



Statement

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Testimony on Resident Work Hours

Presented to the

**Committee on Optimizing GME Trainee (Resident) Schedules
To Improve Patient Safety
Institute of Medicine**

By

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The Association of American Medical Colleges (AAMC) appreciates the opportunity to address this committee. My name is Debra Weinstein. I am Vice President for Graduate Medical Education for the Partners Health Care system, which is located in Boston and includes Massachusetts General Hospital and Brigham and Women's Hospital. My responsibility for graduate medical education (GME) involves oversight of 98 programs accredited by the Accreditation Council for graduate medical education (ACGME) and another 124 clinical fellowships (not ACGME accredited), totaling more than 2000 postgraduate trainees. I have had an institutional leadership role in GME for 14 years and previously served as chair of the AAMC's Group on Resident Affairs (the national organization for academic medicine leaders in GME that advances the quality of GME leadership in medical schools and hospitals and fosters institutional accountability for GME. In the past I was Director of the Internal Medicine residency program at the Massachusetts General Hospital. I am an internist/gastroenterologist, and a faculty member at Harvard Medical School. In the interest of full disclosure, I recently have become a member of the ACGME's Board of Directors. Today I speak on behalf of the AAMC.

The Association, which represents all 129 accredited U.S. and 17 accredited Canadian medical schools and nearly 400 teaching hospitals and health systems, has a long history of advocating for limits on resident duty hours. A 1988 document approved by the AAMC and disseminated to its members recommended that "Every teaching hospital adopt general guidelines for residents' working hours according to specialty, intensity of patient care responsibilities, level of experience and educational requirements. In order that decisions about the care of patients are not impaired by fatigue, residents' hours actually worked should not exceed 80 hours per week when averaged over four weeks" [Resident Supervision and Hours: Recommendations of the Association of American Medical Colleges. March 1988.] A more recent AAMC policy document stated that "In no case should any resident be scheduled to be on duty more than 80 hours in any week". The document also recognized the need for flexibility: "Limiting required duty hours does not imply that residents must cease providing essential patient care services at arbitrary cut-off times. Priority must always be given to patient safety and well-being and to avoiding transferring patient care responsibilities to others at inappropriate times in the continuum of care (e.g. during an operative procedure, in the midst of a rapidly evolving clinical event)." [AAMC, "Policy Guidance on Graduate Medical Education: Assuring Quality Patient Care and Quality Education, 2001"]

As a corporate member of the ACGME, the AAMC participated in the deliberations that led to the common duty hours requirements implemented in 2003. The AAMC sponsored conferences in 2002 and 2003 to help its member hospitals and medical schools understand and implement the requirements (Dr. David Dinges of this committee acquainted participants at both conferences with the scientific evidence on sleep, fatigue and performance). The Association also sponsored a "listserv" dedicated to this topic to help members share ideas and learn from each others' experiences.

In all of these activities and policy pronouncements over the past 20 years, the AAMC has given attention to resident duty hours not as an issue that stands alone, but as part of a matrix of tightly interrelated issues that influence the educational value of training programs. These interdependent issues include the quality of the educational program, the supervision of residents' patient care activities, institutional support and oversight of GME, the quality of

patient care, and patient care staffing and processes. We believe that resident schedules and duty hours can be addressed meaningfully only by considering all of these issues.

As the preparation of doctors for participation in the future health care of America's population is a central concern of the AAMC, we wish to highlight the impact of duty hour limits on resident education. In the long term, a decline in the quality of physician education may represent one of the greatest threats to the delivery of exemplary patient care.

Supervised patient care experience always has been the principal approach for teaching medical school graduates to become competent independent practitioners. Medical education relies on both didactic and practical experience. Even as we enter an era where educational technology such as simulation and individualized computer-based self-study plays a greater role, experiential learning through graded responsibility for patients is and will remain the foundation of GME. The current training paradigm affords trainees essential opportunities to:

- Observe patients over time;
- Develop and demonstrate a sense of responsibility for patients;
- Participate in rounds and conferences;
- Achieve sufficient volume of experience with common and less common clinical situations while under faculty supervision; and
- Acclimate to the demands that many will face in their future practice.

Limiting resident hours impacts each of these areas.

In my own institutions, the Massachusetts General Hospital (MGH) and Brigham and Women's Hospital (BWH), we employed a number of strategies to accommodate the 2003 duty hours requirements, including:

- Schedule changes, including expanded use of night floats;
- Elimination of less essential rotations at affiliated institutions;
- Elimination of some elective rotations;
- Deploying various technical strategies to improve efficiency;
- Expanding the number of residents and fellows;
- Recruitment of additional nurse practitioners, physician assistants and attending physicians; and
- Transfer of specific resident/fellow responsibilities with less educational value to others, to try and maintain the educational content within fewer hours.

There was considerable variation among specialties in terms of the specific strategies employed. Some of the changes considered necessary were disappointing to both program directors and trainees. For example, a number of elective rotations were eliminated, limiting trainees' opportunities to explore areas of specific career interest and/or to address any individual areas of weak preparation or performance.

We conducted a pre/post survey study of trainees in accredited GME programs at MGH and BWH in order to assess the educational impact of duty hours limits implemented in July, 2003

[Acad Med. 2006; 81(12): 1059-1068]. Trainees' perceptions regarding adverse events were also evaluated and reported separately [Arch Int Med. 2008; 168(5): 493-500].

The study was designed to control for temporal trends by comparing outcomes in academic year 2003 vs. 2004 among trainees in programs experiencing a decrease in hours from one year to the next, with academic year 2003 vs. 2004 outcomes among trainees in programs that did not experience a reduction in hours. A 60 percent response rate was achieved.

Some of the results were reassuring; for instance, there was no significant decrease in the volume of key clinical experiences or in trainees' perceptions of their "preparedness". However, the results also indicated that trainees spent an average of six (6) fewer hours each week in direct patient care. This decrease was not associated with any reported decrease in non-educational tasks or in the number of admissions or procedures (sometimes included in certification requirements). This raises concern that other key learning experiences (e.g. having adequate time to examine patients, meeting with families to better communicate information) are being compromised—but this study could not elucidate that further.

Of particular note, the data show that the perceived negative effect of fatigue on resident learning, satisfaction and well being was reduced; however, there was a decline in overall satisfaction with education. This suggests that fatigue may not be the dominant issue in determining the educational experience.

It also is important to acknowledge that non-statistically significant declines in the perceived quality of didactic sessions and in the availability of faculty for supervision and for teaching noted in this study may reflect only the "tip of the iceberg". These results represent the impact during the first year of implementation, before the full scope of current duty hours adaptations were implemented. Also, these results reflect a system where substantial resources were invested in protecting against predicted negative effects of resident duty hour limits (e.g. by hiring additional caregivers and deploying technology to improve the efficiency/quality of care). Institutions with limited financial resources face even more difficult decisions and potential disruptions of their GME programs and patient care activities.

These considerations highlight certain cautions that should be considered when interpreting reports about educational outcomes (as with the literature assessing the impact of duty hours on patient safety), specifically:

- Most published studies were done soon after implementation of the 2003 requirements, a time when many programs had not yet achieved substantial compliance or were experimenting with various approaches;
- Outcomes are likely to be specific to setting, so generalizing from studies based in a single specialty or setting (ICU, clinic, OR, etc.) may not be appropriate; and
- There are multiple intervening variables that make it very difficult or impossible to draw clear cause-and-effect conclusions.

So far, research on the educational impact of duty hour restrictions is limited. In the published literature the perspective varies from 30 feet—where studies focus on a single program in a single institution—to 30,000 feet, where the findings are global (e.g., Dr. Volpp's study of

inpatient mortality) but the mechanisms and processes are unknown. A significant proportion of the literature involves subjective comments and predictions, with considerable attention focused on the widespread concern about eroding professionalism by encouraging a “shift mentality”. Early studies of the educational impact tend to focus on describing changes in GME program activities that have been undertaken to comply with duty hours limits; some studies outline proximate “outcomes” such as procedural volume, time spent with patients, sense of preparedness, etc. Measuring more significant endpoints, such as knowledge, skill and overall competence, is challenging and may require longitudinal studies of several years duration. Thus, we may not have meaningful answers about the educational impact of duty hours limits for several years.

Because education and care delivery are inextricably linked in residency training, the AAMC also wishes to echo the concern, raised in several prior presentations, that unintended consequences arising out of increasingly stringent duty hour limits could adversely affect both education and patient care. GME, of necessity, requires that the resident be both a student and a member of the patient care team. Accommodating major changes in trainee work hours requires extensive planning, phased implementation, and in most circumstances significant expense. Rules and requirements that seek to address the problem of potential fatigue, in isolation from the full context of the resident’s activity (including their participation inpatient care), inadvertently may undermine patient safety in a number of ways (Table 1). Teaching hospitals with limited resources are most vulnerable. Of special concern are safety net hospitals which have the major responsibility of providing care for the poor. In these hospitals, where residents play a particularly essential role in the health care team, more stringent limits on resident hours could have an even greater impact for both patient care and education.

Table 1. Potential Unintended Consequences of Implementing More Stringent Duty Hours Limits

- Where reduced hours necessitate that fewer residents are on duty at any time, residents would be less available to their patients and families;
- Greater use of “cross-coverage” could shift increased responsibility for data interpretation and decision making to a physician less familiar with the patient;
- Compressing the same volume of resident activity into a shorter period would increase the risk of overlooking details and reduce the opportunity to consider and consult about clinical decisions;
- More hand-offs of responsibility between physicians would increase susceptibility to error; and
- Other members of the health care team could become overburdened and subject to increased fatigue.

It is worth noting that, even with the large investment in additional caregivers made by MGH and BWH, a significant proportion of residents bemoan certain aspects of the current duty hours limits. They regret the loss of certain critical educational opportunities, such as the chance to participate in a rarely performed surgical procedure. They feel that continuity of care should sometimes have preference over scheduling rules in order to allow a trainee who is the most familiar with a particular patient to remain involved through a critical period of care. Trainees also feel a professional responsibility to stay beyond their shift at times of peak clinical volume

or acuity, since it is simply not feasible to consistently staff at the levels needed for the predictably unpredictable peaks. When trainees are unable to do so, they feel it jeopardizes the importance of team-based care, which many emphasize. Finally, residents object vehemently to the time spent in tracking and reporting their hours, even with a streamlined electronic system available.

Taking all of these considerations into account, the AAMC respectfully recommends the following:

- 1. In the interests of medical education, resident well-being, and patient care quality, duty hours of residents should continue to be limited.**
- 2. Refinements to the specific duty hours limits currently in effect should be made with due deliberation and attention to potential unintended consequences. Change should be informed by research on sleep physiology and—importantly—by additional research on the impact of various duty hours interventions on educational outcomes, trainee well-being, and the quality/safety of patient care.**
- 3. New research should address a number of unanswered questions, such as:**
 - What are appropriate specialty- and/or site-specific schedules to support the goals of educational quality, enhancing patient safety, and resident well-being?
 - What is the best configuration of health care teams in various settings, and how are clinical responsibilities appropriately assigned?
 - What pace of change is appropriate, given the challenges of avoiding potential negative impact of duty hours limits?
 - What resources are necessary in order to avoid harm to patients and enhance education while fully implementing the current duty hours limits (or additional limits that might be considered)?
 - How should compliance best be monitored and enforced?
 - Can ways be found to quickly identify a threshold level of fatigue-related impairment akin to a breathalyzer test for alcohol?
- 4. Refinements to the duty hours limits need to take into account the aggregate funding levels for GME and constraints in funding and regulatory mechanisms, especially with respect to Medicare, that may make it difficult to respond to these changes.**
- 5. The ACGME should be the organization that considers modifications to the current rules, and enforces them.**
 - Parallel sets of regulations from other agencies or from state/federal legislatures would lead to additional bureaucracy and unnecessary confusion, thereby undermining improvement efforts.
 - The ACGME considers resident schedules and duty hours in the context of the whole educational program and its institutional environment, as is appropriate.

- The ACGME employs multiple strategies for monitoring compliance and has effective mechanisms for enforcement. Unlike other entities, the ACGME is able to assess compliance with their regulations—and to some extent the impact—in *the context of both education and health care delivery*.
- The ACGME is committed to continual reevaluation of requirements, and is able to refine these as part of the periodic updating of program standards. Currently the ACGME is supporting innovative pilot programs to inform this process.
- Deliberations of the ACGME involve all the key constituencies of medical education and medical practice, and its staff has a nuanced understanding of the complexities of education in the clinical setting.

The AAMC commends this committee for addressing such a difficult and important issue. As your work has undoubtedly underscored, health care is delivered in a highly complex system where any significant perturbation will have some ripple effects and potentially unforeseen consequences.

The AAMC will continue to be engaged in this issue and will continue to support accreditation requirements which recognize that residents learn by engaging in direct patient care, that patients benefit from continuity of care, and that duty hour limits should balance educational quality, patient safety, and resident well being.

I am happy to respond to questions.