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ORIGINAL ARTICLES

Implementation of duty hour standards in otolaryngology–head and neck surgery residency training

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OBJECTIVE: **To determine what impact, if any, of the recently implemented duty hour standards have had on otolaryngology–head and neck surgery residency programs from the perspective of program directors. We hypothesized that the implementation of resident duty hour limitations have caused changes in otolaryngology training programs in the United States.**

STUDY DESIGN AND SETTING: **Information was collected via survey in a prospective, blinded fashion from program directors of otolaryngology–head and neck residency training programs in the United States.**

RESULTS: **Overall, limitation of resident duty hours is not an improvement in otolaryngology–head and neck residency training according to 77% of the respondents. The limitations on duty hours have caused changes in the resident work schedules in 71% of the programs responding. Approximately half of the residents have a favorable impression of the work hour changes. Thirty-two percent of the respondents indicate that changes to otolaryngology support staff were required, and of those many hired physician assistants. Eighty-four percent of the respondents did not believe that the limitations on resident duty hours improved patient care, and 81% believed that it has negatively impacted resident training experience. Forty-five percent of the program directors felt that otolaryngology–head and neck faculty were forced to increase their work loads to accommodate the decrease in the time that residents were allowed to be involved in clinical activities. Fifty-four percent of the programs changed from in-hospital to home call to accommodate the duty hour restrictions.**

CONCLUSIONS: **According to the majority of otolaryngology–head and neck surgery program directors who responded to the survey, the limitations on resident duty hours imposed by the ACGME are not an improvement in residency training, do not improve patient care, and have decreased the training experience of residents.**

SIGNIFICANCE: **This study demonstrates that multiple changes have been made to otolaryngology–head and neck surgery training programs because of work hour limitations set forth by the ACGME.** (Otolaryngol Head Neck Surg 2005;132:819-22.)

In September 1999, the Institute of Medicine reported that 44,000 to 98,000 people die in hospitals each year as a result of preventable medical errors. They reported that creating a safe environment for the patients would reduce such errors and that as part of a safe environment, the working conditions of doctors and nurses needed to be monitored.[1] In July 2003, the Accreditation Council for Graduate Medical Education (ACGME) created resident duty hour limitations to decrease the number of hours residents worked. This in turn was hoped to decrease the number of medical errors. There was a general feeling that overworked residents would make more mistakes if they were tired.

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As of July 2003, the ACGME has demanded adherence to a set of duty hour limitations for interns and residents in the United States. These limitations apply to all house officers equally. Because these limitations were imposed to improve patient care and resident education, we wanted to conduct a study to determine whether these goals were being met and what effects they would have on otolaryngology–head and neck programs in the United States.

MATERIALS AND METHODS

Information was collected via survey in a prospective, blinded fashion from program directors of otolaryngology–head and neck programs in the United States.

One hundred four e-mail surveys were sent to residency program directors. The survey contained a link to a Web site at Louisiana State University Health Sciences Center–Shreveport that contained the survey questions (Fig 1). Surveys were anonymously submitted online and subsequently reviewed. The results are based on the opinions and perceptions of residency program directors.

RESULTS

Of the 104 surveys that were sent to otolaryngology-head and neck surgery residency training programs, 31 were returned (Table 1).

1. The limitations on duty hours have caused changes in the resident work schedules in 71% of the programs responding.
2. Fifty-two percent of program directors felt that residents did not have a favorable impression of the duty hour limitations.
3. Thirty-two percent of the respondents indicated that changes to Otolaryngology support staff were required, and of those programs, 40% hired physician assistants.
4. (A) 84% of the respondents did not believe that the limitations on resident duty hours improved patient care, and (B) 81% believed that it has negatively impacted resident training experience.
5. Forty-five percent of the program directors felt that the Otolaryngology–Head and Neck Surgery faculty increased their workload to accommodate the decrease in time that residents were allowed to be involved in patient care activities.
6. Seventy-seven percent of the respondents indicated that overall, the standards for duty hours are not an improvement in otolaryngology–head and neck residency training.
7. Fifty-two percent of the programs responding reported that residents have home call.
8. Fifty-four percent of the programs changed from in-hospital to home call to accommodate the duty hour limitations.

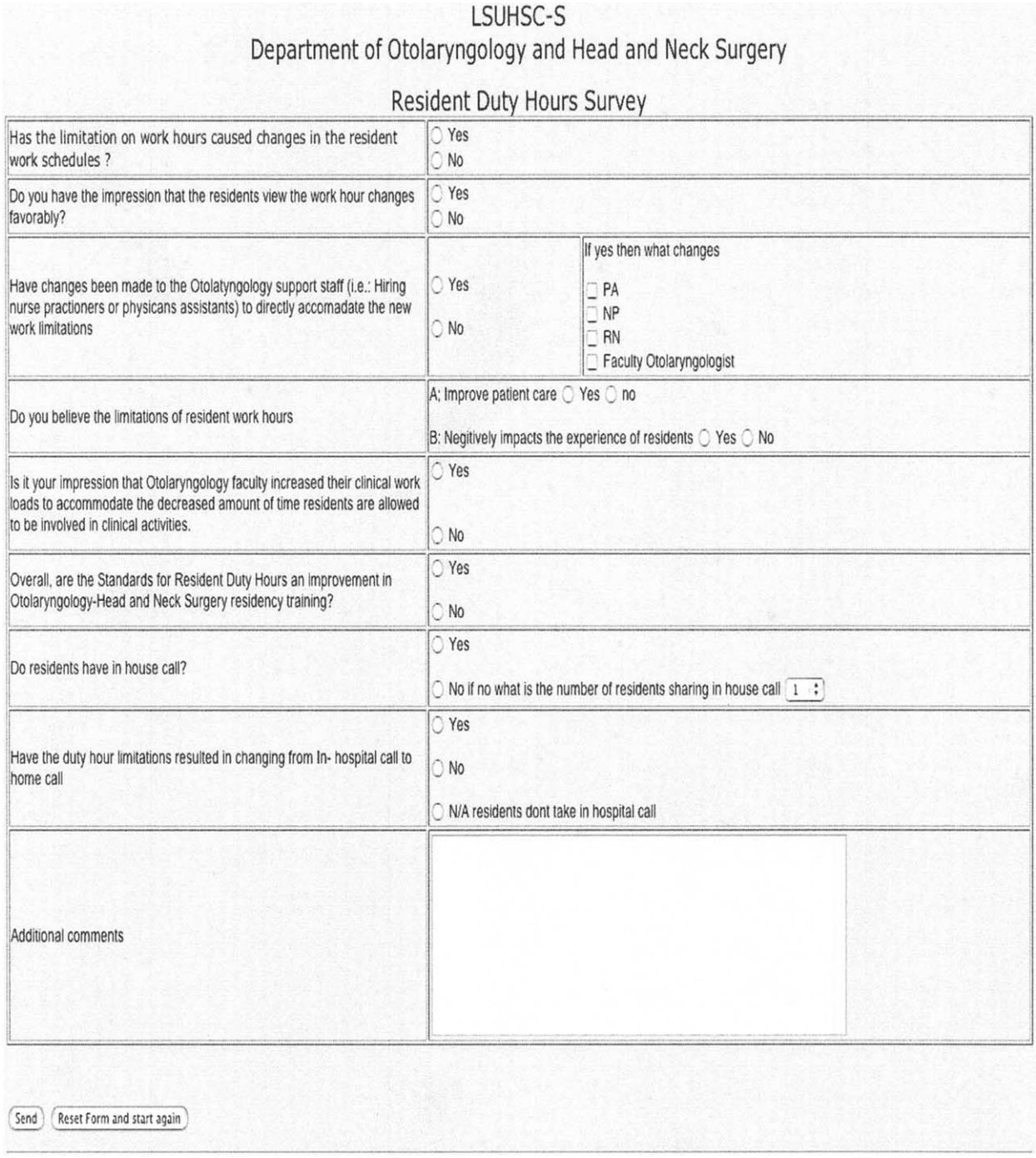
DISCUSSION

The duty hour standards required by the Accreditation Council for Graduate Medical Education were designed to improve the residency training experience and thus ultimately improve patient care. The limitations are as follows:

- "Residents are limited to a maximum of 80 duty hours per week, including in-house call, averaged over four weeks. In certain cases, starting in July 2004, residency programs will be allowed to increase duty hours by 10 percent if doing so is necessary for optimal resident education and the program receives approval from the appropriate RRC.
- Residents must be given one day out of seven free from all clinical and educational responsibilities, averaged over four weeks.
- Residents cannot be scheduled for in-house call more than once every three nights, averaged over four weeks.
- Duty periods cannot last for more than 24 hours, although residents may remain on duty for six additional hours to transfer patients, maintain continuity of care or participate in educational activities.
- Residents should be given at least 10 hours for rest and personal activities between daily duty periods and after in-house call.
- In-house moonlighting counts toward the weekly limit. In addition, program directors must ensure that external and internal moonlighting does not interfere with the resident's achievement of the program's educational goals and objectives."[2]

In a study reported by Strunk et al[5] in 1991, analysis of otolaryngology residents revealed 70% of residents indicated that an 80-hour workweek, including being on call every 3rd night with no more than 24 hours of continuous work without sleep, approximated a reasonable maximum work schedule. Residents working the longest hours expressed concern about providing substandard care and developing negative attitudes toward patients.[3] This is similar to the ACGME resident duty hour limitations implemented in July 2003.

Our survey shows that most otolaryngology–head and neck surgery residency program directors who responded feel that duty hour limitations negatively influence resident education. Of concern is the potential for decreased experience during residency training. One respondent clearly states that at their program, "Residents on all night for emergencies have to go home at noon. They miss out on surgery and teaching conferences." Just over half of the respondents felt that the residents themselves were not happy with the duty hour limitations either. Perception of residents regarding quality of life and basic education for surgical residents was found to be improved, but residents



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Resident Duty Hours Survey

Has the limitation on work hours caused changes in the resident work schedules ?	○ Yes ○ No	
Do you have the impression that the residents view the work hour changes favorably?	○ Yes ○ No	
Have changes been made to the Otolatyngology support staff (i.e.: Hiring nurse practioners or physicans assistants) to directly accomadate the new work limitations	○ Yes ○ No	If yes then what changes ☐ PA ☐ NP ☐ RN ☐ Faculty Otolaryngologist
Do you believe the limitations of resident work hours	A; Improve patient care ○ Yes ○ no B: Negitively impacts the experience of residents ○ Yes ○ No	
Is it your impression that Otolaryngology faculty increased their clinical work loads to accommodate the decreased amount of time residents are allowed to be involved in clinical activities.	○ Yes ○ No	
Overall, are the Standards for Resident Duty Hours an improvement in Otolaryngology-Head and Neck Surgery residency training?	○ Yes ○ No	
Do residents have in house call?	○ Yes ○ No if no what is the number of residents sharing in house call 1	
Have the duty hour limitations resulted in changing from In- hospital call to home call	○ Yes ○ No ○ N/A residents dont take in hospital call	
Additional comments		

Send Reset Form and start again

Fig 1. Survey.

are concerned because these benefits come at the expense of patient care, especially continuity of care.[4] On the other hand, obstetrics and gynecology residents, long known to work long hours with little rest, supported duty hours limits, and only a minority expressed concern that such duty hour limitations might limit their experience.[5]

Other residency directors are concerned that residents would no longer have the same dedication to the profession and would view the profession more as a job for which they work only a certain number of hours and leave without worry of the consequences. One respondent put it aptly, "The biggest 'loss' in all this is the change in mentality from that of learning a profession with high standards and an obligation to that profession and the people it serves, to a clock-in and clock-out mentality. Do we really want the same degree of patient orientation that

Table 1. Survey results (n = 31)

Question number	Yes (%)	No (%)
1	71	29
2	48	52
3	68	32
4a	10	90
4b	81	19
5	45	55
6	23	77
7	52	48
8	54	46

we see in emergency medicine today? In the long run, all of medicine will suffer." Whether this is will ring true remains to be seen. It will remain in the hands of the individual residents to make their own decisions regarding this issue.

Because the ACGME resident duty hour limitations apply across all specialties regardless of types and size, some otolaryngology–head and neck surgery residency programs are now compelled to spend more money on physician extenders to cover the loss of man-hours. Smaller programs would now be short handed even if their call nights were typically quiet, when compared with larger programs that potentially have more flexibility in scheduling.

One respondent exclaims, "More flexibility in post call clinical activity is warranted. The duty hour requirements are most pertinent to emergency department or intensive care rotations and least relevant to residents who are likely to spend most of the time sleeping on night call". This implies that perhaps the limitations might not be necessarily applicable to every residency program. Some programs have hired physician extenders to comply with the ACGME limitations and yet still adequately address clinical volume. This is done without any increased financial support to the programs from the ACGME and in many cases programs home institution. Programs hired physician assistants, but some hired registered nurses, nurse practioners, or even another staff otolaryngologist to cover the workload. About 45% of the respondents felt that the existing staff otolaryngologists needed to increase their own workloads to accommodate the loss of resident manpower.

Another concern that arose is how best to accurately record and monitor resident duty hours. One respondent added that it is his impression that "monitoring duty hour limit compliance remains a problem and residents will lie when reporting hours." Obviously, this needs to be addressed, and at the same time ensure that an atmosphere and mentality of "clock punching" is not created.

One solution that is offered by the ACGME and that has been resorted to by some of the programs includes creating an at-home call system. This would theoretically allow a higher percentage of the 80-hour per week limit to be used for performing clinical and educational activities because it is presumed that the residents would not be spending all night in the hospital. One respondent agrees, "Generally, our residents were working less than 80 hours a week not counting in house call. Once we changed from in-hospital call to home-call the 80 hour work week was not an issue." Almost half of the programs who responded to the survey have chosen this solution.

Another solution created by some of the larger programs involves the creation of a night shift call system (NSCS). NSCSs are one possible way of reducing work hours without lengthening residencies according to family medicine literature.[6]

CONCLUSION

According to the majority of Otolaryngology Head and Neck Surgery program directors who responded to the survey, the limitations on resident duty hour hours imposed by the ACGME are not an improvement in residency training, do not improve patient care, and have decreased the training experience of residents. Although these changes are relatively new (outside of New York) and therefore will require time for their ramifications to be borne out, the initial impression of those whose responsibility it is to ensure the excellence of future colleagues in our profession is not favorable. Interestingly, because truly objective standardized outcomes data regarding graduates of residency training programs before the implementation of the AGCME duty hour limitations is not available, and currently "outcomes" and the measurement of outcomes continue to be defined, a true comparison of graduates before and after the implementation of resident duty hour limitations may not be possible.

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