Patient Safety, Work Hour Regulations, and Resident Education

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In this issue of Pediatrics, Drolet and coauthors report the opinions of pediatric residency program directors about the 2011 resident work-hour restrictions 1 year after implementation: “Resident education, quality of life, continuity of patient care have worsened, with no improvements in numerous areas including fatigue, patient safety, and supervision.”¹ Do these opinions simply represent resistance to change? It is notable that the 2003 restrictions that caused an uproar when implemented are now considered “approved.” So should we take a “this, too, shall pass” attitude? Or do the opinions signal significant issues to be addressed?

The past few years have been tumultuous in pediatric education, as programs coped with the 2011 restrictions, new 2013 Accreditation Council for Graduate Medical Education (ACGME) Review Committee for Pediatrics requirements, and, in many programs, the implementation of electronic medical record systems. Also, in many programs, aspects of supervision have changed, including a decrease in the duration of “on service” periods and an increase in the number of hospitalists. It may be difficult to attribute outcomes to individual changes affecting education, but the importance of actually measuring outcomes is clear. The current report provokes at least 4 sets of questions:

1. What is the relationship between patient safety and education? Do efforts to improve the former necessarily damage the latter? What measures should be used to assess outcomes? The failure of the 2003 regulations to improve morbidity and mortality² likely disappointed some in the public sector. More sensitive measures specific to resident performance also revealed no change in the overall rate of medication errors and even a slight increase in the rate of ordering errors.³ A further restriction of intern work hours from 24-hour to 16-hour shifts in an adult ICU resulted in fewer errors by the interns, a demonstration that received considerable attention.⁴ Residents and faculty involved in that ICU during this pivotal study were less enthusiastic than the researchers, however.⁵ They pointed out that interns may have made fewer mistakes in part because senior residents made more of the decisions. The shift in decision-making from interns to more senior residents, which appears to have occurred after the 2011 regulations as well,¹⁶ may be less an unintended consequence of duty-hour restrictions than an intended one, at least for patient safety. On its face, that should be a good thing for patient safety. Might it also be a good thing for pediatric education, as a crescendo toward a lifetime of independent decision-making? “Progressive responsibility is one of the core tenets of American graduate medical education,”⁶ and it seems responsibility is more “progressive” since 2011 than previously.

Progressive responsibility is one of the core tenets of American graduate medical education,⁷ and it seems responsibility is more “progressive” since 2011 than previously.
2. What is the qualitative relationship between supervision and education? Balancing supervision and independence is a difficult challenge and certainly no easier when interaction between faculty and learners is limited, whether by reduced duration of faculty periods “on service” or reduced presence of learners. How much knowledge not only of the patients but also of the learners is necessary to help foster the education of the latter?

3. What is the relationship between education and quality of life? Have expectations changed from the traditional notion of 3 grueling years of imbalance followed by improved “balance”? Distinct from the other outcomes, perception may be reality when assessing quality of life. Efforts to enable interns to be better rested by reducing shift lengths were intended to improve quality of life but were viewed negatively, particularly by senior residents. As with other residency modifications, might resident perceptions change after one 3-year “life cycle,” with adjustment to a “new normal”?

4. How should quality of education be measured? Assessment of milestone achievement reported to the ACGME will permit identification of an expected trajectory of achievement. As decision-making shifts from PL-1s to more senior residents, both the trajectory and ultimate achievement are in question. We must remember that the survey in the current report was conducted when the 2011 interns had just completed their PL-1 year. Thus, the opinions are premature as to whether those interns would be as ready and able to function as senior residents (and decision-makers) as their predecessors.

Currently, a study similar in design to the adult ICU study is being conducted in 6 PICUs to determine the rate of errors committed by PL-2s and PL-3s (all of whom are products of the 2011 PL-1 work-hour restrictions) serving either 16- or 24-hour shifts (C. Landrigan, MD, MPH, personal communication, 2013). Although this study will not identify whether senior residents are less prepared than before 2011, it will establish where we are now and provide important data to guide where we go from here.

The 2011 requirements were based on good intentions and the best data available. In this era of evidence-based medicine, the impact of changes on outcomes such as patient safety and quality of education need to be assessed rigorously; clearly the most important conclusion of the Drolet et al article.

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