

# Multi-Institutional Survey Suggests Duty Hour Violations and Under-Reporting by Surgical Interns

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## Abstract

**Background:** Surgical residents may be perceived as silent violators of duty hours as they try to balance patient care and regulatory compliance.

**Methods:** In order to examine the perspective of general surgery interns on their reporting of work hours, a survey questionnaire was distributed between May 6 and June 3, 2019 to first year surgical trainees at four major academic institutions near the end of their internship year.

**Results:** A total of 25 of 59 interns participated in our survey (42.4% response rate). Work-life balance was consistently rated as the most significant challenge facing surgical interns. All (100%) interns had at one time under-reported work hours, while 28% did so "often", and 32% "occasionally". Interestingly, one in five surgical interns reported receiving external pressure from their residency program to under-report working hours.

**Conclusion:** Surgical interns have difficulties adequately balancing their life with the rigorous work of a surgical resident, and that nearly all surgical interns both violate and under-report their work hours. Understanding the reasons why surgical trainees decide to under-report duty hours would help surgical educators develop innovative, non-punitive methods to improve work hour compliance.

**Keywords:** Surgical interns; Duty hours; Work-life balance; Surgical education

## Introduction

In 1984, the death of Libby Zion, a young female patient in the care of overworked residents, introduced a conversation of work hour limitations [1]. The lessons learned in her case spread quickly across New York State and in 1987 led to the development of NY State Department of Health Code 405 initiating work hour limitations [2]. The initiation of work hour limitations was ultimately adopted across the country by the Accreditation Council for Graduate Medical Education (ACGME) in 1988 and has undergone two major revisions, most recently in 2017 [3]. Since the death of Libby Zion, the lessons learned continue to resonate in the medical community. As such, work hour limitations have remained a highly debated topic, often highlighting generational disparities between attending physicians and house officers. This is particularly true in surgical training when considering the trade-off between shorter work weeks and preparation for independent surgical practice. We hypothesized that surgical residents may often be perceived as silent violators of imposed work hour limitations. It is well documented that among surgical residents, surgical interns are the most frequent violators of work

hour restrictions [4-6]. Consequently, our aim was to explore the perception of general surgery interns on their reporting of work hours while adapting to new clinical demands as a first-year surgical trainee.

## Methods

Interviews and focus group discussions with surgical interns were used to generate and validate our survey content. We pilot-tested the questionnaire in a group of 10 surgical interns to ensure clarity, relevance, and comprehensiveness.

The survey consisted of 30 questions structured as multiple-choice items or as statements with a 5-point Likert response scale (Supplement) [7]. The anonymous survey was distributed using a web-based tool (Survey Monkey.com Corporation), near the end of the internship year (between May 6 and June 3, 2019) to all surgical interns at four major academic medical centers in Boston, MA. Two automated reminders were sent two and four weeks after the distribution of the survey.

Participation was voluntary and responses were confidential. No incentives were offered for participating.

All the data were collected in accordance with the requirements of our Institutional Review Board. All data collected are anonymous and participants cannot be identified by residency program.

## Results

Over a collection period of one month, a response rate of 42.4% (25/59 surgical interns) was achieved. Over half (52%) of the respondents were categorical general surgery residents while the remainder were designated preliminary (28%) or non-designated preliminary (20%). Other characteristics of our survey participants are displayed in table 1 [7].

The vast majority (76%; 19/25) of residents described their transition from medical school to residency as “good” or “very good”.

The majority (72%; 18/25) of surgical interns reported having “very good” or “good” support from program leadership at the start of the surgical internship. Over half (64%; 16/25) of respondents reported “usually” or “often” feeling overworked during their intern year (Figure 1). Interestingly, an overwhelming majority (84%; 21/25) of surgical interns “often” or “occasionally” violated work hour restrictions (Figure 2). Only 8% of surgical interns stated that they “never” violated work hour limitations.

When anonymously surveyed about under-reporting of work hours during their surgical intern year, 100% of the interns had at one time under-reported work hours. Over a quarter of them (28%; 7/25) “often” under-reported work hours, while 32% did so “occasionally”.

Interestingly, one in five surgical interns (20%) reported receiving external pressure from their residency program to under-report working hours in order to comply with the 80-hour work week rule (Figure 3).

Although most surveyed interns reported feeling overworked and exceeding work hour limitations, 70% of respondents reported that

intern year “strengthened their determination to become a surgeon” with only 10% of them considering switching to a non-surgical career.

The results were similar across both genders (females and males) and internship tracks (categorical and preliminary).

## Discussion

After the death of Libby Zion in 1984, there has been a rising discussion of work hour restrictions [1,6,8-11]. The ACGME highlights four key factors driving current work-hour requirements: a team-based approach, physician well-being, education, and safety [3,12]. The burden of balancing these factors lay upon each surgical training program to effectively balance the trade-offs encountered when trying to maximize educational opportunities with both physical and mental wellbeing of their surgical trainees, all while maintaining an environment of patient safety.

Our results show that surgical interns have support from program leadership and most of them found their intern year experience to be a positive one in preparing them for the subsequent years of surgical training. However, nearly all surgical interns violated duty hour requirements during their intern year.

The rigors of surgical internship are starkly different from those of the preceding years in medical school. We have previously shown that surgical interns struggle finding a balance between work and personal demands such as maintaining pre-existing relationships outside of work [7]. The FIRST Trial demonstrated that surgical interns are the most frequent violators of the duty hour requirements and the 80-hour work week [4]. Consistent with current literature we found that nearly all surgical interns had violated hours, and despite ACGME regulations, they had all falsified their hours worked at least once during their internship. Furthermore, the vast majority of interns misrepresented their duty hours on a regular basis. This is troublesome given that programs seek to recruit hard working and honest residents to their training programs.

Motivating factors for under-reporting work hours are likely multifactorial. Szymczak JE, et al. [13] found that common reasons for violating duty hours were to complete patient care tasks or continue providing care for a critically ill patient with whom they were familiar. Occasionally violating hour regulations for these instances could be seen as a demonstration of ownership of patients as well as a sign of maturity and professionalism by young surgical trainees and should be encouraged by program leadership. On the other hand, regular duty hour violations raise concerns for possible under-staffing that should be addressed by administration.

An additional explanation for under-reporting may be that surgical interns worry honesty in reporting duty hours may lead others to perceive them as inefficient. Surgical residency has long valued a “stay until the work is done” mentality. Duty hour restrictions may be perceived as forcing residents to succumb to a “shift work” mentality. Residents may feel guilty and looked down upon should they leave unfinished tasks for incoming coverage to complete. Of course, there are occasions when residents must care for critically ill individuals and immediate transfer of care would be deleterious to the patient’s health and would itself be considered a violation of ACGME guidelines [3,12,13]. One might say that such behavior is unprofessional and an undesirable quality of a surgical trainee. It is possible that junior house officers have difficulty distinguishing between critical moments in which departure should be delayed and times when handoff of incomplete tasks is appropriate.

**Table 1:** Characteristics of survey respondents.

	Characteristics	(n) (%)
Age group	25-29 years old	21 (84%)
	30-34 years old	4 (16%)
Gender	Female	9 (36%)
	Male	14 (56%)
	Not specified	2 (8%)
Marital status	Single, never married	20 (80%)
	Married or domestic partnership	3 (12%)
	Divorced	1 (4%)
	Not specified	1 (4%)
Ethnicity	White	16 (64%)
	Hispanic	3 (12%)
	African American	1 (4%)
	Asian	3 (12%)
	Not specified	2 (8%)
Legal status	US citizen	23 (92%)
	Green Card holder	1 (4%)
	US Visa holder	1 (4%)
Type of medical school attended	US	21 (84%)
	Caribbean	1 (4%)
	Foreign	3 (12%)

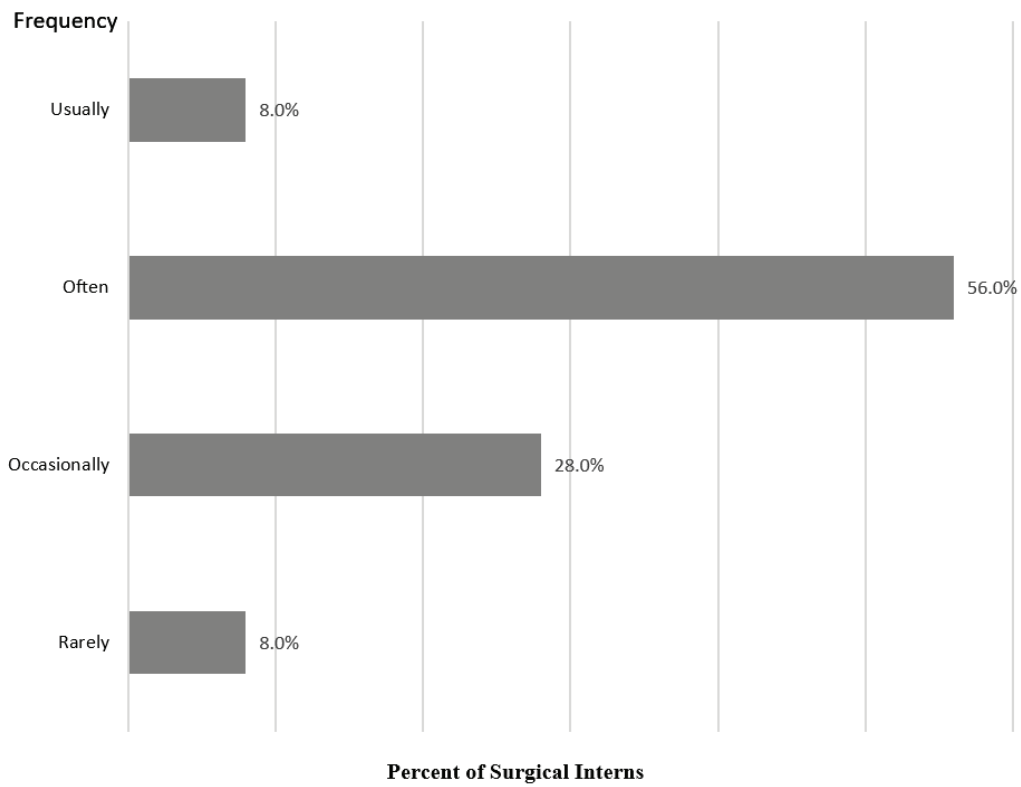


Figure 1: Feelings of overwork among surgical interns.

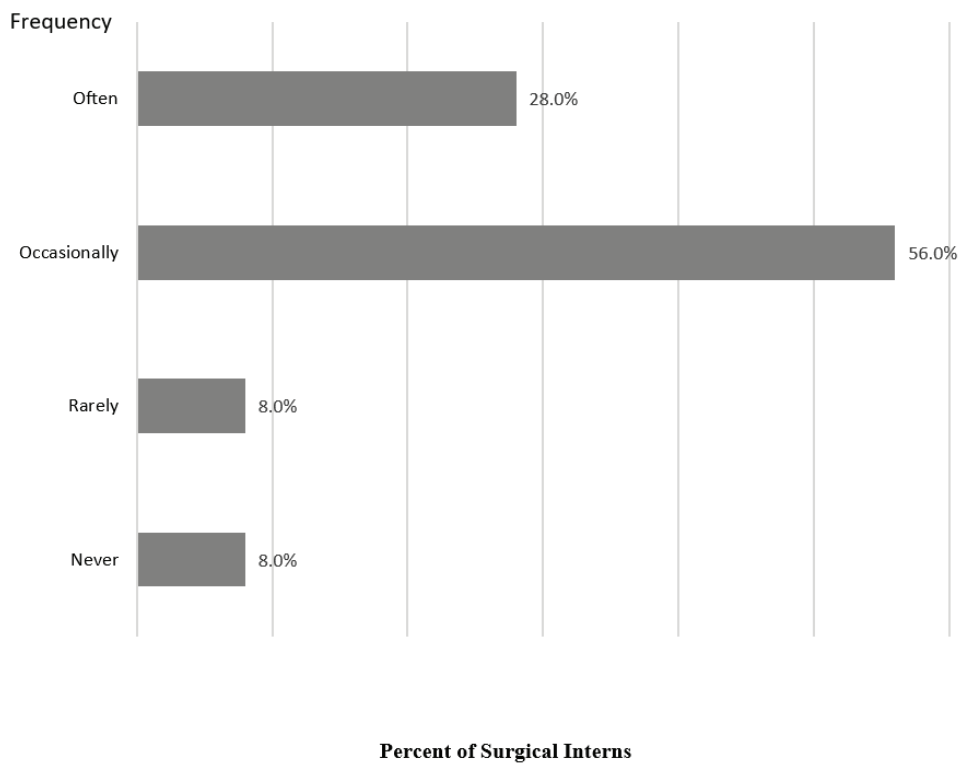
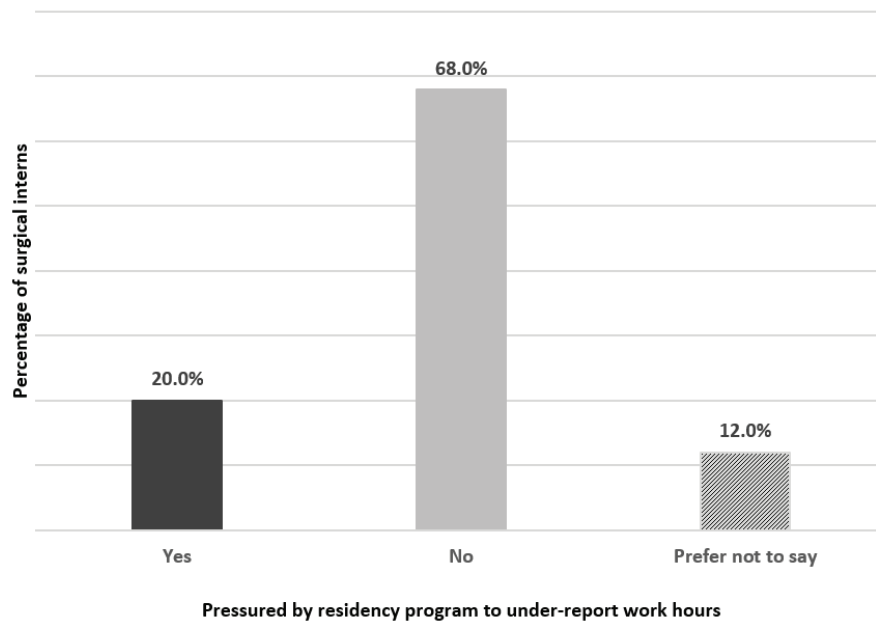


Figure 2: Surgical interns exceeding work-hour limitations.



**Figure 3:** Surgical interns feeling pressured by their program to under-report work hours.

Interestingly, one in five residents reported external pressure from their program to misrepresent their duty hours. This is in contrast to the high level of support interns perceive from their program leadership. We suggest that the culture within the respective surgical training program should encourage honest reporting of hours without penalizing or stigmatizing residents. Furthermore, surgical residents should be encouraged to report true working hours to highlight potential staffing or coverage gaps that may not already be apparent to program administrators, in an attempt to mitigate future violations. It is reassuring that despite the rigorous demands and schedules encountered by surgical interns, nearly all surgical interns had a positive year of training and look forward to the remainder of surgical training.

It is well demonstrated that anonymous reporting of work hours promotes honest reporting by internal medicine and general surgery residents [6]. Therefore, surgical residency programs could consider anonymous or blinded reporting of duty hours. Unfortunately, despite these possible interventions, self-reported duty hours remain at risk of selection and recall biases.

Like all survey studies, this study is prone to various limitations. First, the sample size in our study is small. Although the number of our survey participants is similar to other studies on education of surgical residents, a larger study at a national level would be important for improving the generalizability of our findings.

Second, with only 25 of 59 interns participating in our survey (42.4% response rate) we cannot account for the perspectives of the surgical interns who did not participate in our survey. Although we believe that the responses collected are representative of all surgical interns that received the survey, we cannot exclude significant differences between respondents and non-respondents.

Third, the anonymous nature of our survey prevented us from tracking the results back to individual residency programs to perform useful comparisons of reported duty hours among different programs, and identification of factors that might have contributed to the feeling of overwork among the surgical interns.

Despite these important limitations, we hope that our study will improve our understanding of the workload challenges encountered by surgical interns. Our findings should stimulate further discussions to improve duty hours implementation and compliance in surgical training.

## Conclusions

In this study we demonstrate that a large proportion of surgical interns have difficulties adequately balancing their life with the rigorous work of a surgical resident, and that nearly all surgical interns both violate and under-report their work hours. Duty hour regulations are important for helping surgical trainees maintain a healthy work-life balance, but their success depends on effective implementation and compliance. Understanding the reasons why many hardworking surgical trainees decide to under-report duty hours would help surgical educators develop innovative, non-punitive methods to improve work hour compliance. In the age of increasing awareness of surgeon burnout, residency programs should be proactive in fostering a culture that encourages honest reporting of hours worked and promotes an environment that both supports and stimulates productivity and wellness.

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## Supplement

### Survey questions

1. What is your age group?
  - a) 25-29 years old
  - b) 30-34 years old
  - c) 35-39 years old
  - d) 40 years or older
  - e) Prefer not to say
2. What is your gender?
  - a) Female
  - b) Male
  - c) Prefer not to say
  - d) Prefer to describe myself \_\_\_\_\_
3. What is your marital status?
  - a) Single, never married
  - b) Married or domestic partnership
  - c) Widowed
  - d) Divorced
  - e) Separated
  - f) Prefer not to say
4. What is your ethnicity?
  - a) White
  - b) Hispanic or Latino
  - c) Black or African American
  - d) Native American or American Indian
  - e) Asian/Pacific Islander
  - f) Prefer not to say
  - g) Other \_\_\_\_\_
5. What is your current legal status?
  - a) US citizen
  - b) Green Card holder
  - c) US Visa holder
  - d) Prefer not to say
  - e) Other \_\_\_\_\_
6. What type of medical school did you attend?
  - a) US medical school
  - b) Caribbean medical school
  - c) Osteopathic medical school
  - d) Foreign medical school
  - e) Prefer not to say
7. Do you have any advanced degrees in addition to M.D.? (Select all that apply)
  - a) MS
  - b) MPH
  - c) MBA
  - d) PhD
  - e) Other \_\_\_\_\_
  - f) None
8. What is your internship track?
  - a) Categorical general surgery
  - b) Designated preliminary
  - c) Non-designated preliminary
9. Have you had a mentor during the intern year?
  - a) Yes
  - b) No
10. If you have a mentor, what is the type of mentorship?

- a) Formal, assigned by the Department of Surgery  
b) Formal, self-selected from a list of program-approved mentors  
c) Informal  
d) Both formal and informal
11. Which factors are most important when selecting a mentor?  
a) Age  
b) Gender  
c) Ethnicity  
d) Current career status/prestige  
e) Research productivity  
f) Technical skills  
g) Reliability  
h) Surgical specialty  
i) Other \_\_\_\_\_
12. Which of the following best describes your mentor?  
a) Current surgery resident  
b) Junior faculty member  
c) Senior faculty member  
d) Program Director  
e) Section chief  
f) Department chair  
g) Other \_\_\_\_\_
13. Which of the following topics do you rely on your mentor for?  
a) Career planning  
b) Clinical training  
c) Research guidance  
d) Work/Life integration  
e) Finances  
f) Institutional politics  
g) Networking
14. What was the most common method of communicating with your mentor?  
a) Meeting in person  
b) Phone calls  
c) Phone texting  
d) Email  
e) Other \_\_\_\_\_
15. How often did you meet in person with your mentor?  
a) More than I would like  
b) About right  
c) Less than I would like
16. How helpful has the mentorship been for you during the intern year?  
a) Very helpful  
b) Somewhat helpful  
c) Not helpful at all
17. Were you given the option to choose a new mentor in case of failed mentoring?  
a) Yes  
b) No  
c) Prefer not to say
18. Would you feel comfortable reporting a failed mentorship to your program director?  
a) Yes  
b) No  
c) Prefer not to say
19. Did the effectiveness of your relationship with your mentor get periodically evaluated by the surgery program?  
a) Yes  
b) No  
c) Prefer not to say
20. How would you describe your overall transition from medical school to the surgical internship?  
a) Very Good  
b) Good  
c) Acceptable  
d) Poor  
e) Very Poor
21. In your opinion, what are the most significant challenges during the internship year?  
a) Adjusting to the rigors of the surgical trainee work  
b) Adjusting to a new institutional culture  
c) Finding the right mentor  
d) Making new friends  
e) Balancing work with life  
f) Financial stress of accommodating in a new environment  
g) Managing pre-existing personal relationships  
h) Other \_\_\_\_\_
22. How would you describe the support received from the surgery program at the start of your internship?  
a) Very Good  
b) Good  
c) Acceptable  
d) Poor  
e) Very Poor
23. Did you feel overworked during the intern year?  
a) Almost always  
b) Usually  
c) Often  
d) Occasionally  
e) Rarely  
f) Almost never  
g) Prefer not to say
24. How often did you exceed the work-hour limitations?  
a) Very frequently  
b) Frequently  
c) Occasionally  
d) Rarely  
e) Very rarely  
f) Never

- g) Prefer not to say
25. How often did you under-report the work hours in order to stay within the 80-hour workweek limits?
- a) Very frequently
  - b) Frequently
  - c) Occasionally
  - d) Rarely
  - e) Very rarely
  - f) Never
  - g) Prefer not to say
26. Did you ever feel pressured by the surgery program to under-report the work hours in order to comply with the 80-hour workweek rule?
- a) Yes
  - b) No
  - c) Prefer not to say
27. How many operations have you done during the intern year?
- a) Less than 20
  - b) 21-39
  - c) 40-59
  - d) 60-79
  - e) 90-99
  - f) 100 or more
  - g) Prefer not to say
28. Do you feel ready to become a PGY-2 surgery resident?
- a) To a great extent
  - b) Somewhat
  - c) Very little
  - d) Not at all
  - e) Prefer not to say
29. What impact did your intern year experience have on your career plans?
- a) It strengthened my determination to become a surgeon
  - b) It made me consider switching into a non-surgical career
  - c) It made me considering quitting medicine altogether
  - d) Did not have any impact
  - e) Prefer not to say
30. What do you think your surgery program could do to improve the experience of the new class of surgical interns?