

PRO/CON

ADVANTAGES OF A THREE-YEAR RESIDENCY

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The debate regarding the optimum length of an emergency medicine (EM) residency program has persisted, almost since the inception of the first programs. Unfortunately, there has been very little hard data on which to base a rational discussion.

In the early 1980s, the specialty was grappling with the decision to lengthen EM residency from 24 to 36 months. The American College of Emergency Physicians commissioned the "Length of Training Report," which assessed likely resident clinical experience for 283 important clinical entities during a 24 month residency. Based in part on this analysis, the minimum requirement for EM residency training was lengthened to 36 months under the tutelage of EM faculty. A later comparison of one program's resident clinical experience showed that, even with 36 months of training, the average resident would not meet these requirements for 50.5% of the diagnoses.

Furthermore, when resident experience was compared to the then-current Core Concept document that included 554 clinical diagnoses, it was determined that the average resident would not see any of 22.7% of these diagnoses in a three-year period. For another 37% of these diagnoses, there were not enough of them so that each resident would see even one, even if they were evenly distributed. All told, 60% of Core Content diagnoses could not possibly be taught through personal case-management experience for each resident.¹ Basically, common things present commonly, and rare diagnoses are truly rare.

There are possible remedies to this quandary: either lengthen the residency beyond 36 months, or teach patient care concepts for those times when the physician is confronted with a not-yet-seen clinical scenario. The first of these is impractical, as lengthening the residency would merely achieve incremental but certainly marginal return. There is no residency long enough to teach all EM management directly from personal experience. Therefore, educators have concentrated on teaching patient care concepts.

Comparing four-year to three-year training programs, there is no data to suggest that an extra year of EM training fosters better skills. One study that looked at procedure skills found no statistical difference. In a survey of program directors by Hayden and Panacek in 1999, the average graduating resident from all program types performed 403 (95% confidence interval (CI) = 342 to 465) procedures.² For PGY1-3 programs the average was 383 (CI = 310 to 455), PGY1-4 formats, 544 (CI = 447 to 642); and PGY2-4 residencies, 418 procedures (CI = 233 to 603), $p = 0.12$. This shows a proportional increase in procedures during an extra year of training, but no more than expected. Similarly, they found the resuscitation experience to be similar between program formats.

In summary, there is no hard data to suggest that procedural competency is enhanced by an extra year of residency training. The rare resuscitation procedures such as cricothyrotomy and emergency department (ED) thoracotomy might be performed a

few more times in a fourth year of training, but this is not sufficient justification for an additional year of training, in our view.

Most everyone in this debate would agree that the chief goal of EM residency is to create competent clinicians. One approach by the American College of Graduate Medical Education (ACGME) has been to establish Core Competencies to help assess whether graduates are competent to practice. The six competencies are: Patient Care, Professionalism, Communication and Interpersonal Skills, Medical Knowledge, Systems-Based Practice and Practice-Based Learning. Unfortunately, except for medical knowledge, there are no data upon which to evaluate competency. It has been shown that there is no difference on in-training exam scores between third- and fourth-year EM residents.³

Historically, one argument put forth to justify the fourth year of EM residency was the need for sheer “senior-ness” in order to do battle with surgical residents in municipal hospitals where conflict was common. The argument went that it was easier to battle a PGY5 surgical chief as a PGY4 EM resident than as a PGY3. Although this had merit during the early days of our specialty, these turf battles should have been resolved by now.

We believe that additional training beyond clinical EM has value for a varied and fulfilling career. This allows the trainee to develop a niche or subspecialty. There are currently 23 types of EM fellowships around the US, although most have few training spots. The essential question is whether to do further training as a fellow or as a fourth year resident. Some graduates elect to pursue other advanced degrees such as an MBA, MPH or MPA. Whether the resident trains for clinical emergency medicine in three or four years can affect their motivation to pursue further training. Although it might be expected that a shorter clinical training would more often leave time and energy for fellowship, the opposite appears to be true. In a survey of program directors currently under peer review (Lubavin and Langdorf, 2003), we found that 4.3% of PGY1-3 residents pursued fellowships, vs. 5.6% of 2-4 residents, and 8.6% of 1-4 residents. The

PGY1-4 format was associated with more common pursuit of fellowship vs. both 2-4 (OR = 1.59, CI: 1.01-2.51) and 1-3 programs (OR = 2.08, CI: 1.41-3.10). There was no difference in fellowship pursuit between PGY1-3 and 2-4 programs. This data would argue that a four-year residency in one institution fosters fellowship pursuit. The survey did not, however, control for other factors which might influence the decision to pursue fellowship, such as overall academic milieu, research activities, or funding.

There are two general training models for the fourth year of residency. Some university-based programs have a fourth-year dedicated as much to elective rotations, research, and international experience, as to clinical ED work. Although these are important pursuits, they are generally not part of the core training intended to produce a competent emergency practitioner. Most four-year programs do not have much more clinical EM training than a PGY1-3 format. This applies specifically to PGY2-4 programs, where the amount of time spent in the ED during the rotating internship is frequently only a month. Of the current four-year programs, half (16) are PGY1-4 format, while the other half are PGY2-4 format.⁴ Therefore, for at least half of the four-year training format programs, there is essentially no advantage with regard to ED clinical bedside training.

The second model is the municipal hospital one, where fourth-year residents are used as junior attendings under generally lax supervision, if any. This results from these hospitals' unwillingness to hire sufficient fully-trained EM specialists for financial reasons. We do not believe that senior residents doing essentially an attending's job should be paid at a PGY4 wage.

The educational debt of emergency medicine residents has been among the highest of any specialty (\$72,290 +/- 48,683 with a median of \$70,000 in 1996).⁵ The most recent survey by the American Medical Association (AMA) showed that the average 2002 medical school graduate debt rose more than 5% from 2001, to \$104,000 (AMA Website, 2003, accessed 12/4/03). Average starting salaries for board-prepared emergency physicians approach \$180,000. Compared to a PGY4 salary of \$42,000 at our

institution, this \$138,000 difference cannot be ignored. Many educational loans become due three years after graduation from medical school. An additional year at a resident's salary creates a wholly unnecessary financial burden and delays financial self-sufficiency.

Evidence of this financial burden of delayed income comes from a 1995 study of resident moonlighting by Langdorf and Ritter, which demonstrated that average hours per month moonlighting increased from 21 ± 15 (PGY1), to 25 ± 14 (PGY2), to 26 ± 15 (PGY3), to 29 ± 19 (PGY4) $p = 0.0001$. Although the increase in moonlighting in the fourth year over the third is not dramatic, the trend is obvious. This study, and a later one by Li in 2000, found statistical correlations between rising educational debt and hours spent moonlighting. In fact, the Li study documented that 78% of senior residents moonlight, for an average of 27 hours per month.⁶ Clearly, the number of hours spent moonlighting is increasing over time, likely related to educational debt and other lifestyle factors. If moonlighting is legal and rampant, one must call into question the validity of the argument that fourth-year EM trainees must work "supervised" at all times.

Perhaps the most compelling argument that three years of training is sufficient is the fact that the three-year graduate can become board certified in EM, and that society therefore accepts this as evidence of competency. There is no doubt that a physician after four years of practice will be better than after three years. The essential question is whether a clinician needs "supervision" after three years to improve. In most four-year training programs, the supervision of fourth-year residents is lax, either due to the need for independent practice to deal with large volumes of patients in municipal hospitals, or because the residents are thought to be largely "ready" to practice independently. This last rationale begs the question of why the fourth year resident is still in a training program.

On balance, given absent data showing a clear advantage in competency from a fourth year of

training, coupled with the irrefutable financial penalty, we must assert that three years of EM training is sufficient.

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