Commentary: Institute of Medicine Committee Report on Resident Duty Hours: A View From a Trench

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Abstract

Background In late 2008, the Institute of Medicine (IOM) published a report recommending more restrictive limits on resident work hours to promote patient safety. Reaction from the graduate medical education community has focused on concerns about a lack of evidence supporting the IOM's recommendations. We highlight 3 concerns with the report: 1) a disproportionate attention to resident fatigue when changes in other areas may have a larger impact on patient safety. Data supporting a causal link between resident fatigue and medical errors that harm patients are not robust. Two areas where data support a stronger impact on patient safety include resident supervision and transitions of care; 2) a "one size fits all" model when specialty-specific recommendations may be more appropriate. For example, 16 hours on task is not at all similar for residents in different specialties (ie, surgery and primary care); and 3) the absence of a process to evaluate the impact of current or potential duty hour requirements on outcomes. Because these potential impacts have not been sufficiently researched, it is premature to support additional changes at this time.

Recommendations To move forward in a comprehensive manner, we recommend the following: 1) support more research to evaluate the effects of duty hours in conjunction with other interrelated factors on patient safety, 2) encourage individual Accreditation Council for Graduate Medical Education (ACGME) Review committees to develop specialty specific duty hour limitations, and 3) develop partnerships between the IOM, ACGME, and the institutions directly involved with medical education to study how to maximize patient safety while maintaining quality educational outcomes.

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Background

The Institute of Medicine (IOM) Committee on Optimizing Graduate Medical Trainee (Resident) Hours and Work Schedules to Improve Patient Safety[1] has recently published over 300 pages of recommendations for enhancing resident sleep and supervision and patient safety. Our article examines the implications of these recommendations for the frontlines of graduate medical education. In 2003, motivated by concerns about patient safety, the Accreditation Council for Graduate Medical Education (ACGME) introduced regulations to limit resident work hours. This was followed by concerns and debate among program directors and the medical community about the impact of these changes on resident education and the quality of future graduates. Since the adoption of these requirements, the landscape of resident education has changed. Significant restructuring of resident schedules has been instituted to preserve quality residency training while adhering to the ACGME requirements. Objective data[2–4] regarding the impact of duty hour restrictions on patient safety, physician fatigue, and resident education, while present, are limited. Thus, a better understanding of the impact of the 2003 iterations of work hour limitations should be a prerequisite to changing them again.

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Concerns With IOM Committee Report

In this paper, we highlight 3 concerns with the IOM committee report:

1. A disproportionate attention to resident fatigue. The task of the committee was to focus on improving patient safety by minimizing resident fatigue. The report does not adequately prioritize changes in other areas (transitions of care, resident supervision) that would more directly affect patient safety.
2. A "one size fits all" model. The report does not adequately take into account the inherent differences in education and patient care among specialties. Each specialty is in the best position to identify resident schedules that simultaneously enhance

patient safety, resident education, and resident well-being.

3. The absence of a process to evaluate the impact of changes. The report does not adequately prioritize educational outcomes and how they are impacted by proposed changes.

Discussion of the Concerns

A Disproportionate Focus on Resident Fatigue

Improving patient safety is a goal common to everyone involved in health care. Indeed, the introduction of limitations on resident work hours in 2003 was motivated by concerns of patient safety; however, data supporting a causal link between resident fatigue and medical errors that harm patients are not robust. According to the IOM report,[1] "…the research data available did not make it possible for the committee to assess the current level of all risks to patients or the degree to which fatigued residents contribute to patient harm." The report identified only one randomized controlled trial[3] comparing variable work shifts that reported no statistically significant difference in patient safety as measured by preventable adverse events. Data demonstrating that resident fatigue and medical errors have decreased since the introduction of the ACGME duty hour requirements have not been forthcoming and are needed prior to introducing further restriction.

The type of analysis we suggest is undoubtedly being completed independently at many teaching hospitals. At Oregon Health & Science University (OHSU), our risk-management group reviews all incident reports and has found no root cause analyses linking resident fatigue to medical errors. While some may conclude that these limited data show resident fatigue does not cause medical errors, the more likely answer is that root cause analysis of medical errors is a complex process, and the relative contribution of fatigue to an error is difficult to measure. We suggest the IOM or ACGME find ways to synthesize information from individual academic institutions at the national level and encourage more research before making additional recommendations for changes to duty hours.

In addition, a reduction in work hours will not necessarily increase resident sleep time and therefore potentially will not decrease resident fatigue. In fact, research presented in the IOM report[1] indicates only a moderate correlation between residents' work hours and their sleep hours; the report states "although reduction of resident duty hours alone is one way to achieve more sleep, it is an indirect and inefficient way to increase sleep given the moderate correlation between resident work hours and sleep time." Factors other than the number of hours slept contribute to resident fatigue. Such factors may include the high stress levels inherent in their jobs, their lifestyle, and recreation habits outside of work, among others. These factors also need to be researched and addressed.

Two areas where data[5] do support a robust impact on patient safety are resident supervision and transitions of care. Residents at OHSU work annually with hospital administration to identify quality improvement projects to improve patient care. The most recent quality improvement project focused on increasing resident reporting of medical errors and standardization of the sign-out process. During 9 months of this project, resident reports as a percentage of the total increased from 1% to 8%. At the program level, the OHSU internal medicine residency delivers an annual workshop dedicated to transitions of care. Participants' evaluative remarks laud the effectiveness of the workshop in providing coverage of critical yet often neglected topics (sign-out and cross-cover skills). We recommend that leaders in graduate medical education gather information on other existing efforts to improve patient safety, assess outcomes, and ensure adequate resident and faculty education in areas proven to impact patient safety.

A "One Size Fits All" Model

The IOM proposal advocates a "one size fits all" approach to residency duty hours. However, consideration of specialty and scope of practice is essential to designing resident schedules that balance the highest quality education with patient safety. For example, 16 hours on task is not at all similar for residents in different specialties (eg, surgery and primary care). Similarly, the feasibility of a mandatory "nap" for residents must be addressed by individual specialties. Therefore, we recommend that ACGME review committees actively engage in discussions to determine shift length, time between shifts, and other relevant topics. Academic specialty leaders must be relied on to recognize when and how residents become fatigued and to then determine the best schedule to minimize fatigue and enhance education.

Absence of a Process to Evaluate the Impact of Changes

We applaud the spirit of the IOM report; however, individuals involved in graduate medical education are best positioned to ensure that the goals of quality resident training and promotion of resident well-being are met. A consideration of the primary mission of graduate medical education—namely, education—must be integral to any proposed changes. We do not believe that the IOM recommendations adequately consider the educational impacts of proposed changes. There is an emphasis in the IOM discussion on "shifts" and "work hours" without a parallel consideration of what is being learned during these hours. Because the educational impacts of the 2003 duty hour limitations have not been sufficiently researched, it is premature to support additional changes at this time.

We are concerned that a reduction in work hours may compress the amount of time available for education. If

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education suffers as a result of additional duty hour restrictions, an unintended consequence will be that residents may be inadequately prepared to enter unsupervised practice. Subsequently, if length of training is increased to address this concern, many potential physicians may be discouraged from entering the medical profession due to the significant additional investment of time and money. With careful and thorough consideration, we believe graduate medical education can balance physician education with the economic realities of medical education, while promoting the best interest of our patients.

Our Recommendations

The overall goals of the IOM report are laudable. As physicians, we place the highest priority on patient safety. Yet we also place a high priority on data-driven recommendations that carefully consider potential consequences. As graduate medical educators, we strive to innovatively reform residency education so physicians of tomorrow are trained with expertise, professionalism, and a sense of work-life balance and well-being. The ACGME supports this concept and is currently in the process of a comprehensive data review. Deriving from the discussion above, our recommendations as we move beyond the IOM report are as follows:

1. Support more research to ascertain the effects of duty hours in conjunction with other interrelated factors on patient safety.
2. Encourage the ACGME to have the review committees consider developing specialty-specific duty hour limitations.
3. Develop partnerships between the IOM, the ACGME, and the institutions directly involved with medical education to study how to maximize patient safety while maintaining quality educational outcomes.

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