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abstract

FREE

In December 2008, the Institute of Medicine published new recommendations regarding duty hours and supervision of residents' training in the United States. These recommendations evoked immediate concerns from program directors and leadership in all surgical and medical disciplines, including pediatrics. To address these concerns, the Accreditation Council for Graduate Medical Education convened a Duty Hours Congress in Chicago, Illinois, on June 11 and 12, 2009. This report summarizes the opinions and testimony of the organizations (American Academy of Pediatrics, Association of Pediatric Program Directors, and Council of Pediatric Specialties) that were invited to represent pediatrics at the Duty Hours Congress. The American Academy of Pediatrics, the Association of Pediatric Program Directors, and the Council of Pediatric Specialties supported the basic principles of the Institute of Medicine report regarding patient safety, resident supervision, resident safety, and the importance of effective "hand-offs"; however, the organizations opposed additional reductions in resident duty hours given the potential unintended adverse effects on the competency of trainees, the costs of graduate medical education, and the future pediatric workforce. These organizations agreed that additional changes in graduate medical education must be data driven and consider residents within the broader system of health care. The costs and benefits must be carefully analyzed before implementing the Institute of Medicine recommendations. *Pediatrics* 2010;125:786–790

In 2003, the current resident duty hour requirements were implemented by the Accreditation Council of Graduate Medical Education (ACGME).¹ Well known to program directors and trainees are the major provisions of these requirements:

- an 80-hour work week averaged over 4 weeks;
- one day off in 7 without educational or clinical duties or call averaged over 4 weeks;
- in-house call frequency of no more than every third night averaged over 4 weeks;
- a maximum duty period of 24 hours with an additional 6 hours for didactic education and transfer of patients;
- ten hours off between shifts for adequate rest; and
- internal moonlighting counted toward the 80-hour weekly limit.

These requirements apply equally to all trainees, whether residents or fellows, and were not empirically determined. Rather, they were the product of a Bell Commission report and New York State laws regarding resident work hours and supervision in response to public, legal,

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KEY WORDS

Institute of Medicine, resident duty hours, patient safety, resident/fellow education, residency review committee, ACGME

ABBREVIATIONS

ACGME—Accreditation Council of Graduate Medical Education
IOM—Institute of Medicine
AAP—American Academy of Pediatrics
APPD—Association of Pediatric Program Directors
CoPS—Council of Pediatric Specialties
SOMSRFT—Section on Medical Students, Residents, and Fellow Trainees

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and regulatory questions about the potential role of graduate medical education in patient safety.²

In 2007, the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce requested that Department of Health and Human Services sponsor an Institute of Medicine (IOM) study of the relationship between resident duty hours and patient safety.³ The basic premise was that a relationship may exist between long duty hours and preventable medical errors. The IOM was provided 2 tasks: (1) review and synthesize evidence regarding optimal resident work schedules and (2) develop strategies for implementing optimal resident work schedules.

After 12 months of work that consisted of a thorough review of the available data regarding resident duty hours, fatigue and supervision, and testimony from numerous experts involved in US graduate medical education, the IOM published its report. The major recommendations of this report included the following:

- thirty-hour maximum shift, consisting of admitting patients for 16 hours plus a 5-hour rest period between 10 PM and 8 AM and the remaining hours for education and transition of patient care;
- ten hours off after day shift, 12 hours off after night shift, and 14 hours off after extended duty period of 30 hours;
- four-night maximum of night shifts; 48 hours off after 3 or 4 nights of consecutive duty;
- five days off per month; and
- internal and external moonlighting counted toward the 80-hour weekly limit.

No changes were recommended regarding the existing rule of an 80-hour work week, averaged over 4 weeks.

The publication of the IOM report stimulated intense reactions from many individuals and organizations involved in graduate medical education. Among the greatest concerns to most were the relative absence of objective data regarding the effects, both positive and negative, of the current duty hour requirements and the potential educational and economic impacts of the proposed changes.⁴⁻⁸ In addition, many leaders raised questions on the potential negative impact on some aspects of patient safety, clinical care, and educational outcomes without proper funding, resources, or support for the entire medical system. To provide the forum for discussion, the ACGME sponsored a Duty Hours Congress on June 11 and 12, 2009.

Representatives of the American Academy of Pediatrics (AAP), the Association of Pediatric Program Directors (APPD), and the Council of Pediatric Subspecialties (CoPS) were invited to submit position papers and testify at the Duty Hours Congress. The AAP represents practicing physicians and advocates for the health of children through education and clinical care. The APPD represents the program directors and educators who are involved in pediatric residency education, whereas CoPS, a relatively new organization, represents subspecialists program directors, and educators who are involved in subspecialty fellow education. The position papers prepared by the APPD and CoPS originated from conference calls that were held in January, February, and April 2009 and involved dozens of members. The AAP position paper was prepared by compiling the opinions of the members and chairs of 18 AAP sections and standing committees, including the Section on Medical Students, Residents, and Fellowship Trainees (SOMSRT). This article summarizes

the testimony and opinions of representatives of these organizations.

DISCUSSION

Each pediatric organization supported the basic principles of patient safety, resident education and well-being, and the support of resources for graduate medical education outlined by the IOM. The following material summarizes the responses of representatives of the AAP, the APPD, and the CoPS to specific elements of the IOM report.

Maximum Shift Length

The IOM recommends a 30-hour day, admitting patients for up to 16 hours, plus 5-hour protected sleep period between 10 PM and 8 AM with the remaining hours for transition and educational activities. The APPD opposes the recommendation and favors 24 hours of patient care and educational time plus 3 hours of transition time (similar to the current New York State regulations). Changing to a shift schedule would double the number of handovers that typically occur with 24-hour call schedules, increasing the likelihood for patient care errors. Residents may lose the opportunity to follow the evolution of disease processes and learn from their continuity of care. Data on sleep deprivation in other fields (eg, aviation, driving) may not apply directly to pediatrics or medical training. The cited literature supporting limited shift length is based primarily on work that focuses on a single task activity throughout each duty shift. Residency is a dynamic mix of clinical, reflective, and educational activities. The CoPS opposes the recommendation as costly to implement and a hardship to small programs. Fellows must progressively function more like faculty physicians, especially in their senior years of training. More data are needed to understand the optimal length of continuous duty hours to achieve the latter goal, especially in

critical care specialties. The AAP opposes the recommendation for 5-hour sleep period because it requires more handovers of care. Additional study is needed to explore the feasibility of no new patients after 16 hours.

Maximum In-house Call

The IOM recommends a maximum of every third night in-house call without averaging. The APPD supports the concept of a maximum of every third night call but supports averaging to allow some flexibility in scheduling to promote resident quality of life, vacations, weekend trades, etc. Given the structure of most fellow educational programs, the CoPS expresses no opinion other than supporting flexibility. The AAP opposes the recommendation and supports averaging to enhance resident well-being and flexibility in call scheduling, especially during the holidays.

Maximum Frequency of In-hospital Night Shifts

The IOM recommends a maximum of 4 consecutive nights with 48 hours off after 3 or 4 nights of consecutive duty. The APPD opposes this recommendation and favors 5-night maximum with 48 hours off after 5 nights of consecutive duty. Conforming to a 3- or 4-day maximum is complex and disruptive to most programs with regard to the standard work week and clinical schedule. A schedule of 5 consecutive nights also allows establishment of a reverse circadian rhythm. It was noted that there were limited data in medical fields to support the IOM recommendation. Data from industry may provide insights that are relevant to shift frequency and length and risk for accidents.⁹ The CoPS opposes this recommendation; fellowship programs, especially small programs, have insufficient fellows or faculty to implement this recommendation. The AAP opposes this recommendation and fa-

vors 5-night maximum with 48 hours off after 5 nights of consecutive duty.

Mandatory Time off Duty

Currently, residents and fellows must have 4 days off per month with 1 day off per week averaged over 4 weeks. The IOM recommends 5 days off per month, 1 day off per week with no averaging, and one 48-hour period off per month. The APPD agrees with this recommendation, except that averaging should be allowed over 6 months, mirroring what often occurs in posttraining environments. The CoPS agrees with the IOM recommendation. The AAP agrees with the IOM recommendation but recommends averaging to maintain programmatic flexibility.

Moonlighting

The current regulations count internal but not external moonlighting against the 80-hour weekly limit. The IOM recommends that both internal and external moonlighting count against the 80-hour limit. The APPD, the CoPS, and the AAP all agree that external as well as internal moonlighting should count toward the 80-hour weekly limit. The APPD recommends that all moonlighting activities of residents be under the direct supervision of the program directors. CoPS encourages the IOM and the ACGME to recognize that educational debt is a major burden for graduating medical students and a factor that influences career choice.¹⁰ Educational loan repayment programs should be available to all fellows. Any reduction in resident or fellow duty hours must be linked to mechanisms to reduce the burden of educational debt.

Additional Points

The following are additional points that were addressed in the position statements of the pediatric organizations.

Workforce Shortage in Pediatric Care

Of additional concern to the AAP, the APPD, and the CoPS is the crisis in the pediatric subspecialty workforce. Given the workforce shortage in pediatric subspecialties, it will be extremely difficult for pediatric subspecialists to assume additional clinical responsibilities should fellow or resident duty hours be reduced further. The workforce is aging as well. The average age of pediatric subspecialists ranges from 48.4 years (pediatric emergency medicine) to 55.7 years (pediatric nephrology).¹¹ The costs of hiring additional subspecialists for training environments are prohibitive, and the supplemental workforce, whether aging subspecialists or midlevel providers, is not available to provide adequate access to care in US children's hospitals. In addition, the general pediatric and community workforce could be negatively affected in the future if potential unintended consequences lead to closure of smaller, primary care—focused programs; redistribution of providers to inpatient academic centers; or a reduction in the hours that graduates choose to work in their future practices.

ACGME's "One Size Fits All" Approach to Graduate Medical Education

The current approach to regulation that holds fellowship programs, different levels of trainees (postgraduate year 1 to postgraduate year 6), and different fields, such as pediatric critical care or rheumatology, to the same regulations does not fit the current educational needs of medical training. The representatives of the AAP, the APPD, and the CoPS encourage the ACGME to reconsider this approach and to provide common principles but offer a progression to independence and flexibility

in the degree of faculty oversight. Fellows, especially in their final years of training, function more like junior faculty. They require autonomy and sufficient freedom to engage in scholarly activities, especially if they anticipate careers in academic environments. Individualization that is based on the attainment of competency milestones and educational outcomes, not proscriptive hours, should guide training along the continuum of medical education and practice.

Funding of Residency and Fellowship Training

Funding of pediatric resident and fellow training remains extremely challenging, despite the support of the Children's Hospital Graduate Medical Education legislation. The substantially lower rate for fellow training (25% to 50% of the direct costs compared with full funding of pediatric residents) is a disincentive for health systems to train fellows. Decisions to train more individuals to meet the clinical needs created by the proposed reduced duty hours must be coupled with new and improved mechanisms for funding of residencies and fellowships. Without such strategies, training programs may close, further augmenting the physician workforce crisis.

Need for Data

Finally, changes in educational and duty hour requirements must be data-driven. The AAP, the APPD, and the CoPS encourage the ACGME to propose studies that can be initiated now and continue through the implementation period of any changes in the structure and regulation of graduate medical education.

Pediatric Resident and Fellow Perspective

Representatives of the AAP SOMSRFT believe that the primary goals of residency are twofold: (1) safe and effective patient care and (2) exemplary resident education. Although duty hours are an important component in achieving these goals, they are not the goal in themselves. Thus, changes to duty hours must be discussed in the context of achieving the primary goals.

The 2003 ACGME duty hours standards created a professionalism dilemma for residents. Do residents violate duty hours to continue to participate in the care of patients to the point of optimal transfer of care, which, in turn, enhances the learning experience, or do residents forgo these to adhere to duty hour regulations? In a February 2009 Open Letter to the Graduate Medical Education Community, Dr Thomas Nasca, ACGME chief executive officer, described to the Residency Review Committees a conversation with resident representatives. All 30 residents reported that violations of the current shift length standard of 24 plus 6 hours are systematically underrepresented. Routine violations of current duty hour standards were also described during resident testimony to the ACGME task force. The desire to care for their patients was the chief reason that residents violated duty hours. The AAP SOMSRFT hopes that future duty hour standards will not force residents to choose between the competing objectives of providing high-quality patient care and honesty in reporting duty hours. To this end, programs and hospitals should use support staff (eg, intravenous teams, unit clerks, phlebotomists) to allow trainees to focus on care delivery and education rather than on service needs.

The complexity of hospitalized children and the time required to care for these children continues to increase. With compression of the increased workload into fewer hours, residents must eliminate components of their workday to adhere to duty hour standards. The AAP SOMSRFT is concerned that residents will eliminate the educational components that lead to reflection and in-depth understanding of patients. We hope that the next iteration of the ACGME duty hours standards will look beyond the quantity of duty hours and address the quality of duty hours. Appropriate workloads, optimal cognitive experiences, and opportunities for reflective practice are vitally important to safe and effective environments for both residents and patients.

CONCLUSIONS

The representatives of the AAP, the APPD, and the CoPS agree that areas for improvement include the monitoring of existing duty hour regulations, including moonlighting, the supervision of trainees, and enhancing the verbal and written communication needed for effective patient handovers; however, we oppose many of the specific elements of the IOM report on resident duty hours. We suggest that legislators, educational leaders, and organizations focus on patient safety, supervision, clinical outcomes, and educational outcomes rather than narrowly on the number of hours a resident physician works in training. The ACGME, through the intense scrutiny of resident and fellow training stimulated by the IOM report, has a unique opportunity to review and improve graduate medical education in the United States. Our pediatric organizations are committed to this process through collaboration, communication, and research.

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California Health Maintenance Organizations (HMO's) Establish Time Standards: For the first time, physicians in HMO's in California are being required to see a patient within ten days if they are generalists, and two weeks if specialists. According to an article in The New York Times (Archibold RC, January 19, 2010), physicians must find ways (with their staff or partners) to return a call within 30 minutes and be available 24 hours a day. Urgent needs must be accommodated within 48 hours. While this may certainly reduce the frequent long waits for patients to be seen in these California HMO's, the risk is that premium costs may go up as practices hire more physicians or incur other staff costs to meet the time requirements. The situation could be even worse if more patients are given access on a national basis to HMO health insurance options. As to what happens if a patient reports an HMO for not complying with time standards, there would apparently be a possible audit and fines that could ensue. Whether other states will follow with similar results awaits the lessons to be learned from implementation of this new California state law.

Noted by JFL, MD

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