Published in final edited form as:

Soc Sci Med. 2012 November ; 75(9): 1625–1632. doi:10.1016/j.socscimed.2012.07.007.

Remaking Surgical Socialization: Work Hour Restrictions, Rites of Passage, and Occupational Identity

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Abstract

We examine how a policy aimed at improving patient safety by limiting residents' work hours brought with it an unintended and unexamined consequence: *altered* socialization due to modified rites of passage during residency that endangered the stereotypical "Surgical Personality" and created a potential rift between the occupational identities of surgical residents who train under duty hour regulations and those who trained before they were imposed. Through participant observation occurring between June 2008 and June 2010, in-depth interviews (n=13), and focus groups (n=2), we explore how surgical residents training in four U.S. hospitals think about the threats that the shift from unrestricted to restricted duty hours creates for their claims of competence and professionalism. We identify three types of resident responses: (1) neutralizing statements that deny any significant change to occupational identity has occurred; (2) embracing statements that express the belief that a changed and more balanced occupational identity is needed; and (3) apprehensive statements that expressed fear of an altered occupational identity and an anxiety about readiness for individual practice.

Keywords

USA; physicians; patient safety; resident socialization; occupational identity; rites of passage; work hour restrictions; surgical residency; medical education

BACKGROUND

Duty hour regulations

In 2003, the Accreditation Council for Graduate Medical Education (ACGME) implemented duty hour regulations (DHR) that for the first time limited work hours for residents in all specialties. The regulations emerged as the result of pressures for reform from multiple sources. An accumulating body of research demonstrated the adverse impact of sleep deprivation on the performance of residents (Samkoff & Jacques 1991; Koslowsky & Babkoff 1992; Veasey et al., 2002; Weinger & Ancoli-Israel 2002; Landrigan et al., 2007).

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This research highlighted two negative impacts: problems sustaining concentration to support complex cognitive decision making or delicate control of fine motor functioning, both of which compromised patient safety, and risk of injury or death to residents or other innocent motorists while driving home fatigued (Lockley et al., 2007). In the midst of public concern about harm to patients from preventable adverse events, documented by the Institute of Medicine's report, *To Err is Human*, the ACGME presented DHR as a measure to promote patient safety and resident well being (Kohn, et al., 2000; ACGME 2002). In addition, the ACGME's policy pre-empted political pressure from groups lobbying for federal regulation of duty hours (Evans 2002; Gurjala et al., 2001; U.S. Congress, 2001: H.R. 3236) and helped allay public concerns about fatigued residents causing them harm.

The 2003 regulations stipulated that residents must work no more than 80 hours per week, averaged over a four-week period, and also limited the number of consecutive work hours to 30. Recent ACGME rules include a significant revision that limits consecutive work hours to 16 for first year residents (ACGME 2011). The ACGME stated that prior to regulations, duty hours were "the highest for general surgery, obstetrics-gynecology, surgical subspecialties and anesthesiology" (ACGME 2002:1). In those specialties in which residents previously labored the longest, DHR create the potential for greatest social and cultural adjustments to the organization of work.

Despite abundant research on the effects of DHR, measuring the overall impact of DHR is complicated. While shorter hours help residents be more alert when working, shorter hours also require more frequent hand-offs between residents, which can thwart continuity of care, increasing the possibility of important patient information being lost.

Research evidence is inconsistent about DHR's effect on patient mortality (Shetty & Bhattacharya 2007; Volpp et al. 2007; Volpp & Landrigan 2008), but Volpp (2008:2581) writes, "most studies have found that resident duty hour reform has not had much effect on patient deaths." The overall net gain or loss from DHR implementation remains unclear, and work hour reform is part of a "Delicate Balance" along with other important factors, like resident education, patient safety, and workforce needs of hospitals (Volpp 2008).

Data on the effects of DHR for surgery is mixed as well. In the most comprehensive review of literature to date, Jamal et al. (2011) found that overall, DHR affected residents positively and surgical faculty negatively. In terms of surgical education, these researchers found that no study reported a worsening of exam scores. The effect of DHR on operative experience was mixed—of 15 what the researchers deemed "high quality studies," 11 showed a neutral affect, 2 showed a positive effect, and 2 showed a negative effect (40). Other scholars reported "no major negative impact on the operative experiences of residents since the implementation of work-hour restrictions" (Sachdeva et al. 2007:1204; see also Hutter et al., 2006; Tran et al., 2006). In terms of faculty, however, Jamal et al. (2011:40) find that not only do faculty believe DHR are negatively affecting resident training and patient care, but also find that faculty "reported an increase in their workload and more job dissatisfaction in comparison with the period before the restriction of duty hours."

Duty hour regulations, professional socialization and occupational identity

Within medical sociology, there exists a long tradition of studying socialization during medical education (Merton et al. 1957; Becker and Geer 1958; Becker et al. 1961; Light 1979; Haas and Shaffir 1982; Fox 1989; Hafferty 1991). Scholars are interested in the process by which outsiders become insiders, and by which students are taught the skills and knowledge to be physicians and yet also the beliefs and values "to think, act, and feel like a physician" (Merton et al. 1957:7). Studies of medical socialization have shown that this transformation is far from straightforward and neat; instead, it is an "ongoing and tension-

ridden series of encounters during which lay values and attitudes become labeled as “suspect,” “dysfunctional,” and ultimately “inferior,” while newly encountered, medical “ways of seeing and feeling” become internalized as “desirable,” “functional,” and “superior” (Hafferty 2000:241–242).

Our research focuses on the next step of training after medical school: residency (see Light 1980; Bosk [1979] 2003; Scully 1980, and Mizrahi 1986 for other sociological studies of residency). Specifically, this study considers the socialization process that occurs during surgical residency, which lasts five to seven years depending on the program, and which transforms medical school graduates into *surgeons*.

Fox (1989:109) writes that during residency trainees “consolidate their acquisition of professional attitudes and values, [and] crystallize their professional identity.” We study residents during a period when the process for “crystalizing” their professional identity has been altered—less because of difficulty reconciling their old and new ways of life and more because the actual identity they are trying to “put on” is in flux because of an external policy change (DHR).

One of the key contributions of our paper is that we study apprentices during surgical socialization at a time when the nature of the threat to occupational identity is two-fold. First, DHR change rites of passage, calling into question how apprentices will become “real surgeons” in the estimation of those training them, who became “real surgeons” precisely because they endured a socialization in which hours worked were unlimited. The second threat created by DHR, however, is not directed at the tentative apprentice’s surgical identities, but instead aimed at what we call the “Surgical Personality”—the more general ethos of the surgical field at large (see Bosk 1986). When externally imposed regulations prohibit characteristic “ways of believing, seeing, feeling and acting,” committing to a professional identity becomes difficult, especially when regulatory bodies declare that the profession’s self-proclaimed ‘superior,’ ‘desirable’ and ‘virtuous’ nature, as personified by the Surgical Personality, is actually a threat to safety.

As with all planned social change, the reduction of duty hours produced unintended consequences (Merton [1949] (1968)). For surgical residents, DHR pose specific problems because working many hours has long been functionally and symbolically important in surgical training (Parsons 1951; Bosk [1979] 2003). The very definition of what it means to be a surgeon has been closely connected to the long hours that DHR now forbid: the process of socialization into surgery involves embracing a “stoic ethos that defies physical weakness” (Cassell 1998:103). Working despite hunger, sickness, or fatigue demonstrates professional commitment to patients. Any external regulations—especially those limiting hours spent treating patients—threaten residents’ abilities to enact their commitment to the ethos that defined a surgeon prior to DHR.

In addition, the everyday tasks of surgical work—cutting into, excising, replacing, or rearranging parts of the patient’s body—require high levels of cognitive complexity, dynamic situational awareness, and manual dexterity involving delicate fine motor skills. Before duty hour regulations, surgical residents routinely worked 100 to 120 hours a week; with the implementation of DHR, apprentices in surgery are forced to acquire the cognitive skills and muscle memory required for independent practice in fewer hours than their colleagues who trained before DHR.

DHR can impinge on the type of learning necessary to meet the demands of practice once training is completed. In order to master unpredictable work demands, practitioners need to learn to work when fatigued and become accustomed to work interrupting their lives. While DHR create more reasonable work schedules and help safeguard against harm to patients

from fatigued residents, they can also hinder surgical residents from developing and internalizing the confidence that they are capable of performing competently, even when exhausted. Prior to DHR, thriving or merely surviving a grueling surgical residency provided those that did so the reassurance that ‘if I can manage this, I can manage anything.’ With DHR, there is no clear source of this self-assurance, and such self-assurance is a necessary part of a successful surgeon’s identity.

We are not arguing that duty hour restrictions are the only or even the main concern at play in the management of the occupational identity for the surgical resident, as there are multiple regulatory, economic, and organizational factors changing the environment in which training takes place and health care is delivered. However, the effect DHR have on the tentative identities of residents, as apprentices, has been overlooked in previous research examining the policy. DHR, being externally imposed and visible, as well as insensitive to differences among specialties, serve as a magnet for collecting concerns about changes in the delivery of surgical care and about professionalism in a health care system that is heavily regulated and increasingly driven by commercial values.

Rites of Passage

There is something ‘natural’ about a change in duty hours becoming the focus of intense debate about professional commitment, quality of care, and the core identity of surgeons. A common social science rubric for understanding professional socialization has been the classical anthropological rite of passage as first defined by Van Gennep ([1909] 1960). Rites of passage mark the transitions from one status to another—child to adolescent, adolescent to adult, adult to elder. The confidence that all in a status are equals with shared skills and values is reinforced by the knowledge that all in the status had passed the same ritualized tests, ordeals, and challenges.

When the fundamental structure of socialization is changed, its symbolic, ritual meanings change as well. The confidence that ‘we are the same’ because we passed through a socially shared ordeal crumbles. Deliberately making the ordeal less rigorous exacerbates the more general problem that Mannheim (1952) identified as the “problem of the generations.” DHR create anxiety and doubt shared by residents and the older generation of surgeons alike about an emergent culture of shift-work and an erosion of professionalism.

An older generation of surgeons is so alarmed that DHR change the rites of passage from novice to accredited surgeon that they have filled the editorial columns with jeremiads decrying the impact of DHR. Carlin et al. (2007:326) refer to duty hour regulations as a “radical paradigm shift in surgical training.” Fischer et al. (2009:136) argue that there is a unique bond between surgeons and their patients, and that the “that bond can and will be broken if surgeons become ‘shift workers.’” Escobar and McCullough (2006:533) write that “concerns for lifestyle and entitlement can overwhelm any sense of self-sacrifice and threaten to supersede professional formation and education in the mindset of the resident.” Throughout the literature, senior surgeons are concerned about the professional dedication of a generation of surgical residents precisely because they will be trained under DHR.

DHR enters the scene of residency and manifests as a double-faceted threat to the socialization process for surgical apprentices. First, DHR weakens the traditional rites of passage into the role of surgeon, calling into question if trainees have “the right stuff” to be a surgeon. Second, by limiting long hours—a core trait of the “Surgical Personality”—DHR call into question the superiority of this ethos that apprentices are supposed to acquire in residency. How do residents respond to this threat to their individual surgical identities? How do surgical residents respond to the discrediting presence of DHR to the Surgical Personality? We examine, through observation, in-depth interviews, and focus groups,

surgical resident responses to how DHR has affected their rite of passage from resident to surgeon and how they respond to the attacks of the traditional Surgical Personality.

While within the conventional scope of socialization literature to study the professionalization process, our research investigates tensions caused by an external source (DHR) that regulates only trainees in residency (regulations do not apply to senior surgeons) and thus our findings pertain specifically to those whose “occupational identities are still in question.” This enables us to investigate resident response in a very unique professionalization situation—when both the Surgical Personality and the rites of passage to achieve that Personality are threatened, and when apprentices have not yet fully internalized their new identities.

METHODS

Design and Data Collection

The data for this paper was collected under grants from the United States Department of Veteran Affairs and the National Heart, Lung, and Blood Institute to study the impact of the 80-hour workweek on resident physicians. Using a multi-institutional design, fieldwork occurred between June 2008 and June 2010, with observations ranging from three months in one hospital to one week in each of three hospitals. Hospital sites include a major academic hospital, a VA hospital, and two community hospitals with freestanding residency programs. At two sites, there were two observers on general surgery and two on internal medicine. For the remaining sites, there was one observer for each specialty. While carrying out research, fieldworkers shadowed surgical residents throughout their entire days. Researchers experienced early morning rounds, running patient lists, educational presentations, operations, and clinic appointments. Observers were allowed access into the holding areas, operating rooms, emergency rooms, and call rooms, and even took overnight call with residents in the hospital. Due to the rotating nature of resident education, researchers observed multiple team combinations and surgical personalities. A total of 35 surgical residents at the four hospitals were observed throughout their daily work routines.

At the conclusion of fieldwork, we conducted digitally recorded individual semi-structured interviews of 13 surgical residents, which lasted an average of 50 minutes. We also conducted two focus groups of additional residents: one group of 10 surgical interns and one group of 15 senior surgical residents. Some focus group residents were interview subjects only, and were not closely observed. Individual interviewees were solicited from the residents that we closely observed and were available to be interviewed. An additional two residents were suggested by our original contacts and consented to interviews. Focus group interviewees included all residents that were present on the day focus groups were conducted. The interviews were composed of questions that emerged inductively from previous observations and took place in or near the hospital, in a variety of locations including the surgical library, academic buildings, and conference rooms. The research was approved by the IRB of the authors’ institution and the IRBs of the four participating institutions that housed the observed surgical training programs. Informed consent was secured for the audio taped interviews and residents who did not wish to be part of the observational study were given the option to opt-out of the observational portion of the study (none chose this option).

This paper primarily focuses on interview data, but is supplemented by over 350 hours of field observation by the first author. The second author has spent more than thirty years studying the socialization of surgical residents and is able to provide a validity check on senior surgeons’ recall of their experience as residents. As Snow and Anderson (1987:1364–1365) explain, intense fieldwork provides an opportunity to understand identities “‘in use’ in

an ongoing system of action rather than responses to pre-structured questions in purely research-contrived situations.” As a result, our interview questions evolved as we observed residents in their “ongoing system of action,” and as we became attuned to the variation of responses to DHR, both between and within individual residents.

Data Analysis

The first author analyzed observational data, interview transcripts, and focus group data for residents’ talk about occupational identity and DHR, paying specific attention to the ways in which DHR were woven into narratives of socialization and training. Using QSR International’s NVivo 9 qualitative data analysis software, coding categories were developed and thematic responses emerged inductively. In this paper, the authors have assigned each resident a unique two-digit identifier as well as a letter, which corresponds to the hospital where the resident was observed.

FINDINGS

We found three predominant surgical resident responses to the question of whether training under DHR remakes their occupational identities: neutralizing, embracing, and anxious. The responses that we describe are best understood as “ideal types,” (Weber [1949] 2010) reflecting different levels of how DHR influences identity. Neutralizing statements denied any meaningful change to occupational identity or Surgical Personality from DHR; embracing statements expressed the hope for a changed occupational identity that is more balanced and a changed Surgical Personality that promoted such balance; and apprehensive statements communicated anxiety about a changing Surgical Personality and a discredited occupational identity. Our unit of analysis is responses, rather than residents, because residents in interviews often first neutralized the impact of DHR, then on second thought, embraced or were anxious about change. In interviews almost all residents displayed a combination of response types, indicating the complexity of the relationship between DHR and occupational identity.

Resisting a Changed Occupational Identity: Neutralizing Responses

We find that many surgical residents used neutralizing statements (Sykes & Matza 1957) to shield themselves from the claim that reduced hours have compromised their ability to acquire equivalent skills, judgment, and professionalism. In these responses, residents acknowledge that training has shifted, but argue that these differences do not make current surgical residents categorically different or weaker than earlier cohorts.

The first strategy to deflect identity change from shortened training draws attention to *other* changes in delivery of care or facets of surgical work that make the present work environment more challenging than was previously the case. Compared with earlier generations of surgeons, this more complex world of inpatient care demands that surgical residents treat patients with higher acuity levels and more co-morbidities.

I think there is a considerable more amount of paperwork that is done, and there is a 24-hour consulting service for non-emergencies...that just results in you’re working every minute of the time. I think also, that we work a lot during these 80 hours because of concerns for litigation. Every single patient that comes in with a potential surgical, even though it’s not a surgical issue—we see, we follow, throughout the day we have to go back and see and see again...what I’m saying is that we work hard during the 80 hours. (D.02)

I think the work intensity has changed so much. I think long ago like when people worked the 140 hours, they would sleep on call and they would do other things

while they were in the hospital. Now, we rarely ever do get to sleep on call and I think we see more patients. (D.01)

Although they have no way of proving that this is the case, residents argue that although they have shorter schedules, their hours are more intense. This allows them to claim the traditional Surgical Personality, which is tough and resilient. In this response mode, residents believe their work is as demanding as that of earlier cohorts because the same responsibilities are compressed into fewer hours. One indirect proof of task compression is the complaint of surgical faculty that DHR have decreased attendance at clinical case conferences and formal didactic activities.

The second way residents neutralize the potential identity-altering challenge of DHR is to shift attention from themselves onto the earlier cohorts of residents to question what counted as work hours: residents of the past were in the hospital, but not necessarily doing *real* work. Undoubtedly, much of the work in the regime of unlimited duty hours, such as reading journals and studying for board exams, has been outsourced to home post-DHR. Furthermore, before the 80 hour work week, part of the work day included time spent waiting for the chief resident or attending surgeon to leave the OR in order to round on patients. As one surgeon reported, duty hour regulations have “trimmed the fat” from the schedule.

I mean, I think, if anything, [the 80-hour work week] has forced people to become more efficient. As opposed to waiting till the end of the day after all the cases are done in the operating room to round on all the patients on the service, rounding at like 2:00 or 3:00 between a case.... From what I understood before the 80-hour workweek people would just sit around and wait for their chief to finish in the operating room... to sign out. I don't think that's acceptable any more. I think what the 80-hour workweek has done has made things more efficient. (A.03)

These responses deny the impact of DHR on occupational identity by arguing that the new workweek has eliminated pockets of wasted time in residents' schedules, while still preserving the “meat” of training.

Finally, residents argue that “bright” residents learn what they need to learn in 80 hours a week and the extra 40 to 50 hours a week are not essential.

Interviewer: So you do feel that surgical residents can be trained in 80 hours?

A.05: I do. There are some residents that are obviously brighter than others, and so someone who's not very bright and who doesn't pick things up quickly, would they benefit from an extra 50 hours a week of pounding it into their heads? Yeah, they probably would, so it's not that there's nobody that would benefit from more hours in the hospital, but at the same time, there's a lot of people I think who are gonna be just as good learning something for 80 hours a week for 7 years as if they learned the same thing 130 a week for 7 years, because they're bright enough that they picked it up in the first 20 hours a week, and the other 60 was just repetition, and so another 50 on top of that wouldn't really make it any better...

Neutralizing responses emphasize how much organizational environment and everyday demands have changed in surgery, often in ways that compress and increase the intensity of their work. Residents use these responses to convince themselves and others that they are as tough and hardworking as the workers that preceded them. According to these responses, surgical residents view DHR as merely one more set of rules to integrate into their complex work environment, and not as rules that transform the core of who they are as trainees or who they will become as surgeons.

Welcoming a Changed Occupational Identity: Embracing Responses

In this section, we identify resident responses that embrace DHR as ushering in needed changes in surgery. These responses focus on a changing surgical occupational identity whose legitimacy is underwritten by duty hour restrictions. Statements that embrace DHR predict benefits of the Surgical Personality losing its superhero ethos and all consuming demands. Embracing statements blame the old system for burnout and failed family lives among an earlier generation of surgeons who worked a schedule that left room for nothing but work.

Embracing resident responses use oppositional identity work to challenge what being a good surgeon means. Schwalbe and Mason-Schrock (1996:141) describe oppositional identity work as the redefinition of “identities so they come to be seen as indexes of noble rather than flawed character.” There are residents, as well as attendings (see Kellogg 2011), who welcome the opportunity afforded by DHR to exchange a constricting occupational identity for one they see as more compatible with their goals.

One of the first aspects of DHR residents appreciate is an improvement in their quality of life. One resident described the former, 120-hour weeks as

Abuse... like it used to be where you just never slept and you were always here taking care of the people. You knew the patients really well but your life was complete misery, (A.06)

Residents welcome the improved quality of life that is ushered in with DHR. They also call attention to the benefits for the entire field of surgery as well:

I think if they hadn't gone to an 80 hour workweek, I think surgery would be in a serious crisis in terms of just not having enough people going into it to be able to take care of the people...who are gonna need it... I think that an allotted 80-hour workweek is more beneficial in terms of resident quality of life than necessarily patient safety. Some people use that as an argument, that it's no good, that residents aren't using this extra time necessarily to read and sleep. They're using it to go out to dinner and partially that's true....but I don't think that that actually is necessarily less valuable. It's valuable in a different way. It's valuable in terms of retaining people in your field as opposed to from a direct patient safety standpoint. (A.05)

These responses credit the changes as instrumental in attracting and retaining an adequate surgical workforce. These arguments express a belief that the inevitable changes in resident expectations about work life balance indicate the necessity of reduced work schedules—if surgery hopes to survive as a field.

For some residents, however, the shortened schedule does more than change their work schedule; it also brings a welcome change to the very identity or Personality of surgeons.

Residents push back against the idea that extremely long schedules are a necessary element of surgical training.

In a practical sense, I think the 80-hour workweek has other implications that aren't always talked about. I think it also makes people more balanced. Even if it's forced, even if people don't want to go home after 80 hours...I think it's helpful for people to kind of like stay rooted in the regular world outside of the hospital, especially when residency is 5 years long...So the 80-hour workweek sort of forces people out a little bit and back into their normal lifestyle. (D.08)

I think it's better after the 80-hour workweek because now, I think more normal people are willing to go into surgery. If somebody told you, you're 28 years old and

for the next – for at least five of the next seven years of your life you’re gonna live in the hospital and you’re gonna work 120 hours a week, most normal people would not do that. A lot of people who went into surgery back in the day, – there’s been a definite shift in the fellows from the time when I came here--a lot of them were just psychotic. And now the third year residents, for instance, are normal people. (A.06)

Here, residents suggest that it is important to be “balanced” and to be “normal,” characteristics that were undesirable in surgical residents pre-DHR. Residents also draw attention to the importance of a life outside of the hospital, and one prominent aspect of that life is family. The focus on a balanced family life has become necessary if for not other reason than the changing gender composition of medicine and surgery in particular.

I can say that for me, I think that the research about safety, is...a huge issue in the general public, but on a personal level, the 80-hour workweek for me opened up surgery as an option. I know a lot of people wouldn’t agree with me and, have other feelings..., but for me, as a female and being a little bit older, I didn’t come straight out of college into med school, I’m at a point in my life where I would have never even considered a specialty where I was here 120 hours a week. (D.08)

The new regime is desirable because it provides surgical residents room for activities other than work. Residents can take the freed time—the extent of which ought not be magnified, eighty hours is a mere four hours shy of half a week—and devote it developing dimensions of the self unrelated to work.

Fearing a Changed Occupational Identity: Anxious Responses

This set of responses indicate that residents are aware that DHR have brought perceived changes and threats to their occupational identity and they express anxiety about what the changes will mean for them. We find in some responses a grudging acceptance that a shortened period of training potentially leaves them less prepared for independent practice than their predecessors.

Residents indicate that they fear DHR create suspicion among those training them about their ability to meet the bar set by the prior training regime. Central to these responses is a self-consciousness that training under the constraints of DHR creates a fundamental difference between themselves and those trained pre-DHR. An intern, asked if he thinks there is a generational divide around DHR, said: “Yeah, especially in surgery. They think we’re a bunch of pussies.” One resident described hearing a conversation about how “easy” current residents have it now:

I was kind of eavesdropping on two of the more senior residents and you hear a lot of this like, “when we were interns” ...I don’t think that they actually hold it against me, but it’s a lot of this “20 years ago I walked barefoot 30 miles in the snow” – I don’t know. Maybe they did. What am I going to do about it? That’s not my fault that they worked like that and I work like this. It’s a new culture.(B.09)

In this response, the resident appears fully aware that his elders consider his efforts inferior to what was required of them, but he is prohibited from matching their work hours and points out how powerless residents were in creating rules. Other residents see the generational divide as a natural outcome of change in a dynamic delivery system, rather than a personal attack.

Part of that is the fact that [older surgeons] had more autonomy than we do now. I don’t think that there’s too much resentment though. It’s not really a malignant attitude by them towards us. It’s more yeah, they probably do think that we’re not

as good as they were, and they're probably right, but I don't think that they are mad at us for it. (A.05)

Even more anxiety provoking than the beliefs of others, however, are the doubts that residents harbor internally about whether, because of reduced operative time and clinical experience, they will be unprepared when their residencies are completed. Under DHR, the opportunities to repeatedly perform the same surgery, to teach one's hands how to navigate during a procedure and to adapt to each patient's unique anatomy, are reduced. A number of residents talked about losing critical but "minute learning points."

I think it's obviously nice to get some sleep, it's nice to go home post-call, but I really don't think that you can truly learn and understand all the pathophysiology that there is when you go home and you leave, you hand off the learning point—even if it's something—a minute learning point that can occur, one tiny little thing that could occur that would require you to be there for 10 hours, over the course of 5 years, that builds up. Those little learning points build up... And I'm not sure that we're going to be as confident or as capable as the generation ahead of us... (D.10)

If I were to sleep the night before, and I wake up the next morning and there's 3 really beneficial cases that I could be involved in, I have to go home. And, that's a loss. So rather than being independent and making good decisions and saying well, I slept last night and therefore I'm able to perform tasks this morning, there's a rule in place, and it says you have to go home, and that's a loss for your education. (D.02)

Despite mixed research evidence, residents are concerned about the losses that they perceive will occur if DHR decrease their clinical experience during training.

I think the questions are gonna be whether people who finish residency in this day and age are gonna be as comfortable doing the complicated patients that they're gonna end up seeing ... So I just wonder whether us not having as many cases, as many experiences will make us uncomfortable when we first get our really, really crazy patient and we're where the buck stops... Are we gonna be able to treat our attendings when they become the baby boomers who need the surgeries? And I think that's probably what their biggest concern is like I don't know if I have anyone who I'm training who I can feel comfortable coming to with my pancreatic cancer. (A.07)

In these responses, we see how DHR have removed one of the benefits for residents of the "inhuman" work schedule—a temporally unconstrained exposure to operations and postoperative care.

DISCUSSION

The residents we observed were in the process of sorting out the meaning of DHR as apprentices who had not fully taken on the professional identity of surgeon. Limiting surgical residents' work hours changed a fundamental dimension of the traditional socialization process, disrupted generational continuity, and challenged the traditional "Surgical Personality," creating space for residents to emphasize the need for a 'balanced' lifestyle.

Many resident responses neutralized the threat this change posed for occupational identity by framing the regulations as merely one among many changes in a continuously dynamic health care environment. Other responses saw DHR as part of a more general movement reframing what it means to be a professional and a surgeon. Finally, some responses

indicated that residents were anxious about insufficient training during residency because of the decreased hours.

This paper emphasizes the importance of understanding the existing occupational culture when creating and executing regulatory policy, especially when those regulations challenge many of the norms of that culture. We have examined the unintended and unexamined consequences that DHR impose on individual trainees as they navigate socialization. DHR put surgical residents in a uniquely difficult position. The policy targets residency in the hierarchical team, leaving the work hours of medical students and attending surgeons unregulated. To navigate their socialization, residents need to demonstrate their commitment to professionalism without the traditional methods for doing so.

At the same time that surgical apprentices are navigating changed rites of passage, they also are training at a time when the traditional “Surgical Personality” has been attacked as a threat to patient safety. Today’s surgical residents experience older surgeons’ frustrations at finding sensible ways to implement the regulations while preserving core professional values. Hughes (1959:293) writes of the likelihood for “occupations of long standing to resist attempts, especially of outsiders, to determine the content of their work or the rules governing it.” In resisting the regulations, senior surgeons try to show that harm is being done by the external regulations, thereby illustrating that they alone are wise enough to “manage their knowledge and work in their own way” (Freidson [1970] 1988: xii). Residents are caught in the line of fire as surgeons use them as proxies in a public debate about professional autonomy and freedom, and residents are caught in a time when the occupational identity of surgeons is at stake.

Finally, this paper emphasizes the important role that individuals—even apprentices—have as agents mediating structural changes. As Hoff and McCaffrey (1996:186) found, “intraprofessional variables influence the form of individual adaptation.” While our resident sample was not large enough to draw causal relationships, further understanding of residents’ responses to DHR would benefit from examining variables such as: year of training, type and size of residency program, career goals, gender, and age. Our findings suggest that the response to the regulations was complex and variable, both within and across individual residents. As we have shown, the very change that makes some residents question their ability to be a good surgeon is the same change that makes it possible for other residents to choose surgery and to experience the “flavor” of the Surgical Personality as palatable for the first time.

Of the issues DHR create for residents, the one felt most keenly is the fear of being insufficiently trained upon completion of residency. In our data, senior residents who are close to independent practice expressed these doubts most frequently. While responses indicated that residents were concerned about diminished training, none of the residents indicated concerns about their own professionalism or dedication to patient care, despite this recurring concern in surgical journals.

This paper has several limitations worth noting. As mentioned above, sample size prevented inferences about how individual characteristics of residents affected their response. In addition, it is difficult to separate the concerns about DHR from a more pervasive and generational complaint that is common whenever one cohort replaces another. More than fifty years ago, we find reports that “members of the faculty complain about the “eight to five” student” and about “students [that] do not make as complete an effort as might be made” (Becker et al., [1961] 1977:421). Current generations never seem to walk as many miles barefoot in the snow as their predecessors. But DHR, because they are such a concrete

and identifiable form of change, have provoked considerably more noise and complaint than the typical generational grumbling.

Future research should follow further regulatory developments surrounding duty hours. Do the new ACGME duty hours adopted in 2011 go so far in protecting residents from fatigue that they will provoke resistance from senior faculty and residents? Alternatively, is the grumbling about duty hour constraints ephemeral, something that will disappear once all surgeons trained before 2003 retire? Will definitions of professionalism and rites of passage evolve for surgeons that are consonant with restricted hours?

While we focus on the American debate surrounding duty hours, work hour reform is part of the current landscape of medical education in many countries. The United States, even with the most recent 2011 regulations, still allows a greater number of hours than many other countries: for example, New Zealand allows 72 hour weeks and European countries allow 48 hour weeks, while Denmark averages 37 hours per week (Ulmer et al., 2009). Similar concerns about the negative effect of shortened hours on surgical education are not limited to the United States (Jagsi and Surender 2004). Chikwe et al. (2004:419) write in the *British Medical Journal*, “those of us lucky enough to be under way with our training on good teaching rotations can only feel relief that we are not in the cohort coming behind.” Future research should investigate how residents in other countries respond to duty hour regulation at the level of occupational identity.

CONCLUSION

Our paper investigates management of identity threat that occurs during professional socialization because of externally imposed regulations that forbid the time-honored ways that surgical apprentices displayed mastery. Our findings are an important addition to the literature on professional socialization and identity threat management because we look at how individuals struggle to take on a professional identity when that larger “Surgical Personality” itself is threatened. Our findings emphasize the agency of individual residents as they make sense of DHR. We found intra- and inter-individual acceptance and resistance among residents. Many in the profession see this particular regulatory moment as an opportunity for leveraging desired modifications within the profession of surgery.

This paper has focused on difficulties that one medical specialty, surgery, has had integrating the knowledge that fatigue impedes performance with its fiduciary responsibilities to patients and its rigorous socialization rites. We are at the beginning of what is likely to be a long battle between medical professionals and regulators to control working conditions for health care providers in the name of safety and quality. Our paper demonstrates that these battles will certainly affect the culture of the regulated fields, especially for trainees, who are in the process of learning to see, feel, and act like typical claimants of their occupational identities.

Acknowledgments

The contributions of the other observers on the project—Jacob Avery, Keri Monahan, and Julie Szymczak—have been invaluable. We thank them for their observations, discussion and feedback. Mary Dixon-Woods, Sabrina Danielson, Diana Khuu, Maryann Erigha, and Mark Neuman also provided helpful feedback on earlier drafts. We also thank our anonymous reviewers for their helpful comments.

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Highlights

- A neglected effect of duty hour regulations for surgical residents in US hospitals is a threat to their occupational identities.
- Restricted hours change traditional rites of passage to becoming a surgeon, creating a generational rift between surgeons.
- Findings identified three types resident responses to this threat: neutralizing, embracing, and apprehensive.
- Some responses minimized change; others saw regulations as helpful for changing the grueling nature of surgical residency.
- Other responses expressed anxiety about the impact of reduced working hours on their training and confidence.