Effects of Resident Duty-Hours Restrictions on Surgical and Nonsurgical Teaching Faculty

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Objective: To evaluate the effects of resident duty-hours restrictions on teaching faculty, patient care, and the institutional climate at a single center.

Methods: An anonymous questionnaire was provided to all teaching faculty (N = 606) at a single institution from March through October 2006. The questionnaire focused on perceptions of job satisfaction, workload changes, and effects on patient care and the institution.

Results: Overall response rate was 41% (n = 248). More than half of faculty (n = 140 [56%]) feel they have less time for teaching, 33% report less time for extracurricular activities, and 42% report increased work hours. Forty-three percent of respondents (n = 106) were less satisfied with their jobs after implementation of resident duty-hours restrictions, while only 2% (n = 5) were more satisfied. Of the respondent faculty, surgeons were more likely than nonsurgeons to report increased work hours (54% vs 34%; P = .002), decreased time for teaching (66% vs 51%; P = .03), lower job satisfaction (55% vs 35%; P = .003), and negative effects on their personal relationships outside of work (24% vs 12%; P = .01). Although most responses suggest that the restrictions on resident duty hours have not adversely affected patient care or the institutional climate, 33% of respondents (n = 82) felt that patient care was worse.

Conclusions: Surgeons reported a particularly negative effect from resident duty-hours reform, especially within the areas of job satisfaction, time for teaching, and workload. Efforts to counteract these effects will be critical to maintain and recruit teaching faculty.

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tual number of faculty work hours or cases before and after the implementation of the work-hours reform.16,17,21,23 Interestingly, in one study, almost half of surgeons believed that they were working more even though their actual work hours did not change, and this perception was especially prominent among general surgeons.16 These perceptions of increased workload and diminished job satisfaction may be related to changes in the composition of faculty workload following work-hours reforms (eg, less time in administrative tasks, meetings, educational activities, and research, and increased patient care duties).16,37

Although most studies have focused on perceptions of the effects of work-hours reform on residents, we were primarily interested in faculty perceptions of the effects on their own restedness, job satisfaction, lifestyle, and on the institutional effects in various surgical and nonsurgical departments. Given the larger relative decrease in surgical resident hours, we hypothesized that surgical faculty were more likely to be affected by the changes than nonsurgical faculty. We therefore designed a study to survey the effects of the 80-hour workweek restrictions on surgical and nonsurgical faculty, specifically addressing faculty perceptions on work hours, job satisfaction, time for teaching, patient care, and the institutional climate.

### METHODS

We created a survey based on several previously administered resident surveys and modified our questions to address teaching staff’s perceptions of their own lives.6,3 We conducted the overall survey was composed of 25 questions grouped into 9 sections. Responses were graded on a Likert scale. Those involving time were graded on an increase/decrease scale, and responses on overall perceptions were graded on a worse/better scale.

The following 7 question categories addressed staff perceptions of the effect of work-hour limitations on their own lives: work hours, time for teaching, time for patient care, pursuit of extracurricular activities, job satisfaction, restedness, and quality of personal relationships outside the hospital. The same questions were asked of the staff with regard to their impressions of the effect on their residents’ lives. The following items were used to assess staff perceptions of resident education: resident time for teaching and learning, resident knowledge, technical skill, and preparedness for board and in-training examinations. Staff were asked to rate effects of the duty-hours restrictions on resident continuity of care, quality of care, and medical errors, as well as the collegiality among various staff members and departments. An area for comments was provided at the end of the survey.

After obtaining institutional review board approval, announcements were made at departmental meetings to inform faculty of the study and to encourage them to participate by completing either an online or paper survey. Attending staff from all departments with a residency training program (representing 7 surgical and 12 nonsurgical programs) were solicited for participation. Written informed consent was waived by our institutional review board, as participation was voluntary and anonymous. Surveys were subsequently distributed both in e-mailed Internet links (http://www.zoomerang.com) and in paper versions delivered to faculty mailboxes. Faculty members were informed that a summary of the results would be provided to the graduate medical education committee and to the participating departments without compromising anonymity.

The results of the Internet-based survey and paper-format surveys were compiled and analyzed using a statistical software package (Stata, version 9.1; Stata Corp, College Station, Texas). Results were compared based on respondents’ age (by decade), sex, and departmental affiliation (eg, ear, nose, and throat surgery; neurosurgery; obstetrics/gynecology; ophthalmology; orthopedic surgery; general surgery; and urology were deemed surgical specialties; all other departments were deemed nonsurgical). χ² Analysis was used to compare categorical responses to each question. t Tests were used to compare continuous variables (eg, age) between groups. A P value <.05 was considered statistically significant. Comments provided by survey respondents were qualitatively reviewed by the research team and grouped by recurrent themes.

### RESULTS

The overall response rate was 41% (n = 248). The demographics of the respondents are presented in Table 1 and a summary of all responses is presented in Table 2. More than half of faculty members (n = 140 [56%]) felt they had less time for teaching, 33% reported less time for extracurricular activities, and 42% reported increased work hours. Forty-three percent of respondents (n = 106) felt less satisfied with their jobs after implementation of resident duty-hours restrictions, while only 2% (n = 5) felt more satisfied.

Surgeons and nonsurgeons had similar perceptions of the effects on patient care (subdivided data not shown). Most respondents did not perceive an effect on their own time for patient care, the quality of patient care, or the rate of medical errors, though most did report a decline in continuity of care and 1 of 3 respondents felt that patient care was worse (Table 2). Approximately 1 of 5 respondents felt that collegiality among faculty and residents and between departments have been negatively affected. Neither age nor sex had any effect on faculty perceptions in any category.

There are some notable differences in the perceptions of surgical vs nonsurgical faculty (Figure). Significantly more surgeons than nonsurgeons reported an increase in their own work hours (34% vs 34%; P = 0.02), lower job satisfaction (35% vs 35%; P = 0.03), decreased sleep/restedness (33% vs 19%; P = 0.01), decreased time for teaching (66% vs 51%; P = 0.03), and negative effects on their personal relationships outside of work (24% vs 12%; P = 0.01) since implementation of resident work hours restrictions. Although not statistically significant, surgeons also reported decreased time for extracurricular activities (40% vs 30%; P = 0.10)

Perceptions of the effects on residents are also significantly different between surgeons and nonsurgeons at our...
institution. Significantly more surgeons perceived a decrease in resident work hours (83% vs 64%; \(P<.001\)), with 28% of surgeons reporting resident hours to be greatly decreased (compared with only 14% of nonsurgeons). Furthermore, more surgeons than nonsurgeons perceived an increase in their residents’ extracurricular activities (62% vs 29%; \(P<.001\)), sleep/restedness (56% vs 41%; \(P=.03\)), and overall improvement in residents’ job satisfaction (42% vs 25%; \(P=.004\)). Along with this effect on resident hours and well-being, more surgeons than nonsurgeons reported negative effects on education, including a decrease in residents’ time for learning (68% vs 54%; \(P=.04\)), teaching (73% vs 55%; \(P=.006\)), and patient care (83% vs 60%; \(P<.001\)), and commitment (35% vs 37%; \(P<.005\)). The majority of both surgeons and nonsurgeons, respectively, do not feel that resident knowledge (76% and 79%), technical skills (68% and 77%), or preparedness for board and in-service examinations (82% and 91%) have been adversely affected.

Twenty-seven percent of respondents added commentary to their survey responses. Surgical commentary focused on shift of work and resident commitment, though similar concerns were expressed by nonsurgical respondents. Examples of specific responses are detailed in Table 3. Although the majority of comments were negative, there were a few positive comments. A minority of respondents (eg, respondents in the radiation oncology, dermatology, and anesthesiology departments) commented that they did not feel that their department was affected by the work-hours changes. For specialties in which residents predominantly work shifts (eg, emergency medicine and anesthesiology), the commentary about work hours was mostly focused on meeting the guidelines for time off between shifts, rather than the 80-hour restriction.

Our study raises concerns about the negative effects of the resident work-hours restrictions on faculty, particularly surgical educators. Overall, faculty responses to the resident work-hours restrictions were negative throughout all de-

### Table 2. Summary of Survey Responses

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Greatly Decreased</th>
<th>Somewhat Decreased</th>
<th>No Change/No Opinion</th>
<th>Somewhat Increased</th>
<th>Greatly Increased</th>
<th>Greatly Increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>How has the enforcement of the 80-h workweek affected your own. . . Work hours?</td>
<td></td>
<td>0</td>
<td>2</td>
<td>56</td>
<td>38</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Time for teaching?</td>
<td></td>
<td>17</td>
<td>39</td>
<td>43</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Time for patient care?</td>
<td></td>
<td>3</td>
<td>16</td>
<td>66</td>
<td>13</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Pursuit of extracurricular activities?</td>
<td></td>
<td>5</td>
<td>28</td>
<td>64</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>How has the enforcement of the 80-h workweek affected your own. . . Job satisfaction?</td>
<td></td>
<td>4</td>
<td>2</td>
<td>55</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sleep/restedness?</td>
<td></td>
<td>3</td>
<td>21</td>
<td>57</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Quality of your personal relationships (outside of the hospital)?</td>
<td></td>
<td>1</td>
<td>15</td>
<td>83</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>How has the enforcement of the 80-h workweek affected your residents’. . . Work hours?</td>
<td></td>
<td>19</td>
<td>52</td>
<td>26</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Time for learning?</td>
<td></td>
<td>17</td>
<td>42</td>
<td>33</td>
<td>7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Time of teaching?</td>
<td></td>
<td>19</td>
<td>43</td>
<td>34</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Time for patient care?</td>
<td></td>
<td>15</td>
<td>53</td>
<td>29</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pursuit of extracurricular activities?</td>
<td></td>
<td>1</td>
<td>3</td>
<td>55</td>
<td>32</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>How has the enforcement of the 80-h workweek affected your patients’. . . Quality of care?</td>
<td></td>
<td>2</td>
<td>31</td>
<td>64</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Continuity of care?</td>
<td></td>
<td>20</td>
<td>38</td>
<td>40</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Medical errors?</td>
<td></td>
<td>3</td>
<td>14</td>
<td>80</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>How has the enforcement of the 80-h workweek affected the institutional climate. . . Collegiality among faculty members in your department?</td>
<td></td>
<td>1</td>
<td>18</td>
<td>78</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Collegiality among faculty members and residents in your department?</td>
<td></td>
<td>2</td>
<td>22</td>
<td>73</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Collegiality between departments?</td>
<td></td>
<td>2</td>
<td>11</td>
<td>86</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[a\] Results are percentage of respondents (n = 248).
Faculty felt they were teaching less, were working more, had less time for activities and relationships outside of work, and were overall less satisfied with their jobs.

The perceived effects on residents at our institution were positive overall and in line with the goals of improved restfulness and quality of life. Contrary to the study by Hutter et al,17 in which faculty perceived residents as less knowledgeable and prepared after work-hours reforms, our faculty expressed concern over negative effects on education, but did not perceive a decrement in resident knowledge, skills, or preparedness for examinations. Based on the individual department results and commentaries (not all shown), it is clear that the educational and logistic challenges of the 80-hour restrictions are different for different specialties. For those specialties primarily staffed in shifts (eg, emergency medicine and anesthesiology), concerns are not in overall hours, but in time between shifts; whereas for surgical specialties, educational concerns focus on adequate resident exposure and involvement in patient care and operative volume. Comments from respondents in a wide range of specialties support previously reported concerns about changes in resident attitudes, specifically less responsibility and commitment to patients.12,17,22 It will be important to monitor the long-term effects of these changes in medical practice.

One respondent commented, “It is not the hours, but the content of the hours that is most important.” This is true for both residents and faculty. As a consequence of limiting resident hours, our faculty now report decreased restfulness, increased work hours, and lower job satisfaction. Higher career satisfaction among faculty has been associated with strong interpersonal interactions and educational experiences—areas that are being eroded by increased clinical demands and decreased time for faculty-resident interaction.23 In an era in which it is becoming increasingly difficult to recruit and maintain teaching faculty, it is critical that efforts are made to offset the effects of the work-hours restrictions on teaching faculty by strengthening faculty-resident interactions and rapport. Furthermore, faculty job satisfaction, lifestyle, and men-
torship have been shown to significantly impact medical student career choice.12 It is therefore critical that we maintain enthusiastic faculty who can serve as positive role models and mentors for our residents and medical students.

Our study has several limitations. We are most limited by respondent bias, in overall response and the differential response by surgical affiliation. Increased response rates among surgeons may reflect greater dissatisfaction or increased recognition of the research team by our surgical colleagues (vs nonsurgical colleagues). We did not see any effects of age or sex on faculty perceptions of the changes as predicted by prior studies. However, these reforms are relatively recent.10,11,14 As younger physicians begin to practice, particularly in academics, it will be interesting to see if perceptions and attitudes are ultimately different between the old and new generation of trainees. Similarly, sex did not have any effect on faculty perceptions, though women residents have previously been more favorable toward the changes than men.12 Again, it may be too early to assess these effects in academic medicine. In addition, self-selection into academic vs community practice may affect expectations and perceptions. Our study is also limited by its focus on subjective perceptions rather than objective markers of change (eg, validated scales of motivation and job satisfaction, and time cards).

We believe that the perception is as important as the actual objective measures. It is impossible to know what degree of the dissatisfaction expressed by our respondents is a response to change and if perceptions of the work-hours restrictions will improve as staff get used to the new way of doing things.

In summary, the effects of the 80-hour workweek reforms have negatively impacted teaching faculty, particularly surgeons, and are resulting in a change in the job duties and satisfaction of faculty. Although the long-term effects of these changes are unclear, it is critical that interventions improve faculty job satisfaction, quality of life, educational activities. Role modeling will be important, particularly in surgery, for future faculty recruitment.

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Author Contributions: Dr Scherer takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Vanderveen and Scherer. Acquisition of data: Vanderveen, Chen, and Scherer. Analysis and interpretation of data: Vanderveen and Scherer. Drafting of the manuscript: Vanderveen and Scherer. Critical revision of the manuscript for important intellectual content: Vanderveen, Chen, and Scherer. Statistical analysis: Vanderveen. Administrative, technical, and material support: Vanderveen, Chen, and Scherer. Study supervision: Scherer.

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Additional Contributions: James Holcroft, MD, provided suggestions and a review of the manuscript.
REFERENCES


DISCUSSION

David Hoyt, MD, San Diego, California: Dr Hart, members, and guests. Very nice presentation, Dr Vanderveen. Very provocative results. Works-hour restrictions, though well intended for resident health, have had important unintended consequences. Patient care has suffered, our fundamental commitment to continuity of care is fragmented, and education time is less predictable.

The opportunities for academic surgeons have become supplanted by more clinical work, less time for research, less quality teaching time, and an ambiguity with the types of residents we are producing. Is this a good thing? Somehow, we need to call the question over this evolution of our profession.

The present study is a well-designed single institution study with a 68% surgical response, validating these concerns. It is unpopular today to question the 80-hour rule. We cannot however go soft on our commitment to our patients and our principles of excellence. Thank you for this important study and presentation. I have several questions:

1. Have you shared these data with the chair, the hospital director, and the dean? What have they said or done?

2. Have you shared these data with residents and what is their take?

3. Can multidisciplinary teams develop ways to deal with some of these deficiencies, or what solutions should we pursue?

4. What should our professional societies do to address these issues?

5. It is argued that the transfer of wealth that occurred during the development of for-profit medicine is the largest ever known in history. Are we to witness the transfer of—in our president’s words—“our fiduciary responsibility” for patient care and education and blame it on the 80-hour workweek? What should we do?

James W. Holcroft, MD, Sacramento, California: I am listed as an author, however, I am a sponsor as opposed to an author. I get no credit for this. I will make a couple of remarks and then I will turn this over to Dr Lynette Scherer who is our residency program director and who was the senior author along with Dr Vanderveen. But I think this study comes down in many ways to the inexplicable bond that we heard about earlier in this meeting. Although the study concentrated its efforts on an academic environment, I think it applies generally. I think it also has to apply to the older surgeons in community practice as well as to the surgeons in academic institutions.

All of us are working with younger surgeons, both in the community and in academia, and I think that most of us, at least occasionally, must feel some degree maybe of even sentiment about what seems to be a different attitude toward work between the older individuals in the group and the younger individuals. I think that one of the things that came out of this study was looking at the difference in the way that surgeons looked at it and the way that nonsurgeons looked at it, and I understand that I don’t think there is anything else in the literature on this particular subject. I think that in turn has to do with the inexplicable bond.

Surgeons are going to pick up the slack. If the older surgeons think that it is necessary in order to deliver good care for their patients and if it seems as if some of the younger surgeons aren’t going to put in quite the same effort, the older surgeons will step in. I don’t think that is quite so true, and I am sorry, among our friends in internal medicine and some of the medical specialties. I don’t think they feel that inexplicable bond to the same degree. As a consequence, I think they are perhaps more likely to ask the institution to step in and help out when there seems to be more work to be done. As a consequence, we sent off the questionnaire to surgeons who are more likely to send it back. We sent off the questionnaire to surgeons who are more likely to send it back. We sent off the questionnaire to surgeons who are more likely to send it back. We sent off the questionnaire to surgeons who are more likely to send it back. We sent off the questionnaire to surgeons who are more likely to send it back.
The second is that we need to be proactive in the political arena. now, talking about it and recognizing that the changes exist. things that we should do. The first is what we are doing right now, talking about it and recognizing that the changes exist. They hate it. What I hope to leave you with is that although there is a perceived decrement in job satisfaction, what it really is is a change in what their job composition currently is, and that we need to do some things to get them back to doing what they want to do, which is to teach residents.

To answer your questions, Dr Hoyt, the first question, have we shared these data with the hospital director and the deans and department chairs? Yes, we have actually. We provided the results in aggregate and by department chair and program director. I am surrounded by enthusiastic, highly committed residents and faculty. So I don't really perceive that the group is uninterested in learning or caring for their patients. The faculty is genuinely delighted with the resident interaction, and they love the clinical activity. So quite honestly, I think you could find any more dedicated or enthusiastic faculty.

The second question, have we shared these data with residents? Yes, other than the chief resident who put this study together and presented it, we have not yet formally shared this information with our residents. Your third question was about multidisciplinary teams. Can we develop multidisciplinary teams to deal with some of these changes? I think the answer is that we must. We learned yesterday during the excellent presentation and panel discussion that if we don't do something different we are going to end up just like the nuns. So we must do something different. In my own practice setting, I am a trauma surgeon; we have utilized nurse practitioners and physician assistants. Some departments have had the opportunity to hire more faculty, and they have changed their schedules to accommodate the changes in resident coverage.

The third question was about multidisciplinary teams. Can we develop multidisciplinary teams to deal with some of these changes? I think the answer is that we must. We learned yesterday during the excellent presentation and panel discussion that if we don't do something different we are going to end up just like the nuns. So we must do something different. In my own practice setting, I am a trauma surgeon; we have utilized nurse practitioners and physician assistants. Some departments have had the opportunity to hire more faculty, and they have changed their schedules to accommodate the changes in resident coverage.

We support the 80-hour workweek reform and having competent physicians in this country, but what I don't think the legislators and the general public recognize is that implementing work-hour restrictions incurs up to a 30% reduction in our workforce. If you sent that to a Fortune 500 company, they would flip their lid. We are still expected to deliver the same level of care with a significant reduction in our workforce, and I think it is incumbent upon our societies to make that apparent and come up with the funding to offset that.

Lastly, the fifth question, just like on rounds, the one with the hard answer, are we witnessing a transfer in our fiduciary responsibility for patient care and education and blaming it on the 80-hour workweek. Well, I'll tell you, there is no blaming in surgery, so we are not here to assess blame to anything. I am here to tell you that having been a resident and a fellow at UC Davis and then leaving for a while and coming back as a faculty member and program director, I am surrounded by enthusiastic, highly committed residents and faculty. So I don't really perceive that the group is uninterested in learning or caring for their patients. The faculty is genuinely delighted with the resident interaction, and they love the clinical activity. So quite honestly, I think you could find any more dedicated or enthusiastic faculty. I believe that this is a response to change, not a loss in our fiduciary responsibility.

Theodore X. O'Connell, MD, Los Angeles, California: I enjoyed this paper very much, because it really opens our minds to the changes in resident duty hours and its intended or unintended consequences. My question, however, is this really objective data? In the last paper, we heard whether trauma outcomes are affected by reduced resident hours, although people have their feeling about it, people complain but when you really measure it and measure it objectively, there is a no significant objective difference; there is only subjective, perceived change. Have you done anything to measure your outcomes objectively, such as amount of hours teaching, hours that attendings have free time, etc. or is it just because of their reaction to the change that makes them feel negatively. I noticed too that the preconceived notions or perceptions of the residents having a better life, that the attendings were having the opposite feeling that their life was worse in a proportionate degree. So how much of this is sour grapes, where they say the residents are getting everything better and we are getting everything worse. We are getting the short end of the deal.

The other thing we've heard a lot about in the sessions yesterday was generational changes. Is this a post hoc propter hoc argument of the 80-hour work week causing all the changes rather than a simple generational difference. Attendings may look at the residents and state they are not like us, they are different from us, they are not as dedicated as us, they don't work as hard as we did, but it is objective difference caused by the 80-hour week or is it a generational difference that they are just coming to blows with a generation that has a different notion of the world than older surgeons and which we just need to come to grips with. There may be a different outlook in the surgical resident world, but it hasn't been necessarily created by the 80-hour work week. Dr Scherer: To answer your question about the perception vs the reality, this was absolutely a study on perception, and we know that it's true that oftentimes reality and perception are different. Work hours is the timeliest example. If you ask a group of physicians how many hours they work, they will estimate 100. But when you actually look at it, it's 65 to 75. So there is no doubt that perception is often different than reality. But I would argue that it's the perception that might actually matter more. If people are...
perceiving things as terrible, it’s our job to help them figure out what the reality is so that we can settle into a new equilibrium.

The other question was regarding whether they are like us or not. I do think there is some generational differences, and the more we understand and recognize those, I think the better off we are going to be. I think we are moving on that road now. I can tell you, just coming off the intern interview circuit, you will not find a more excited, enthusiastic, motivated bunch of kids coming through, and if there are sour grapes by the time they are in the middle, then we did something wrong.

John T. Vetto, MD, Portland, Oregon: I want to thank the authors for a timely and interesting paper. I can’t resist making a comment about the structure of the paper. A key finding of this paper was the responder bias. If we were at a statistical meeting, this paper might be criticized because you only had a 41% response, and, as you have already pointed out, that response was heavily weighted toward surgeons. It is therefore interesting from a technical standpoint that the bias of the study is also one of the main messages of the paper—surgeons are the group most affected by and concerned about duty-hour restrictions.

That leads me to my question. In 2 years, we will graduate our first group of residents who were weaned entirely on the 80-hour workweek. They will then become young attending. Do you think that that will lead to less concern and fewer studies like this, or do you think that will lead to more cultural problems, with older surgeons having to step up even more to the plate?

Dr Scherer: I would agree with you in terms of the responder bias. I was a little bit disappointed in the 41% response rate until I reviewed the other survey literature and found that the average is about 20%, so as surveys go, we actually had a pretty good response rate.

Regarding the future, I think there is going to be opportunities to study this some more. We’ve already seen a fair amount of our residents, who come out of a very busy clinical program, pursuing fellowship training, feeling the need to get more training, and I think what we are going to see in the future is the critical reliance on mentorship as these young surgeons go out into practice.

Quan-Yang Duh, MD, San Francisco, California: I want to congratulate Dr Vanderveen for an excellent presentation. My question is similar to Dr O’Connell’s. I agree with you that perception is very important. I noticed in the data that the surgeons believe that they worked longer hours overall, but at the same time, they spend fewer hours teaching residents and the same number of hours taking care of patients. The numbers don’t add up. To work longer hours, the surgeons have to be doing something. Most likely the surgeons are working longer hours taking care of patients, but because we love our jobs so much, we don’t feel it. Or perhaps we are actually doing the same amount of teaching, but we think we are doing less because the residents have hour limitations.

Dr Scherer: I agree with you that you certainly mathematically cannot make it equal a 24-hour day. But it is the perception that I think is so important in this group. I think your job composition determines a lot about what you actually think you are doing during the day. I remember as a resident I used to moonlight in ER [emergency room] and 8 hours felt like 5 days to me. The work was different and hard compared to what I was doing every day, so I think that to get at that question would require objective data.

Lawrence W. Way, MD, San Francisco: I have 2 questions. First, have we changed our approach to resident education as much as is appropriate given the imposed changes? Do more handoffs affect safety and quality of patient care? Handoffs, by their nature, result in imperfect transfer of information; they should be kept to an absolute minimum. But when necessary, the handoff event should be analyzed in the context of the work and structured so as to minimize the unwanted effects. We are just getting started in this area.

Second, are the residents learning as much as before? One would hope so. But are we doing everything possible to answer the question and ensure that they are? Before the 80-hour work limit, the residents had far too little time (in my opinion) to read in depth, while clinically relevant medical knowledge was growing rapidly. We should look at the extra time out of the hospital as a dividend and structure the learning environment to a greater extent and demand more good, hard studying.

Dr Scherer: Thanks, Dr Way. I agree with you that this topic needs to be studied with a more rigorous approach. Regarding our residents not learning as much, the data are available. Operative case log numbers, at least in our program, are relatively stable, a little decrement, but they have been relatively stable over the past 10 years, and ABSITE [American Board Surgery In-Training Examination] scores have not changed at our institution. I know that there are some varying data on that. And first-time board passage rates are the same. So, the objective data as to whether or not the residents are not learning as much doesn’t seem to be there, but I think as an educator it’s extraordinarily frustrating to show up in the operating room after a resident has had their day off and they have no idea what operations they are doing and no idea how to do it. So as an educator, I want to hear about the Fresno Flower Mart, I want to hear about the blood supply to the spleen. So I think we need to make our expectations clear to the residents.

Carlos A. Pellegrini, MD, Seattle, Washington: Since I have defended the 80-hour workweek and worked on the first panel that put them on, I rise to ask you simply: Is it possible that this is true, true and unrelated? In other words, the title of your presentation is “The Impact of the 80-hour Workweek” on this dissatisfaction with their job. Is it simply possible that people are dissatisfied with their jobs for a number of other reasons? Most of us are dictating a lot more notes, are writing many more progress notes, are much more careful with the way we are billing, and looking at regulations that govern the practice and are doing a number of things just to fulfill a list of obligations that are related to exercising the profession. I am just wondering without controlling for that, how do you know if the residents working less time in the hospital accounts for attending’s job dissatisfaction?

Dr Scherer: We were actually surprised by the decrement in job dissatisfaction because, like I said, actually it appears that people are actually pretty satisfied with what they are doing. So I would agree. I don’t know why they reported decreased job dissatisfaction, and I would be interested to know more about that. I tend to believe it’s exactly as you say; it’s the composition that has changed, and I don’t know if it is related to the 80-hour workweek or increased regulation or increased oversight. It’s just perceived to be temporally related to the 80-hour workweek.

Jeffrey Pearl, MD, San Francisco: My definition of a good presentation and paper is to see what discussion has occurred, and this one is an excellent paper, so thank you for that. As the pendulum swings, we have gone to living in the hospital, not being allowed to be married and have children to an 80-hour workweek with all of the parts in between. This association has been in existence since 1925. I wonder if you wouldn’t take your wonderful approach, ideas, and data and work with the historian, Dr Alberty, and see what has happened in the time frame that this association has been in existence during the pendulum swinging.

Dr Scherer: As a hopeful new member next year, I would very much look forward to that opportunity.

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