicine, and others) in addition to those with more traditional initial training (pulmonary, anesthesia, and surgery), I would argue that the multisystem and diagnostics approach ingrained in the ID physician can bring unique strengths.

For our specialty, developing ID/CCM as an acknowledged and more accessible pathway brings obvious potential benefits. Many internal medicine residents interested in critical care see the only pathway to that career through pulmonary medicine, although (anecdotally) their interest not infrequently stems from an interest in systemic disease rather than lung disease. In addition, salaries for dually trained ID/CCM physicians are higher, driven by the higher-remuneration CCM specialty. The importance of salary, although not the sole driver of specialty choice, cannot be overlooked, as was shown in a recent study by Bonura et al in this journal [7]. In this study, pulmonary/CCM was the most usual internal medicine subspecialty chosen by those who considered but did not choose ID but did opt for additional fellowship training. ID/CCM as an available and advertised pathway would almost certainly increase recruitment into the specialty, and could over time have a substantial impact.

There are clear logistical challenges. Currently within internal medicine specialties, the majority of CCM graduate medical education (GME)-supported slots are under the discretion of pulmonary medicine for their trainees, the majority of whom pursue dual training. Divisions of ID often do not have

the resources to support a non-GME-funded fellow even if there is room under the CCM training cap. Partnering with departments of CCM in programs that have separate training pathways may offer further options given that these positions are often less linked to particular fellowship training programs. In addition, there are sites that offer 1-year (or longer) fellowships for CCM independently (eg, the National Institutes of Health group that authored this article), but facilitating all fellowship training at a single institution is much more accessible and achievable for the trainee.

Many have expressed concerns that embracing dual training will result only in reducing the number of ID consults and essentially “training the competition.” This concern has validity, particularly as a high percentage of current dually trained physicians do not identify equally with ID and CCM. Overall, however, as increasing numbers of trainees are pursuing dual training, maintaining the current status quo and not embracing this concept is more likely to lead to estrangement from ID of these dually trained physicians and ignores the recruitment crisis and areas where value can be added. Instead, I think it is important to be proactive as a specialty. We need to look closely at payment models, facilitate training pathways, and develop an academic home for this group within the Infectious Diseases Society of America (IDSA). At the same time, we must emphasize the importance of the ID portion of training. The authors suggest that the HIV clinician and the inpatient ID consultant have evolved into separate physician populations. I would argue strongly that while individual ID practitioners may chose areas of subspecialty, there must be a baseline level of common training across ID subspecialties that constitutes a critical knowledge base, regardless of the final area of ID subspecialization. Emphasizing the backbone of ID training within this new subspecialty can begin in very simple ways, including a change in nomenclature. Kadri et al have described dually trained physicians as CCM-ID. Just as our colleagues in pulmonary medicine are considered specialists in pulmonary/CCM, so must we lead with the ID specialty and develop ID/CCM.

Developing models for dual training and practice will require expertise from dually trained ID/CCM physicians, training program directors, and partners in CCM. The IDSA Training Program Directors Committee and the IDSA Task Force on Recruitment in ID both have recommended development of a working group to consider these issues further, which has been approved and will be constituted shortly. In sum, it is critical that we as a specialty take the lead in shaping this new specialty within ID and not sit by the sidelines and watch as this trend continues and these trainees become distanced from ID. We must embrace this pathway and work together with like-minded critical care colleagues to facilitate combined training, thus potentially attracting new trainees to our programs and ultimately improving the clinical care of our sickest patients.

#### Note

**Potential conflict of interest.** Author certifies no potential conflicts of interest. The author has submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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