



Notable Grand Rounds
of the
Michael & Marian Ilitch
Department of Surgery

Wayne State University
School of Medicine

Detroit, Michigan, USA

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**THE PAST, PRESENT AND FUTURE
OF WELLNESS IN SURGERY**

June 5, 2024



About Notable Grand Rounds

These assembled papers are edited transcripts of didactic lectures given by mainly senior residents, but also some distinguished attending and guests, at the Grand Rounds of the Michael and Marian Ilitch Department of Surgery at the Wayne State University School of Medicine.

Every week, approximately 50 faculty attending surgeons and surgical residents meet to conduct postmortems on cases that did not go well. That “Mortality and Morbidity” conference is followed immediately by Grand Rounds.

This collection is not intended as a scholarly journal, but in a significant way it is a peer reviewed publication by virtue of the fact that every presentation is examined in great detail by those 50 or so surgeons.

It serves to honor the presenters for their effort, to potentially serve as first draft for an article for submission to a medical journal, to let residents and potential residents see the high standard achieved by their peers and expected of them, and by no means least, to contribute to better patient care.

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The Past, Present and Future of Wellness in Surgery

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Introduction

The history of surgical residency programs in the United States is marked by a gradual recognition of the critical importance of resident well-being and the role of duty hour regulations in promoting patient safety and quality of care. From the early days of residency established by William Osler in 1889, when residents lived in the hospital and earned a modest stipend, to the current era of 80-hour work week limits and 16-hour shift restrictions for interns, the landscape of residency training has evolved significantly.

This paper traces the key milestones in this evolution, including the establishment of the ACGME, landmark studies on the effects of long work hours, high-profile

cases like Libby Zion that catalyzed public attention, and recent systematic reviews and nationwide cohort studies demonstrating the patient safety benefits of duty hour limits.

The paper also delves into the day-to-day challenges faced by surgical residents, the impact of communication patterns on resident well-being, and innovative programs developed to support residents and promote resiliency. By examining this history and the current state of surgical residency, we gain valuable insights into the ongoing efforts to optimize the learning environment and ensure the best possible outcomes for both residents and patients.

The Beginnings

The history of residency programs in the United States dates back to 1889 when William Osler established the first residency at Johns Hopkins Hospital. At that time, residents lived in the hospital and earned \$100 a year in addition to room and board. In 1910, the American Medical Association (AMA) was formed and began reviewing and approving residency programs. By 1950, individual residency review committees were established for different specialties, with surgery and medicine being among the first specialties to form their own peer review and accreditation processes independently.

The Formation of LCME and ACGME

In 1972, the Liaison Committee on Medical Education (LCME) was formed, followed by the Accreditation Council for Graduate Medical Education (ACGME) in 1981. The ACGME consisted of five members: the AMA, the American Board of Medical Specialties, the American Hospital Association, the Association of American Medical Colleges (AMC), and the Council of Medical Specialty Societies.

The ACGME developed general requirements for accredited programs and specialty-specific program requirements. Although resident work hours were not specifically referenced at this time, the ACGME emphasized the importance of supervision and a conducive learning environment. They required a well-organized and well-qualified teaching staff, with an educational committee responsible for the organization, supervision, and direction of the residency program.

The ACGME stated that the effectiveness of a residency program largely depends on the quality of supervision and organization, with the responsibilities lying within the department heads and a representative committee of the medical staff.

Early Studies on the Effects of Long Work Hours

In 1971, the first formal study in medicine investigated the effects of long work hours on resident performance.¹ The study compared post-call residents to those not post-call using standardized tests and assessments of potential life-threatening arrhythmias. The post-call residents made more errors than their well-rested colleagues. Similar studies conducted in the military and with college volunteers also demonstrated the detrimental effects of sleep deprivation on performance across a wide range of tasks.

Specialty-Specific Statements and the Regulation of Work Hours

In 1980, medicine and pediatrics became the first specialties to include statements in their program requirements emphasizing the need for a balance between education, service demands, and time off for personal pursuits and educational activities. New York became the first state to regulate resident work hours in 1984, following the tragic death of Libby Zion, a college freshman who died within eight hours of admission to the emergency room. Zion was under the care of PGY-1 and PGY-2 residents, and her death was initially attributed to an infection. However, upon further review, it was discovered that she had been given Demerol and phenelzine in close proximity, leading to

¹ Friedman RC, Bigger JT, Kornfeld DS. The intern and sleep loss. *N Engl J Med*. 1971 Jul 22;285(4):201-3. doi: 10.1056/NEJM197107222850405. PMID: 5087723.

the belief that she had died from serotonin syndrome.

The Libby Zion Case and Its Impact on Residency Education Reform

Libby Zion's father, a newspaper columnist, initiated a campaign targeting long resident work hours and inadequate supervision. The case went to a grand jury in 1986, which concluded that Zion's death was related to 36-hour shifts and inadequate supervision. Despite a doctor's testimony defending long work hours, stating that it would be unrealistic to expect residents to absorb the realities of caring for fragile and needy patients if their working hours were fixed according to an arbitrary schedule, the grand jury called for reform in residency education, including the regulation of resident work hours and appropriate supervision.

In response to the grand jury's findings, the New York Health Commissioner established the Bell Commission, an advisory committee that released its recommendations in 1987. The commission recommended an 80-hour work week limit, a maximum of 24 hours on duty, and the requirement that a senior physician always be present in the hospital.

New York Regulations and Compliance

In 1989, five years after Libby Zion's death, New York became the first state to regulate resident work hours. However, compliance visits that year revealed that over 60% of hospitals were in violation of these regulations. A study investigating the cost of limiting resident hours estimated that it would require approximately

\$358 million to support adequate staffing in the state of New York.

ACGME Task Force on Resident Hours and Supervision

In 1987, the ACGME formed a task force to address resident hours and supervision. The task force focused on three areas: the adequacy of resident supervision, resident schedules and work hours, and the need for change in resident education. At the 1988 national meeting, the task force released its preliminary recommendations,² emphasizing that education is the primary goal of residency and that there is a relationship between the quality of training and the quality of medical care provided by physicians after graduation. It acknowledged the significant role of residents in continuity of care but stressed that the ultimate responsibility for patient care lies with the attending physicians.

The task force recommended that resident schedules maximize educational experiences while allowing residents to avoid stress, fatigue, and depression. It also suggested that clinical support services be available 24/7 to residents, including patient transport services, an issue that persists years later. The recommendations included one day off every seven days on average over four weeks, no more than every third night on call on average over four weeks, adequate backup for unexpected patient care needs that may lead to resident fatigue, institutional policies to ensure adequate supervision of all residents, and reliable methods for communicating with attending physicians.

² Original ACGME report is not available, but was referenced in McCall TB. The impact of long working hours on resident physicians. *N Engl J Med.* 1988 Mar 31;318(13):775-8. doi: 10.1056/NEJM198803313181237. PMID: 3347223.

AAMC Position and Recommendations

In 1988, the Association of American Medical Colleges (AAMC) released a similar position statement, advocating that each hospital create policies to ensure that resident education enhances the quality of care provided to patients.³ The AAMC agreed with the proposed 80-hour work week and recommended limiting moonlighting by including those hours in the total 80-hour workweek. They suggested that these changes be implemented gradually to avoid compromising patient care and that teaching hospitals be reimbursed for the incremental costs resulting from these changes.

Institute of Medicine Report: "To Err is Human"

In 1999, the Institute of Medicine released a report titled "To Err is Human,"⁴ which highlighted the fact that nearly 100,000 deaths per year were attributed to medical errors, surpassing deaths from car accidents, AIDS, or breast cancer at the time. Studies conducted in Colorado, Utah, and New York indicated that approximately 3% of inpatients experienced adverse events, with 9% of these events being fatal and about half considered preventable.

The report focused on the stigma surrounding medical errors and their consequences, emphasizing the need to address systemic issues rather than placing blame on individuals. Suggestions in-

cluded changing the labeling or packaging of high-risk drugs and drugs with similar names, addressing training issues for residents and the work-rest cycle, implementing process improvements for relief or replacement of staff, and standardizing medical equipment across hospitals.

The ACGME explored various sources of errors in the resident educational environment and once again suggested focusing on limiting resident hours and enhancing supervision to promote patient safety, a recurring theme throughout the years. The ACGME stated that patients have the right to expect competent care in all phases of an acute illness, and residents have the right to expect competent supervision in all aspects of their education where they interface with patients.

ACGME Compliance Data and Efforts to Regulate Duty Hours

In 1999, the ACGME released their first compliance data regarding resident work hours, revealing that 20% of programs were in violation. At this time, 30% of medicine programs, 29% of orthopedic programs, and 36% of surgery programs were non-compliant. The following year, the total number of programs in violation dropped to 8%, although surgery programs remained unchanged at 35%. By 2001, surgery programs improved slightly, with an 18% violation rate.⁵

In 2001, a Michigan representative became the first to attempt federal regula-

³ Mentioned in Petersdorf RG, Bentley J. Residents' hours and supervision. *J Gen Intern Med.* 1989 Jan-Feb;4(1):96-8. doi: 10.1007/BF02596496. PMID: 2915283.

⁴ Kohn LT, Corrigan JM, Donaldson MS, eds. *To Err is Human: Building a Safer Health System.* Washington, DC: National Academy Press; 1999.

⁵ Landrigan CP, Barger LK, Cade BE, Ayas NT, Czeisler CA. Interns' compliance with accreditation council for graduate medical education work-hour limits. *JAMA.* 2006 Sep 6;296(9):1063-70. doi: 10.1001/jama.296.9.1063. PMID: 16954485.

tion of resident duty hours, and the Senate introduced similar legislation in New Jersey. The AMA released a statement that year, echoing their position from 13 years prior, encouraging the ACGME to enforce work hour guidelines with a maximum limit and to develop mechanisms for quickly correcting non-compliance. The AMA also stated their intention to facilitate discussions with legislators and investigate the enforcement of current duty hour standards.

The American College of Surgeons (ACS) released a statement emphasizing the principle that all patient care provided by residents must be safe and supervised, and that quality patient care, both in the present and future, depends on quality graduate education. The ACS stressed the importance of monitoring, modifying, and optimizing the work environment to achieve this goal.

ACGME Revises Duty Hours and a Prospective Randomized Trial

In 2003, the ACGME revised the duty hour regulations, allowing residents to work up to 24 hours plus an additional six hours for transition and education. They maintained the 80-hour weekly limit and the requirement for one day off every seven days and no more frequent than every third night on call. The ACGME also stipulated that residents should have 10 hours of rest between shifts and that no new patients should be accepted after 24 hours of continuous duty.

A prospective randomized trial conducted at Brigham and Women's Hospital compared the rates of serious medical errors

made by interns in ICU-level care.⁶ The study compared a traditional Q3 24-hour shift schedule to an intervention schedule with reduced hours, no 24-hour shifts, a maximum of 16 hours per shift, and no more than 63 hours per week. Two nurses reviewed charts for errors, and six attending physicians performed direct observation. Although the authors claimed that two of the six attending physicians were blinded to the interns' group assignments, it seems obvious that the observers could deduce which interns were working more hours and overnight shifts. Blinded reviewers categorized the events based on the classifications listed in the study.

The study analyzed data from over 2,200 patients and found that interns on the traditional schedule with 24-hour shifts made 35.9% more serious medical errors compared to those on the intervention schedule. They also found twice as many non-intercepted serious errors, more medication errors, and a 5.6 times higher likelihood of serious diagnostic errors among interns on the traditional schedule.

The authors discussed the potential implications of reducing work hours, noting that it would result in an increased workload for the remaining residents and could lead to a higher number of hand-offs, which can introduce their own errors. They considered the possibility of implementing a night float system at the hospital but acknowledged that residents on night float typically have less familiarity with patients and are responsible for covering more patients. Additionally, residents working exclusively at night can still

⁶ Landrigan CP, Rothschild JM, Cronin JW, Kaushal R, Burdick E, Katz JT, Lilly CM, Stone PH, Lockley SW, Bates DW, Czeisler CA. Effect of reducing interns' work hours on serious medical errors in intensive care units. *N Engl J Med*. 2004 Oct 28;351(18):1838-48. doi: 10.1056/NEJMoa041406. PMID: 15509817.

be sleep-deprived and prone to errors. Despite the compelling data, the hospital in this study chose not to switch to a night float system and maintained the 24-hour shift schedule.

Systematic Review of Studies on Reducing or Eliminating Resident Work Shifts Over 16 Hours (1950-2008)

A systematic review of studies from 1950 to 2008 investigated the effects of reducing or eliminating resident work shifts exceeding 16 hours.⁷ The review focused on three areas: quality of life, sleep, and fatigue; resident education; and patient safety and quality of care.

Quality of Life, Sleep, and Fatigue

In a program implementing a night float system, no difference was found in anxiety or hostility scores, although residents on night float scored lower on depression scales on average. A surgery program switching from Q3 to Q4 night call reported increased motivation among residents and decreased emotional exhaustion. An OB/GYN program with less frequent call noted increased program satisfaction but no changes in overall sleep, exercise, or time to read.

Resident Education

A medicine program comparing Q3 call to 14-hour shifts found no difference in In-Service Exam scores. A surgery program with a 25% reduction in call reported no difference in absolute scores but an increased number of chief cases, as residents were not post-call for cases. However, another program comparing Q3 to Q4 24-hour call found no difference in the total number of chief cases.

Patient Safety and Quality of Care

A surgery program transitioning from Q4 to Q6 call reported no change in complication or mortality rates. A level one trauma center with a 50% reduction in 24-hour call for PGY-4 and PGY-5 residents observed a 31.9% decrease in mortality for trauma and acute care surgery patients. A medicine program comparing traditional call to 14-hour shifts noted a decreased length of stay for patients and a reduction in medication errors.

The systematic review concluded that reducing or eliminating resident work shifts exceeding 16 hours did not adversely affect resident education and was associated with improvements in patient safety and resident quality of life in most studies.

Institute of Medicine Review and 16-Hour Shift Limit for Interns (2011)

In 2011, the Institute of Medicine reviewed data and declared it unsafe for residents to work more than 16 hours without sleep. As a result, interns were restricted to 16-hour shifts. Some expressed concerns that resident education would be negatively impacted and worried about the increased number of handoffs, which can be error-prone. Additionally, the total number of residency spots was not increased to accommodate the change. Despite these concerns, several studies demonstrated that the 16-hour shift limit for interns did not impact hospital mortality or post-surgical mortality. In 2017, the limitation on intern shifts was rescinded.

⁷ Reed DA, Fletcher KE, Arora VM. Systematic review: association of shift length, protected sleep time, and night float with patient care, residents' health, and education. *Ann Intern Med.* 2010 Dec 21;153(12):829-42. doi: 10.7326/0003-4819-153-12-201012210-00010. PMID: 21173417.

Prospective Nationwide Cohort Study on the Impact of Work Hour Limits on Patient Safety Outcomes (2002-2017)

A prospective nationwide cohort study investigated the impact of work hour limits on patient safety outcomes directly reported by residents.⁸ The study compared data from five academic years prior to the 16-hour shift limit (2002-2007) and three years after the limit (2014-2017). Participants were invited via email, and those who consented completed a baseline survey on demographics in the first month, followed by monthly reports on the number of 24-hour shifts, hours spent caring for patients, and total work hours.

The self-reported primary outcome was the number of significant medical errors in the past month. Participants were asked if they believed they had made a significant medical error, regardless of whether an adverse patient outcome occurred, and if they believed fatigue contributed to the error. They also reported the number of errors and the resulting patient outcomes. Additionally, participants were asked how many times they nodded off or fell asleep during specific patient care activities, such as during surgery or while talking to or examining patients.

The prospective nationwide cohort study had a substantial number of residents respond, with 9% of all residents participating in the first cohort and 18% in the second cohort after the intern work hour limitations were implemented. Among those who consented, three-fourths provided data, as indicated by the asterisks in the provided table. The second group (2014-

2017) had a lower proportion of female participants compared to the first group.

The study found that the average weekly work hours in the second group were 62, compared to 71 in the first group prior to the implementation of the 16-hour shift limit for interns. This difference was statistically significant. However, the hours engaged in actual patient care were similar in both groups, averaging 49 hours per week. The perceived stress levels were also equivalent between the two groups. While the overall work hours decreased and participants reported getting more sleep, the hours dedicated to patient care and stress levels remained similar.

The study examined different types of errors, including attentional failures such as nodding off during patient rounds, talking to patients, or during surgery. The first group reported more attentional failures, medical errors, preventable adverse events, and fatal events compared to the second group, all of which were statistically significant. When stratifying the results based on the number of hours worked (less than 60, 60-70, 70-80, or more than 80), the study found that working even one 24-hour shift increased the risk of an adverse event. Moreover, there was a dose-dependent increase in safety events associated with the number of hours worked.

The study's discussion highlighted that PGY-1 residents reported making fewer significant medical errors after the implementation of the 16-hour shift limit. While there were previous concerns about limit-

⁸ Silber JH, Bellini LM, Shea JA, Desai SV, Dinges DF, Basner M, Even-Shoshan O, Hill AS, Hochman LL, Katz JT, Ross RN, Shade DM, Small DS, Volpp KG, Bellini LM; iCOMPARE Research Group. Patient Safety Outcomes under Flexible and Standard Resident Duty-Hour Rules. *N Engl J Med*. 2019 Mar 7;380(10):905-914. doi: 10.1056/NEJ-Moa1810642. Epub 2019 Mar 6. PMID: 30855740; PMCID: PMC6581241.

ing hands-on training due to reduced work hours, the study, which included over 20,000 responses, showed that the hours spent on patient care remained unchanged. However, the authors acknowledged the difficulty in determining the exact extent of an intern's impact on patient care, as they typically work as part of a team.

The study concluded that the policy eliminating PGY-1 shifts exceeding 16 hours was associated with a substantial reduction in harmful and fatal medical errors reported by the resident physicians themselves. Extended duration shifts were associated with significant and harmful medical errors even after the policy was implemented. The authors emphasized the need for surveillance efforts, especially now that national regulations allow shifts of up to 28 hours for first-year physicians.

Comparison to Work Hour Limitations in Other Industries

The airline and trucking industries have more aggressive work hour restrictions compared to those in the medical field, despite the fact that physicians operate on humans.

Sleep Deprivation and Its Effects

Studies have shown that being awake for 17 hours is similar to having a blood alcohol concentration (BAC) of 0.05, while being awake for 24 hours is comparable to a BAC of 0.10, which is above the legal driving limit in my state (Michigan) (0.08). Ride-sharing services like Uber or Lyft to commute to and from work, rather than driving while sleep-deprived, is advisable, as I can attest through the personal experience of driving through a red light and

totaling my car. Receipts for ride-sharing services are reimbursable and are not deducted from the resident's educational fund.

Resident Wellness and the American College of Surgeons Bulletin

The American College of Surgeons released a bulletin addressing resident wellness, with an introduction that many residents can relate to.⁹ The introduction describes a day in the life of a junior surgery resident, highlighting the numerous challenges and stressors they face. I have adapted the ACS introduction to reflect my own experience as a junior surgery resident:

A Day in the Life of a Junior Surgery Resident

The resident wakes up at 4:30 am to a dark morning and drives to work. S/he performs a chart check and notes pertinent data for the team list. The chief resident, exhausted from being called all night, is irritated that information is missing from the list and chides the junior resident to be more thorough. During pre-rounding with the team, the nursing staff are annoyed that their 6 am pages and orders have not yet been addressed.

The resident rushes to the pre-op holding area to obtain consent from a patient who is annoyed that s/he has not spoken to the attending and wants assurance that the attending, not a resident, will perform the operation. The registration staff informs the resident that they cannot look at or consent the patient until they have been registered.

The resident hurries to write notes and place orders from pre-rounding as the pa-

⁹ American College of Surgeons. Statement on Resident Wellness. Bull Am Coll Surg. 2018 Aug;103(8):16-17.

tient is rolled into the operating room. As s/he finishes up and starts responding to pages, the attending walks in and is peeved that the patient isn't positioned or prepped yet. During the procedure, the attending allows the resident to perform some portions of the operation but takes over at the critical portion without explaining why or offering suggestions on how to improve the resident's technique.

The resident's pager goes off multiple times, and the circulating nurse's sighs make it clear that s/he is irritated about the resident's answering the pages. The resident scrubs out and rushes to finish the brief post-op note and orders while returning several more pages. The anesthesia team is now irritated that the resident is sitting at a computer instead of helping to transfer the patient to the PACU. The resident leaves the paperwork incomplete and goes to the PACU with the patient.

Next, the resident runs to see a consult, checks on a few post-op patients, completes the pre-op for the next patient, and returns to the OR in time to prep and position the patient to avoid upsetting the attending again. The resident notifies the chief resident of the consult and the plan but doesn't hear back until s/he is scrubbed in. Upon scrubbing out, the chief is annoyed that the resident didn't meet with her or him to see the consult. The attending wants to round, so the resident informs the chief, and they finalize the consult plan together after rounds.

The on-call intern sends a text at 7 pm expressing concern about getting paged about patients whom the resident has yet to discharge. The resident responds to

the pages and finishes notes and orders. At 9 pm, the resident finally signs out and heads home in the dark with reading to do for the next day, neglecting food, exercise, or any other form of self-care. The resident needs to vent but hasn't spoken to friends or family in a week and lacks the time and energy to make those phone calls. Instead, s/he finishes the required reading, get four hours of sleep, and wake up at 4:30 am to repeat the cycle.

The Impact of Communication on Resident Wellness

It should be emphasized that nonverbal and verbal communication is highly noticeable and directly affects professional lives. In an ACS presidential address, Dr. Taylor Revell discussed the romantic or heroic view of the surgical culture of strength and invincibility. Even more flawed is the assertion that a surgeon who allows themselves to be vulnerable is unworthy of being a trusted and respected colleague.¹⁰

The article reviewed the effect of communication on resident wellness and offers evidence-based solutions to encourage transparency and disrupt the culture of silence in a positive manner. The first topic discussed is the power of positive self-talk. Cognitive Behavioral Therapy (CBT) is a method for identifying self-talk and reframing these statements into more positive thoughts. CBT is used to treat mental health conditions and has also been shown to improve sports performance.

¹⁰ Article citation not found, but see Britt LD. Vulnerabilities and Opportunities. Bull Am Coll Surg. 2010 Nov;95(11):8-13 for a discussion of vulnerability in the context of surgical leadership and the surgical profession.

The Power of Positive Self-Talk and Instructional Self-Talk

A 1985 study examined the impact of positive self-talk on performance.¹¹

Participants were divided into three groups and asked to throw darts. One group was instructed to say "I can do this" before throwing the dart, another group was told to say "I cannot do it," and the third group remained silent. The results showed that the group using positive self-talk had statistically higher accuracy in throwing darts compared to the other two groups.

Residents might consider applying this technique by saying "I can do this operation" before entering the operating room or "I'm going to pass outside your oral boards bulletin boards." Instructional self-talk has been shown to have a greater impact on fine motor skills and gross motor tasks in personal communications.

Communication Between Nurses and Surgical Residents

Despite the 80-hour work week limitation, most of a resident's time is spent at the hospital. A 2016 study investigated the communication between nurses and surgical residents.¹² The study found that surgical residents perceived nurses as territorial and disrespectful of their clinical knowledge, while nurses felt that residents were inattentive to clinical concerns and had a poor understanding of nurses' roles on the team. Participants in the

study attended an eight-hour inter-professional training, which improved attitudes in both groups and provided clarity on team roles. The study identified several guides to success, including being available, developing positive relationships, fostering a collaborative environment, and respecting others' training and expertise.

Communication Patterns Between Surgeons and Other Physicians

The article also examined communication patterns between surgeons and other physicians, finding that surgeons tended to exhibit more aggressive verbal communication. The presenter notes that this is a common experience among residents.

Communication Between Residents and Patients

The article discussed communication between residents and patients, highlighting a common assumption that the doctor hasn't rounded until the attending is present. The presenter, a female resident, shared her experience of patients looking to the male medical student for the day's plan, even though she was the chief resident who performed the operation. Several studies using simulated models to assess and intervene in resident-patient interactions found that senior residents tended to score higher, suggesting that communication skills improve over time. The article emphasized the importance of early assessment of com-

¹¹ Weinberg, R. S. (1985). The effects of positive and negative thinking on performance in an achievement situation. *Cognitive Therapy and Research*, 9(5), 479-492. See also Van Raalte, J. L., Vincent, A., & Brewer, B. W. (2016). Self-talk: Review and sport-specific model. *Psychology of Sport and Exercise*, 22, 139-148. doi:10.1016/j.psychsport.2015.08.004, which reviews the literature on self-talk and its impact on sports performance, including a study by Dagrou, Gauvin, and Halliwell (1992) that examined the effects of self-talk on dart-throwing performance.

¹² Cochran, A., Elder, W. B., & Neumayer, L. A. (2016). Characteristics of effective collaborative relationships between physicians and nurses - An integrative review. *Journal of Surgical Education*, 73(6), 974-981. doi:10.1016/j.surg.2016.07.005

munication skills and noted the unfortunate elimination of the Step 2 Clinical Skills (CS) exam, which previously assessed communication skills.

The Impact of Communication Failures on Residents and Patients

When communication fails, both patients and residents can be negatively affected. During rounds, plans are typically made, and the most junior resident is often responsible for completing orders and writing notes. However, they may not have the time to ask necessary questions for further clarity. Senior residents are busy managing rounds and other responsibilities, which can lead to failed learning opportunities, patient harm, and potentially self-harm.

Physician Depression, Suicide, and Barriers to Seeking Help

The rates of depression and death by suicide are higher among physicians compared to the general population, with approximately 300 to 400 deaths per year. Risk factors include increased work demands, sleep deprivation, poor nutrition and fitness, desensitization to illness and death, increased administrative oversight, access to medications, and burnout. The presenter highlights the impact of desensitization, citing an example of a resident who had to pronounce a patient's death and then attend a wedding appointment within an hour.

An American College of Surgeons survey on suicidal ideation found that 7% of respondents expressed suicidal ideation in the last 12 months, but only 26% sought help. Barriers to finding help include the stigma of mental illness, concern for negative effects on licensure and insurance coverage, and the perception that others will find them less competent. As a result,

many people suffer in silence, missing opportunities to connect with others who have similar experiences and learn about available resources.

Although 40-50% of those who die by suicide have seen a primary care doctor within a month of their death, and 70% within one week, the majority did not discuss their symptoms, suicidal ideation, or plans. This highlights the importance of prompt conversation and commiseration. The presenter believes that having debrief groups, which will be discussed later in the context of their program, is crucial. Sharing experiences is the first step in identifying stress and reducing stigma.

Stanford's Balance in Life Program

In response to a surgical resident who died by suicide shortly after graduation, Stanford created a Balance in Life program.

The program provided residents with 24-hour access to help, snacks, and drinks, as well as a guide to the city. They also offered scheduled group counseling, senior-to-junior resident mentors, and class representatives who could bring attention to those in need. Additionally, the program sponsored group social events.

While there was no significant difference in burnout or general well-being after the implementation of this program, there were generally more positive responses on the questionnaire, and most residents who attended the counseling sessions found value in debriefing with others.

Arizona's Energy Leadership Wellbeing and Resiliency Program

In Arizona's Energy Leadership Wellbeing and Resiliency program, residents attended monthly interactive sessions dur-

ing protected time, learning about leadership, team building, and communication. Although there was no significant decrease in burnout, the components of burnout, such as emotional exhaustion and perceived stress, did improve. After implementing this program, the ACGME survey satisfaction increased from 80% to 96%.^{13,14,15,16}

Conclusion

The history of duty hour regulations in surgical residency programs illustrates the complex interplay between resident well-being, patient safety, and the demands of surgical training. While early residency programs often required grueling work hours and minimal supervision, a growing body of evidence has demonstrated the detrimental effects of sleep deprivation and excessive workload on resident performance and patient outcomes. High-profile cases and influential reports, such as the Libby Zion case and the Institute of Medicine's "To Err is Human," have served as catalysts for change, leading to the implementation of work hour limits and increased supervision requirements by the ACGME.

However, the challenges faced by surgical residents extend beyond work hours alone. Communication breakdowns, stigma surrounding mental health, and the unique stressors of surgical training can all take a toll on resident well-being. Innovative programs, such as Stanford's Balance in Life program and Arizona's Energy Leadership Wellbeing and Resiliency program, have shown promise in supporting residents and promoting resiliency. As the surgical community continues to grapple with these issues, it is clear that a multifaceted approach is needed - one that encompasses not only duty hour regulations but also initiatives to foster positive communication, reduce stigma, and provide robust support systems for residents. By learning from the past and embracing evidence-based strategies for enhancing resident well-being, surgical residency programs can cultivate a learning environment that optimizes both patient care and the professional development of the next generation of surgeons.

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¹³ Schmitz, G. R., Clark, M., Heron, S., Sanson, T., Kuhn, G., Bourne, C., Guth, T., Cordover, M., & Coomes, J. (2012). Strategies for coping with stress in emergency medicine: Early education is vital. *Journal of Emergencies, Trauma, and Shock*, 5(1), 64–69. <https://doi.org/10.4103/0974-2700.93117>

¹⁴ Stanford Medicine. (n.d.). Balance in Life Program. <https://med.stanford.edu/gme/housestaff/all-topics/balance-in-life.html> for an overview of the Balance in Life program at Stanford, including its mission, resources, and events.

¹⁵ Sargent, M. C., Sotile, W., Sotile, M. O., Rubash, H., & Barrack, R. L. (2009). Quality of life during orthopaedic training and academic practice. Part 1: orthopaedic surgery residents and faculty. *The Journal of Bone and Joint Surgery. American Volume*, 91(10), 2395–2405. <https://doi.org/10.2106/JBJS.H.00665>

¹⁶ Sargent, M. C., Sotile, W., Sotile, M. O., Rubash, H., & Barrack, R. L. (2012). Managing stress in the orthopaedic family: avoiding burnout, achieving resilience. *The Journal of Bone and Joint Surgery. American Volume*, 94(8), e40. <https://doi.org/10.2106/JBJS.J.01252>

BOX 1: Detroit Medical Center Surgical Residency Program Initiatives

Our wellness committee is very active and organizes various social events, including a welcome picnic at the end of June, Friendsgiving hosted by residents, baseball game outings, and journal clubs. The program has also started hosting baby showers for residents. I am grateful that our program sends chief residents to the American College of Surgeons (ACS) meeting, as not all programs do this, and it serves as a great bonding experience for the class.

The program has also implemented a fun activity where attendings share pictures of their children, and residents played a game of guessing who the children belong to. Additionally, our program has a senior-intern mentorship system and has started awards, such as the "Cut Above the Rest" award for those who have gone above and beyond their regular job descriptions and the "Absurdity Award" for the ridiculous things residents get paged about, providing an opportunity for everyone to laugh together.

The program has also started an "Over 18 Between the Scalpels" newsletter and an Instagram account. In the future, we plan to implement SACKS (a surgical skills assessment) and debrief support groups, which I strongly believe should be done. I also suggest bringing back a "Pit Bust Bingo" game, which I found enjoyable. In this game, residents who completed the

BOX 2: Comedic Relief: General Rules for Residency Success

1. Eat when you can, sleep when you can, and laugh when you can.
2. Don't drive if you're too tired. Find a group of friends to keep you sane. I am grateful for the people who have kept me sane throughout the years.
3. Your chief should not be the first person in the building. I estimate that half the time, I am the first one in, arriving 30 minutes early to review my list. If your chief is coming in before you at a reasonable time, try to arrive a little earlier so that you're prepared for any questions they may ask.
4. Surgery is a team sport. If a resident is not working two weekends in a row, someone else has to do their work. I have had accusatory requests from people who have already booked flights—please don't do this to your new chief. One resident informed me at noon that they had to leave at 2 pm that day to catch a flight. Tell your chief at least a day in advance.
5. Switching calls caused a significant number of duty hour violations. Let your chief know about call switches, as chiefs create many of the days-off schedules, and many violations could have been avoided by running the changes by the chief.
6. Residency is a job, and duty hours are your own responsibility to track. If someone is forcing you to stay past your hours, you need to speak up and let people know.
7. Be mindful of call-off requests. I have had two residents ask for something every single month, which was outrageous. Only make requests when you have something specific you want to attend, keeping in mind that someone else will have to work and be at the hospital early.
8. Sign out when the other team is available. If a team is responding to two trauma codes or a patient on your list is having a rapid response, it is not the appropriate time to sign out. Be courteous, as everyone is part of a team and wants what's best for the patient.
9. An anonymous PGY-4 shared this advice: "Be cautious and act like you are the only person taking care of the patient. Sometimes you'll be surprised to find out it's true."

But remember, the unwritten general rule is that no matter what happens, it's always the chief's fault! Be a good team and go to clinic when it's supposed to start. Don't let your chief get yelled at for no residents showing up in clinic. Remember also:

1. It's natural that chiefs get a little cranky at times, like, for instance, when no one else on the team comes to the OR to help when the chief is begging for assistance.
2. If a team is scrubbed in, they cannot access text messages. If someone has a pneumothorax, the team should be alerted in person, as they won't know about it until they scrub out if the information is only shared via text.
3. I once asked if anyone from the team was present, with no response. I was frustrated, and wondered if I was talking to myself in the chat and pleaded for someone to acknowledge the message with a thumbs up. Positive affirmation and reinforcement is important.
5. The issue of people leaving and not returning is common across all levels. I've experienced people leaving for a morning meeting and not returning for 6 am rounds. It is important to check in with the team.

6. Residency is a job. Don't just copy and paste physical exams—do them!
7. Sign-out times are sent out to the group and have not changed, so why is it so hard to adhere to them? Check in with your senior before signing out and leaving.
8. I've known someone to text that anyone who wants to join rounds can, and if not, they'll round on their own and sign out the patients. The chief should not have to ask the team to keep being proactive.
9. It has been suggested that not rounding post-call could help with wellness, but I disagree. The person who was on overnight knows what's happened to the patient best and should be present for rounds.
10. I feel I must constantly ask everyone to ensure everything is done, but people say "It's very late!", even when it's only 4:34 pm. This leads to the last rule: there is no 5 pm in surgery. I have stayed until 6:30 pm, and as the chief, I have had to do procedures like sacral decubitus offloading because the rest of the team wanted to leave. A patient at the VA had a tube placed for draining a fluid collection, but it was accidentally placed in the colon. I went to radiology with the overnight team member, while the rest of the team, including all five interns and the PA, left. *The patient needs you*, regardless of the time, and I find it incredible that someone would consider scrubbing out of surgery at 5 pm and leaving the next person to finish the case.