

Half of Med School Graduates Beginning Surgical Residency Feel Unprepared



Written by
Skeptical Scalpel

A survey of 3,693 first- and second-year surgical residents found that 48.1% said medical school did not adequately prepare them for the rigors of surgical residency. Although the more overnight calls a student participated in, the more significantly likely they were to have felt adequately prepared for residency, only 51.6% reported taking call less than twice per month, as did 43.3% during sub-internships. However, one-third of those who took call more than four times per month still felt unprepared. Other factors limiting preparedness included rules and regulations limiting what students could do during clerkships and students acting as observers only when taking overnight call. Meanwhile, residents who felt well prepared for surgical training reported significantly fewer symptoms of emotional exhaustion, depersonalization, and burnout.

The paper, published in *JAMA Surgery*, surveyed residents who were training at hospitals that participated in the Flexibility in Duty Hour Requirements for Surgical Trainees (FIRST) trial.

A faculty member interview as part of the investigation noted that in the current culture, medical students were not allowed to write progress notes. A program director said, "I think that we've done a real disservice to the medical students at this point, giving them an improper perception of what residency means and what going into surgery means in general."

These findings did not surprise me. In one of my first blog posts in 2010, I wrote, "The third-year surgery rotation in medical school is not necessarily a good simulation of what it's like to be a surgical resident." The school I was with at the time had mandated that the students be allowed to go to bed at 11:00pm and only be awakened for major cases. I further explained this in a 2012 post, saying, "I believe a major cause [of attrition] is that medical students do not understand what surgical residency training is really like. In some schools, third-year [surgical] clerkships are as short as 4 to 6 weeks, and part of that time may be spent on clinic or subspecialty rotations." I also pointed out that many schools limited the amount of overnight call for students to once per week, resulting in "an unrealistic picture of what a surgical residency is like."

The authors of the *JAMA Surgery* paper concluded, "Adequate exposure to the necessary realities of surgical training and independent practice, particularly overnight call during the medical school clerkship, may [my emphasis] contribute to improved preparedness, lower attrition, and lower rates of burnout in general surgery residency."

I hope the paper is widely read by medical and surgical educators. ■



Contributor
Michael Silverman, MD
Division of Infectious Diseases
Department of Medicine
Western University
London, Ontario
Canada

The rate of infective endocarditis (IE) in people who inject drugs (PWID) has been rapidly increasing in recent years, explains Michael Silverman, MD. Dr. Silverman and colleagues hypothesized that the type of opioid being injected could be an integral part of the increased rate of IE. "We postulated that exposure to controlled-release hydromorphone could be associated with an increased risk of IE among PWID," he adds. To determine the effect

that injecting controlled-release hydromorphone could have on PWID, Dr. Silverman and colleagues conducted a retrospective cohort study.

Comparing IE Frequency

For a study published in *The Lancet Infectious Diseases*, the researchers used a large database to analyze 60,529 PWID. Previous research from the team suggested that sugars in controlled-release opioids can stabilize viral survival within injection equipment, leading to increased risk for HIV and hepatitis C transmission. Additionally, controlled release formulations require more handling than regular release formulations, which can lead to greater risk for

Staphylococcus aureus contamination, and the same sugars within the controlled release formulation can prolong *S. aureus* survival in injection equipment, putting patients at risk for bacteremia.

The study team estimated controlled-release hydromorphone exposure and risk of IE by first analyzing patient data in a population-level analysis, identifying whether they lived in regions with high ($\geq 25\%$) or low ($\leq 15\%$) hydromorphone prescription rates. Patients were then matched 1:1 by additional baseline characteristics to compare IE frequency. Patients with prescription data were analyzed to identify those who filled prescriptions for controlled-release or immediate-release hydromorphone and matched with patients who filled prescriptions for other opioids. Again, the two groups were compared for IE frequency.

Controlled-Release Hydromorphone & IE

Between April 2006 and September 2015, 733 (1.2%) patients had IE. "Patients living in high hydromorphone use areas were matched with patients in low hydromorphone use areas," explains Dr. Silverman. "With many patients obtaining their opiates from local diversion of prescriptions, this allowed us to look at local availability for injection. We identified 254 (1.6%) hospital admissions in PWID to be for IE in regions with high hydromorphone use, while 113 (0.7%) were among PWID in regions with low use. This approach controlled for total opioid prescribing within the local communities, and therefore, suggests that local community availability of this particular opioid was associated with IE incidence."

Through the patient-level analysis, 3,884 patients were matched (Table) to find the frequency of IE. Patients who filled prescriptions for hydromorphone had a higher rate of IE than those who filled prescriptions for other opioids (2.8% vs 1.1%). This association was seen in patients who had taken controlled-release hydromorphone (3.9% vs 1.1%; adjusted odds ratio, 3.3) but was not significant with immediate-release hydromorphone. "This confirms that the drug excipients and specific practices needed to inject the controlled release preparation predispose patients to IE," adds Dr. Silverman.

Protecting PWID

When considering next steps, Dr. Silverman believes avoiding prescribing controlled-release opioids could reduce the burden of infectious complications, such as HIV, hepatitis C, and IE. "Other controlled-release opioids also need to be studied to determine their ability to support bacterial and viral contamination in injection drug equipment," adds Dr. Silverman. "In light of ongoing diversion and misuse, the specific rates of infectious complications of various drugs when injected need to be clarified so that only those at lowest risk are prescribed. The details of patient practices associated with injection of drugs needs further study so that we can intervene more effectively in protecting our community." ■

Table Baseline Characteristics

The table shows baseline characteristics of matched patients prescribed non-hydromorphone opioids and those prescribed hydromorphone.

Demographics	Other opioids (n=3,884)	Hydromorphone (n=3,884)	Standardized difference
Age at cohort entry, mean (SD)	44.4 years (8.4)	44.4 years (8.4)	1%
Sex, n (%)			
Female	1,729 (44.5%)	1,679 (43.2%)	3%
Male	2,155 (55.5%)	2,202 (56.8%)	3%
Location, n (%)			
Urban	3,582 (92.2%)	3,582 (92.2%)	0%
Rural	302 (7.8%)	302 (7.8%)	0%
Missing data	<6	<6	0%
Socioeconomic status, n (%)			
1 (poorest)	1,753 (45.1%)	1,685 (43.4%)	4%
2	958 (24.7%)	960 (24.7%)	0%
3	534 (13.7%)	549 (14.1%)	1%
4	369 (9.5%)	436 (11.2%)	6%
5 (richest)	240 (6.2%)	227 (5.8%)	1%
Missing data	30 (0.8%)	27 (0.7%)	1%
Comorbidities, n (%)			
Alcoholism	312 (8.0%)	270 (7.0%)	4%
Bipolar disorder	84 (2.2%)	47 (1.2%)	7%
Chronic liver disease	386 (9.9%)	517 (13.3%)	11%
Congestive heart failure	164 (4.2%)	182 (4.7%)	2%
Coronary artery disease	35 (0.9%)	51 (1.3%)	4%
Depression or anxiety disorder, or both	963 (24.8%)	897 (23.1%)	4%
Hepatitis B	12 (0.3%)	25 (0.6%)	5%
Hepatitis C	917 (23.6%)	999 (25.7%)	5%
HIV	261 (6.7%)	286 (7.4%)	3%
Schizophrenia or other psychotic disorder	60 (1.5%)	37 (1.0%)	5%
Self-harm	705 (18.2%)	580 (14.9%)	9%
Medication use, n (%)			
Antibiotics	2,141 (55.1%)	2,178 (56.1%)	2%
Anticoagulants	13 (0.3%)	16 (0.4%)	1%
Antipsychotics	1,059 (27.3%)	1,033 (26.6%)	2%
Benzodiazepines	2,037 (52.4%)	1,959 (50.4%)	4%
Lithium	50 (1.3%)	41 (1.1%)	2%
Estimates of comorbidity, mean (SD)			
Unique drugs used in past 12 months	10.6 (5.6)	11.0 (6.0)	7%
Hospitalizations in past 12 months	2.1 (2.8)	2.4 (3.3)	10%
Emergency room visits in past 12 months	7.3 (10.6)	8.0 (11.1)	7%
Family physician visits in past 12 months	26.8 (25.5)	29.1 (26.9)	9%
Electrocardiograms, n (%)	897 (23.1%)	1,221 (31.4%)	19%

*Note: Standardized differences (SD) describe a difference between group means as a percentage of the pooled SD. SDs greater than 10% represent meaningful imbalances. To minimize the risk of re-identification, values of 5 or less are reported as <6.

Source: Adapted from: Silverman M, et al. *Lancet Infect Dis*. 2020;20(4):487-497.



Dealing With Non-Compliant Patients: Avoiding Liability

The first step in avoiding liability due to patient non-compliance is identifying that the patient actually is non-compliant. Then, ask about the reason for it and do what you can to counter it. Your record must reflect your attempt to determine what correctable issues underlie the non-compliance and what steps you took to counter it. If non-compliance is not solvable as a single issue and verbal reminders are not fruitful, you can consider a treatment contract, which breaks the compliance into specific acts of patient cooperation that may be easier to follow. Your last option is an "at risk" letter that states the specific non-compliant acts and their clinical consequences. This can include the warning that a failure to correct the non-compliance will result in termination from the practice. You should not create a "decline" note in which the patient signs their refusal to comply. You would be retaining the patient in your practice despite being unable to treat them as you believe is proper.

Your records need to demonstrate that the patient is being non-compliant rather than just being ill-informed. Descriptions of the patient's non-compliant conduct should state the fact of the non-compliance undeniably but without condemnatory or self-serving language. But it should not be so removed as to become meaningless in convincing a reviewer that you are not an appropriate target or in closing off patient claims that you never said something you actually did.

When the therapeutic relationship is irrevocably broken down and it is necessary for you to step away because the patient is actually preventing you from practicing medicine properly, you will have to terminate them from your practice. You will then have to consider abandonment. If you are going to take the maximum step against someone who is already in opposition to you, do so carefully. Non-compliance leading to no option but termination is a gradual process by definition and so an evaluator will want to see that it was handled that way.

You should also consider stating the reason for the termination in a letter. The general rule is to not give a specific reason, but here stating, "As we have discussed, and as outlined in the treatment contract that you agreed to, it was essential that you follow through on prescribed care. Due to your continued refusal to follow treatment guidelines, this practice will no longer be able to retain you as a patient as of (date)," may stop a retaliatory process before it starts.

This article was written by Dr. Medlaw, a physician and medical malpractice attorney.

Video Intervention Ups HIV Treatment & Adherence

Written by



Mary Spink Neumann, PhD
Division of HIV/AIDS Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
CDC



Aaron Plant, MPH
Vice President
Sentient Research



Andrew D. Margolis, MPH (CAPT, USPHS)
Division of HIV/AIDS Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
CDC



Stephen A. Flores, PhD
Division of HIV/AIDS Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
CDC

Evidence shows that patients with HIV who achieve and maintain a suppressed viral load are able to maintain their overall health and are unlikely to transmit HIV. Thus, simple, practical interventions to help achieve HIV viral suppression that are easy and inexpensive to administer in clinical settings are needed. For a study published in *AIDS Care*, we evaluated whether a brief video containing HIV-related health messages targeted to all patients in the waiting room improved treatment initiation, medication adherence, and retention in care, as well as whether assessing time points where patients stopped watching and missed embedded health messages could be used to refine the video.

We evaluated the medical outcomes of the "Taking Care of Me" video in a quasi-experimental trial in two HIV clinics in the southern US in 2016. Approximately 2,000 intervention patients were exposed during 10 months to a 29-minute video depicting persons overcoming barriers to starting treatment, taking medication as prescribed, and keeping medical appointments. Nearly 2,000 comparison patients had visited the clinics in the previous 10 months. Routinely collected EMR data were abstracted for patients seen during each study period. We used unobtrusive systematic observations for 8 hours at each of the clinics and a case management facility to assess patients' engagement with the video and identify frequently unwatched scenes. We triangulated the observations with the EMR data.

The video intervention was shown to be effective in increasing the number of patients prescribed treatment (60.3% vs 70.7%) and improvement in viral suppression (56.7% vs 62.7%), although there were mixed results between sites on this measure. No significant change in rates of return visits (77.5% vs 78.8%) were observed. The effects appear independent of each facilities' typical waiting times. Triangulation enabled us to identify specific scenes where low levels of engagement corresponded to lower-than-expected retention in care outcomes and edit these scenes to improve engagement and, potentially, intervention efficacy. This feasible, easy-to-deliver video intervention requires minimal resources to deliver and may be appropriate for adoption by facilities serving patients with HIV. ■