Resident Work-Hours Limitations: Shifting the Focus of Graduate Medical Education

Michael Goldstein, MD

The work-hours revolution has moved swiftly across the nation, radiating out from the New York epicenter, with aftershocks still remaining after the case of Libby Zion almost 2 decades ago. The hierarchy of the Halsted residency, modeled on the German model of the latter part of the nineteenth century, remained unchecked for nearly a century. The power of the residency was driven by surgical volume and experience with unlimited hours of “hands-on” training for the apprentice. The training depth and breadth was strengthened at the expense of the quality of resident lifestyle and by current standards, possibly at the expense of the quality of patient care. The current and only recently enforced work-hours limitations (the 80-hour work week) are a necessary part of the modern residency. The transition to meeting compliance with the new work-hour guidelines is both complex and difficult; however, it can ultimately result in more effective resident education.

The mandate of the 80-hour work-week, defined by new 2003 Accreditation Committee on Graduate Medical Education (ACGME) guidelines for residency education, has set the stage for self-evaluation. Work-hour guidelines have been modeled after many studies of airline pilots. Fatigue and sleep deprivation have been shown to decrease attentiveness, manual dexterity, and compromise decision making in multiple studies reviewed by the Federal Aviation Administration (FAA). In January 1998, the Batelle Memorial Institute issued a report on fatigue, sleep deprivation, and circadian cycles. In summary, the report concluded that fatigue led to increased anxiety, decreased short-term memory, slowed reaction time, decreased work efficiency, reduced motivational drive, decreased vigilance, increased variability in work performance, increased errors of omission which increase to commission when time pressure is added to the task, and increased lapses with increasing fatigue in both number and duration. The FAA responded to this by issuing duty hours limitations, mandatory rest periods, and circadian cycle work restrictions.

New York State (NYS) Code 405 mandated change in resident duty hours in 1989, yet it took over a decade for this change to occur, beginning with statewide review by the Island Peer Review Organization (IPRO) followed by the national guidelines adopted by the ACGME. Work-hours reduction as of July 2003 would seem to benefit surgical residents... less fatigue, less hours, more sleep, and mandatory time off. The mandates include a maximum of 80 duty hours averaged over a 4 week interval, a call schedule of no more than every third night on-call, a maximum of 24 hours of continuous clinical duty hours per shift, a minimum rest period of 10 hours between shifts, and one mandatory 24-hour period per week without clinical duty.

So, why are residents bashing the new guidelines? Ironically, many residents before this mandatory reduction in hours looked forward to the change according to a poll of New England residents by Whang et al. in 2003. Senior residents had more negative perceptions of the proposed changes than junior residents. Furthermore, residents in New York already subject to the as yet unenforced NYS guidelines, when asked to evaluate the possible effects of enforcement of these guidelines, were much more discouraged.

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Faculty Highlights

Appointments

John D. Allendorf, MD is Assistant Professor, Division of General Surgery. Dr. Allendorf, a graduate of The Johns Hopkins University with election to Phi Beta Kappa, received his MD from Columbia University College of Physicians & Surgeons. He completed an internship and residency in general surgery at New York-Presbyterian Hospital (Columbia Campus). In 2002, Dr. Allendorf completed a one-year fellowship in liver transplantation and hepatobiliary surgery at New York-Presbyterian Hospital.

Daniel G. Davis, DO is Assistant Professor of Surgery, Division of General Surgery. Dr. Davis joined the surgical faculty of Columbia in March 2003, after spending a year in private practice and serving as an attending at Hackensack Medical Center in New Jersey. He completed his surgical training at Stamford Hospital, a Columbia affiliate, followed by an advanced laparoscopic fellowship in Portland, Oregon. Dr. Davis’ areas of specialty include laparoscopic bariatric surgery and minimally invasive treatment of gastrointestinal disease.

Kathie-Ann P. Joseph, MD is Assistant Professor, Division of General Surgery. Dr. Joseph received a BA from Harvard University and a joint MD/MPH from Columbia University College of Physicians & Surgeons and the Columbia University Mailman School of Public Health. Dr. Joseph completed her general surgery training at NYU Medical Center, where she spent two years conducting surgical oncology research. She returned to Columbia in 2002 as a breast surgery oncology fellow. In July 2003, she joined the faculty of the Department of Surgery at Columbia.

Sanjiv Kapur, MD is Adjunct Assistant Professor of Surgery, Center for Liver Disease and Transplantation. Dr. Kapur is an honors graduate of Fordham College, Columbia University, and Weill Medical College of Cornell University. He completed residency training in general surgery at New York Hospital, followed by fellowship training in multi-organ transplantation at the University of Pittsburgh Medical Center. Dr. Kapur is an active member of the Center for Organ Preservation and Transplantation Research at Cornell, which is focused on basic and clinical research in pulsatile preservation. His clinical practice encompasses transplantation, hepatobiliary surgery, minimal access surgery, and general surgery.

Sang Won Lee, MD is Adjunct Assistant Professor of Surgery, Division of General Surgery. Dr. Lee received his BS from The John Hopkins University with honors in biomedical engineering, and his MD from New York University School of Medicine with honors in basic research science. He completed his internship and residency at Beth Israel-Deaconess Medical Center. In 2002, he completed a one-year fellowship in laparoscopic colon and rectal surgery at New York-Presbyterian Hospital, Weill Cornell Medical Center. In the following year Dr. Lee completed a fellowship in colon and rectal surgery at New York-Presbyterian Hospital, Weill Cornell Medical Center.

Honors and Awards

John F. Renz, MD, PhD is Assistant Professor of Surgery, Center for Liver Disease and Transplantation. Dr. Renz graduated cum laude with a BA from LaSalle University. He went on to receive his MD from Jefferson Medical College, and his PhD in biochemistry and molecular biology from Thomas Jefferson University in Philadelphia. Both his internship and residency were completed in general surgery at University of California, San Francisco, where Dr. Renz also served as chief resident from 2000-2001. During the next two years he completed a fellowship in transplantation surgery at The University of California, Los Angeles.

Beth A. Schrope, MD, PhD is Assistant Professor of Surgery, Division of General Surgery. Prior to joining the profession of medicine, Dr. Schrope completed a PhD in biomedical engineering at Drexel University in 1992, and won numerous federal grants as principal investigator for research work in medical ultrasound. She graduated with an MD from Temple University. After completing her residency in surgery at New York-Presbyterian Hospital, she joined the faculty of the Department of Surgery as a Clinical Instructor and assumed her current position as Assistant Professor in July of 2002.

Kathryn Spanknebel, MD is Assistant Professor of Surgery, Division of General Surgery. Dr. Spanknebel’s clinical specialties include thyroid and parathyroid surgery, melanoma, soft tissue sarcoma and general surgical oncology. She received her BA from the University of Vermont, and her MD from the University of Vermont College of Medicine. Both her internship and residency were completed in general surgery at University of Chicago Hospitals. From 2000-2002 she completed a fellowship in surgical oncology at the Memorial Sloan-Kettering Cancer Center and received the Gorin Fellow Award for clinical excellence.

Kenneth A. Forde, MD
• Received the Science & Technology Award from the American Red Cross of Westchester County at its Fourth Annual Jerome H. Holland Power of Humanity Celebration Dinner
• Named Physician of the Year by the New York-Presbyterian Department of Nursing at Columbia University Medical Center

Paul H. Gerst, MD
• 2004 ACGME’s Parker J. Palmer “Courage to Teach” Award
He was selected as one of ten outstanding program directors in the nation to receive the ACGME Award

Mehmet C. Oz, MD
• Host, Discovery channel “Second Opinion” series

Ann Marie Schmidt, MD
• Juvenile Diabetes Research Foundation International Award
What's in a name?

David Y. Kim, P&S, Class of 2006

For a while now under the name Surgery Club, medical students at P&S have assembled to share their interest in surgery. Recently this interest has been dwindling concurrently with the nationwide decrease in graduates seeking surgical residency. Pragmatism and pessimism are cutting short luminous surgical careers before they even begin. Early on during medical school, would-be surgeons are inculcated with negative comments concerning the future of surgery and the life of a surgeon. Their interest is extinguished. Is surgery still Surgery? In an effort to inform and redeem tomorrow’s surgical leaders, the Surgery Club sought to rediscover Surgery’s idealism and the spirit of “irrational optimism” coined by Dr. Eric Rose. Our first task was to select a new name. “Surgery Club” was too pragmatic. We desired an appellation more indicative of Surgery’s proud heritage at Columbia. After careful consideration and consultation with Dr. Kenneth Forde, we agreed to name the organization after Allen Oldfather Whipple.

In Memoriam

Dr. Edmund N. Goodman (1908–2003)

Edmund N. Goodman, MD, died December 9, 2003 at the age of 95. He and his family moved to Washington Heights in 1917, where at that time, there were many farms. Columbia-Presbyterian Medical Center would not be built for several years. After graduating from City College of New York, he entered P&S in 1928.

During his four years of medical school, he spent some of his free time visiting the operating room, especially when the Chairman, Dr. Allen O. Whipple, was operating. In those days, interns and residents were not paid, nor allowed to be married or consort with nurses, and lived in the hospital, receiving room and board. (Is there anyone still out there saying “ah, the good old days”?!) After completing a two year medical internship, Dr. Goodman was sent by Dr. Whipple to Cambridge University in England to do research in physiology. Then he returned to Columbia to complete his surgical training. His research, begun at Cambridge and continued at Columbia, focused on possible significance of electric potentials differentiating benign from malignant gastrointestinal pathology, especially gastric. Although he continued this research for years, when appointed to the faculty, it became apparent that his principal strengths and interests were in clinical care and teaching.

During World War II, he spent five years in the Navy, eighteen months of it on the Galapagos Islands. During this time (as well as his years in Cambridge), there are many warm, personal letters between Ed and Dr. Whipple, now in his extensive file at Columbia. Upon his return to New York after the war, his career began to grow.

As a tall, handsome, impeccably dressed young attending, his calm, friendly manner and bright, curious outlook endeared him to all. He loved people and life in all its dimensions. He was among the most facile, skilled of surgeons, and became a great teacher.

He developed many interests outside of surgery. At an early age, he became a skilled watercolorist, and illustrated some of his letters in this manner. He also was acknowledged to be the most proficient golfer on the surgical staff, and regaled colleagues frequently with his explorations of the mysteries of the perfect golf swing.

Even after his retirement in 1980, at age 72, he remained in touch with colleagues and former students and residents. He had an unusual affection for them, and followed their careers in surgery.

At age 85, he was in a severe motor vehicle accident, for which he spent five weeks in the intensive care unit with bilateral hemiparesis, and spent five months in the hospital. After his recuperation, he managed to enjoy activities such as a daily swim (weather permitting) in the Long Island Sound near his Sands Point home.

We should give thanks to having known this marvelous clinical surgeon, teacher and friend, whose career spanned the entire existence of the Columbia-Presbyterian Medical Center.

(With thanks to comments by Frederic P. Herter, M.D. at Ed Goodman’s Memorial Service December 20, 2003, and an article by Benjamin Samstein, M.D., after an interview with Dr. Goodman, in 1998).

David W. Kinne, MD

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Meeting old friends and making new contacts at the John Jones Surgical Society and P&S Alumni Association Reception at the 89th American College of Surgeons Clinical Congress, at the Hilton, Chicago, Tuesday October 21st 2003.

American College of Surgeons
Clinical Congress

A joint reception of the John Jones Surgical Society and P&S Alumni Association was held at the Annual Clinical Congress of the American College of Surgeons in Chicago, at the Hilton Hotel, on Tuesday October 22nd 2003. There were approximately 66 in attendance at what proved to be a lively reunion. It was noted that several department members and alumni took part in the Scientific Program or in organization meetings. Dr. Forde welcomed the guests on behalf of the department and of the school and made some brief remarks about the state of current recruitments and appointment activities of both organizations. This was also an opportunity to bring further attention to “A Proud Heritage” which is reaching an increasing number of our Alumni.

Kenneth A. Forde, MD
President, John Jones Surgical Society

Three Vice Chairmen of the Department of Surgery sharing a joke from left: Drs. Mark Hardy, Henry Spotnitz and Kenneth Forde.

It's a family affair: two generations of Pennoyers, William (P&S ’92) (left) and father Douglass (P&S ’54)

Former resident, Talia (Spanier) Baker holding her 5 week old baby Emma with Dr. John Chabot, Chief of General Surgery.

Department of Surgery faculty, Dr. Kathryn Spanknebel (right), with Dr. Raja Flores, 1997 graduate of the residency program.
Former graduates of the residency program, from left: Mrs. Cindi Chandler, Dr. James G. Chandler, Mrs. Mina Hechtman and Dr. Herbert Hechtman.

Dr. Steven Stylianos (center) seen here with surgical alumnus Dr. Andre Campbell (left), and Soji Oluwole (faculty) (right).

Dr. Kenneth A. Forde, President of the JJSS (right) presenting Dr. Peter Lawrence, a former resident, with a copy of “A Proud Heritage”.

Chief Resident, Dr. Akuezunkpa Ude (right) with Dr. Siva Vithianathan (P&S ’93), former Fellow in Minimal Access Surgery.

Dr. Sherman Bull (P&S ’62), surgical alumnus, of Mt. Everest fame, with his wife Peggy.

Former graduates of the residency program, from left: Drs. Ellen Hagopian, Evan Lipsitz and Joanne Starr.
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Concerns over quality of patient care and less time to perform the same duties were two major concerns, along with concerns about few cases and a reduction in clinical experience.

On average, programs needed to allow for a 20 to 25% work reduction at the resident level. This change was rapid, too rapid for most hospitals to provide for a compensatory increase in physician extenders and other support staff to bridge the gap. This process was difficult to implement. Residency programs under pressure would comply using “smoke and mirrors”, with frustrated residents trying to produce more work in less time. Creation of new call schedules and of continuity care teams (separate day care teams and night care teams) would reduce some of the pressure while maintaining excellence in patient care. The efficient use of physician assistants and nurse practitioners helps along the way. Yet, the answer exists not in the time, nor the resident effort, but rather in the design and execution of the educational process.

The challenge of work-hours restriction is the topic of much discussion at national meetings in surgical education. The academic centers in New York State had a head start due to the more restrictive structure outlined by NYS Code 405. At New York-Presbyterian Hospital (Columbia Campus), the anticipated changes in the work-hours policy led the Department of Surgery to adopt a new system of surgical scheduling for the residency. The Continuity Care System (CCS) was designed in May 2002 with intentions of limiting resident work-hours, maximizing educational opportunities, as well as promoting continuity and excellence in patient care. This two-team approach deviates from the norm of an every third night call schedule by creating a day and night team of residents to provide continuous daily patient care in alternating shifts. The successes of this system were presented at the annual meeting of the Association for Program Directors in Surgery in Vancouver, BC in 2003 and recently accepted for publication in Current Surgery.

In a continued effort to improve work-hours compliance, the Department later adopted a resident directed Work-Hours Assessment and Monitoring Initiative (WHAMI). This program created work-hours captains of specified surgical services, as well as a work-hours cabinet to oversee the progress on a weekly basis. Residents are responsible for tracking their personal duty hours and entering them into a work-hours database. Real time monitoring by senior residents limits other residents from working excessive hours. The work-hours data entry compliance for 50 residents was increased from 27% to 99% after creation of the WHAMI. Prior to the new system, a mean of 9.5 residents per month (19%) worked an average of 7.3 ± 6.4 hours over the 80-hour limit. Averaged monthly compliance with the 80-hour work limit was increased to 100% with introduction of the WHAMI. A review of on-call duty hours revealed a mean of 7 (14%) residents per month who worked an average of 2.4 hours beyond 24-hour call limitations including "sign-out" time imposed by the ACGME. New monitoring procedures have improved compliance to 100% with 24-hour call limitations imposed by the ACGME.

The Housestaff have long been the workhorse that powered the hospital. Work-hours reduction by more conservation and rationing has left hospitals short of workers. Restructuring the work force and graduate medical education is the challenge of the future. Efficiency of education will limit the exposure of residents to unnecessary tasks and experiences and may streamline the path towards specialization. Identifying alternate ways to teach by educating the educators and emphasizing new tools, such as computer simulators and patient models, may eventually make the 80-hour work week appear too long, instead of too short.
IN MEMORIAM

DR. PAUL LOGERFO
(1939 – 2003)

Paul LoGerfo, MD

On September 16, 2003, I was in the operating room and received a page from a familiar number. What I had dreaded for months had occurred—Paul LoGerfo had died early that morning. It hardly seemed possible that two days before, on a bright Sunday afternoon, he had been sitting comfortably in his hospital room talking with my husband and me. He had been his usual cheerful self, and more amazingly, he was still teaching. Still sharing his wisdom. Still shaping my career. That few minutes of time was a gift that will stay with me forever.

We all have cherished memories of Dr. LoGerfo. Whether it was him losing his glasses, searching for sweets in any possible place, or making a birthday cake without all the ingredients. I have so many amusing memories that I can’t record them all, as I’m sure most of us do. One of my favorite memories is Paul running into the operating room where I was doing a laparoscopic cholecystectomy with Dr. Marc Bessler late one Friday afternoon. Paul wanted to scrub me out. I declined the offer, wondering why he had done that. I found out later that he was privy to a secret— I was getting engaged that weekend (unbeknownst to me) and he didn’t want me to miss my flight!

Our memories are not limited to his endearing antics. Far from it. What we remember the most is how he taught us. He taught us through his example, skill, and intellect. We tried to be like him: thinking outside the box, pushing the envelope, and setting examples for those around us— these were all his trademarks. Most of us remember spending extra time preparing for morbidity and mortality conferences in anticipation of Dr. LoGerfo’s peppering questions. Even if we didn’t always agree with him, we could never deny the basis for his queries. His probing questions helped us to realize that there was more than one correct way to practice our craft. Who could forget his reply to our groans of protestation: “I’m not telling you, I’m just saying…” You see, he did not force his opinions on us. He simply shared his knowledge and example, skill, and intellect. We tried to be like him: thinking outside the box, pushing the envelope, and setting examples for those around us.

In the operating room, we also learned by his example. His hands skillfully performed operations with unerring efficiency and with incredible speed. This presented a challenging learning experience for his residents. Paul didn’t spend time talking residents through a case. He elegantly led us with his expertise and skill. Yet, in actuality, if we took our eyes off of the operative field for more than a split second, the critical portion of the case was often complete. Therefore, we learned to watch every move very carefully. We learned Paul LoGerfo’s technique through observation and concentrated effort.

In thinking outside the box, Paul LoGerfo developed and perfected the use of local anesthesia for his thyroid and parathyroid patients. We may have learned this technical skill better than any other. We saw his patients go home earlier and in less discomfort. We residents became quite proficient under Paul’s tutelage, and with such results, most of us probably assumed his technique must be a universal practice among thyroid surgeons, right? I found out just how wrong I was. At one institution at which I interviewed for a position, a surgeon who knew Dr. LoGerfo’s practice of using local anesthesia asked me why I would possibly want to do thyroids under local. I was a bit surprised by the question. This technique had been what I had grown up with, so to speak. I had seen spectacular results. Why would I not want to do it?

All of these skills were the tangibles: the new ways of thinking, the technical skills. But what about the intangibles? The work ethic and motivation to mop his own floors between cases, the prodding to operate more efficiently, the happiness that led to an almost constant smile on his face, and his love for life within and outside his career. These may be the qualities that I have learned to appreciate the most over the last several years.

One evening in the wardroom of the USS George Washington, where I was assigned as the ship’s surgeon following my residency, I was talking to several other officers. In reply to one of their remarks, I said, “But perfection is the enemy of good.” After a few blank stares and a discussion of the deeper meaning of this phrase, one of them asked me if I had made that up. I told them of Paul and his mantra. On the aircraft carrier, there was a Plan of the Day distributed to the 5500 crewmembers, and in it was a quotation, usually from a president or military icon. I was surprised and proud on the following morning when the quote for the day was that of Paul LoGerfo, MD. I don’t believe Paul expected his influence to spill over into the military, but he had such an impact on such a huge number of young surgeons that his philosophy was bound to touch those far beyond his role.

In so many ways, Paul led a life of giving of himself, and it was the same with his patients. At his memorial service in November, those in attendance had the opportunity to experience the thoughts and feelings of one such patient. Many of us were amazed as we listened to her describe her relationship with her surgeon. I cried. I cried because, perhaps for the first time, I realized that Paul had so much left to give to his residents, his patients, his friends, and his family.

When one reflects on their life and career, one can often identify a few people who have had a profound and lasting impact. Those of us having had the privilege of being residents at Columbia-Presbyterian Hospital have been brought into contact with many of the most knowledgeable, innovative, skilled, and caring surgeons who are practicing today. Indeed, whether we knew it or not, we had been walking with a giant in Paul LoGerfo, and were blessed to call him our teacher and friend. In as much as this is true, we must realize that we have suffered a tremendous loss. But with that also comes a great responsibility. We, as colleagues and residents of Paul must carry on the legacy which he so adeptly and artistically created. Indeed, his talent and philosophy will most certainly live on through the generations of residents he taught.

Anne C. Campbell-Larkin, MD
trained them. Dr. W. hipple himself was the first occupant of the Valentine Mott Chair of Surgery, and Valentine Mott was trained a century earlier than Dr. W. hipple by the first professors in this school.” The original Society no longer meets, but we hope to embody these ideals once again as the Allen O. W. hipple Surgical Society of P&S.

Dr. W. hipple once said to “Choose your teachers well, for their influence on you can be telling and lasting.” With that in mind, the guest speaker at our inaugural meeting on September 24, 2003 was Dr. Forde, the José M. Ferrer Professor of Surgery at Columbia. He shared with us the proud history of Surgery at Columbia and reassured us of an equally proud future. Knowing of Dr. Forde’s interest in surgical history, the Society presented a plaque of appreciation on which was mounted a photograph taken in 1967 of Dr. Ferrer rounding with medical students on the Columbia Division of Surgery at Bellevue. Copies of “A Proud Heritage: An Informal History of Surgery at Columbia” co-authored by Drs. Herter, Jaretzki, and Forde were given to the students as a gift from Dr. Rose. Most recently, the Society featured Dr. Mark Hardy as the guest speaker at its second meeting. There was a record attendance of 65 first-year students—almost half of the entire first-year class. Among them, hopefully, are future members of the John Jones Surgical Society.