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Not the Last Word

Not the Last Word: Two Patients, Two Operating Rooms, One Surgeon—Does The Math Add Up?

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Investigative reporters at *The Boston Globe*—the same unit featured in the film *Spotlight*—have shined their attention on so-called simultaneous surgery. In a series of articles very much worth reading [1], *The Boston Globe* described a controversy at Massachusetts General Hospital regarding a practice certainly not limited to that institution: Namely, two patients, in two operating rooms at the same time, for two procedures performed by one surgeon.

The Boston Globe series was not an abstract discussion. The reporters began with the poignant story of Tony Meng, a 41-year-old man who awoke from a cervical corpectomy unable to move his arms or legs. The journalists alleged that Mr. Meng's surgeon "juggle[d] his care" with that of second patient, who also was undergoing a complicated spinal surgery at the same time. The reporters discussed the backroom infighting surrounding the case, including lawsuits, charges and counter-charges, and, ultimately, the dismissal of one surgeon (not involved in the incident in question) for purported violations of privacy rules.

This narrative captured the attention it sought. Within months of the article's appearance, the Massachusetts Medical Board issued new regulations demanding that surgeons document each time they enter and leave the operating room. Shortly thereafter, the American College of Surgeons revised its Statements on Principles [2], stating plainly that a "primary attending surgeon's involvement in concurrent or simultaneous surgeries on two different patients in two different rooms is not appropriate."

As I write this, the orthopaedic surgery community has not formally responded, but no doubt it will. *The Boston Globe* story, after all, was an orthopaedic story: Tony Meng had an orthopaedic operation and the physician dismissed from the staff was an orthopaedic surgeon. Indeed, the word "orthopaedic" appeared more than three dozen times in the article.

A full analysis of simultaneous surgery is apt to run many pages. There are many ethical principles to be unpacked; there are many competing interests that must be balanced. Still, there are three general principles that must be kept in mind by all those who analyze this issue.

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First, vivid stories can propel policy changes. For example, the story of Libby Zion, a young woman who died in a hospital unexpectedly, amid accusations of inadequate resident supervision, was able to "[transform] American medical practice" [13] in ways the facts of the case could not support. Although a jury concluded that the "supervision for young doctors was not to blame" [8] and although the case itself transpired before the 24th hour of the residents' shifts, the State of New York passed the Libby Zion Laws, mandating increased attending physician participation and limited tours of duty. These features are now the norm across the country.

Further, vivid stories might propel poor policy changes. As Kahneman [9] teaches, emotional decision-making is quick, but not necessarily coherent. For example, the Libby Zion rules were based on the intuitive (and correct) belief that tired physicians may make more errors than their well-rested counterparts. Still, a system of limited duty hours might be worse than a system in which care is given by tired physicians: Frequent patient handoffs [4] may cause more errors than fatigue.

Last, the poor policies that spring from storytelling are unlikely to be reversed. For one thing, stories set the bar higher, as only robust data can surmount an appeal to sentiment. Moreover, once a rule is put in place, it may be difficult even to collect any data to rebut it. As noted by Meyer, experimenting with an existing practice is considered "more morally suspicious" [11] than unilaterally implementing an untested practice. Now that the 80-hour duty limit has been enshrined as the norm, for example, it has been claimed that studying any alternative is unethical [12]. It is not hard to imagine that studies of simultaneous surgery will likewise be declared "morally suspicious" once a policy is established, even if that policy was not evidence-based.

Good data must therefore be collected now. To my knowledge, there has been only one review of simultaneous surgery's effect on outcome [5]. We need more of these reviews, along with experimental studies that test alternative policies and measure their effects. We also must discover what really matters to patients, in advance. In my experience, preoperatively, patients would sooner discuss the details of sausage-making than talk about the nitty-gritty of their planned procedure. Only in retrospect, especially after a complication arises, does the thirst for details emerge.

Empty rhetoric will not be helpful. Strict rules that limit procedures when "key or critical portions of a second operation [are taking place] in another room" [2], yet give the surgeon complete discretion to define the key or critical portions, even after the fact, are hollow rules.

The vivid stories of the *The Boston Globe series* may help foster a healthy retreat from an unhealthy veneration of superstar surgeons. If informed consent were to emphasize the institutions where patients are having surgery, rather than the individual surgeon performing the case, many of the problems of simultaneous surgery would be taken off the table, so to speak. After all, there is no denying that the operations highlighted in the series took place at the correct hospital; the lapse, if any, was that expectations about personnel and participation were not met. Yet if patients were instructed to be indifferent to which specific individual would be performing which specific task, there is no room for disappointment there.

To be sure, a team approach [7] will be successful only when a particular healthcare organization is accountable for patient outcomes. True accountability creates the proper incentives [3] for crafting the correct policy, monitoring its effects and, crucially, refining procedures as more is learned.

Selecting where to have surgery, as opposed to selecting which particular surgeon will perform it, is already the norm in one notable [2] example:

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Hernia repair at the Shouldice Clinic. The clinic's website [14] claims a 99.5% lifetime success rate for primary inguinal hernias, yet beyond the name of the founder (who died 51 years ago) the clinic's website does not list the name of a single surgeon. And that's the point. Patients are not told to come for the care of Smith or Jones; they are told to come for the Shouldice method, which will be employed by Smith or Jones—or, as the website implicitly admits, even a former general practitioner learning how to operate under the watchful eye of Smith or Jones.

Selecting treatments based on trust in a team can improve the quality of care. For instance, airlines have long been lauded for their culture of safety [16]—a culture based on teamwork. In aviation, safety is the responsibility of all participants. On the other hand, in medicine credit is given to the individual provider, in ways that airlines explicitly reject.

Consider my experience in this area. Not long ago, when heading home from an Academy meeting, I learned that my flight was going to be delayed; the airline needed to switch crews. Although I was not thrilled to spend more time away from home, I was pleased to discover that the pilot whom the airlines thought should not be flying my plane was in fact not going to be flying my plane. You would probably feel the same way. Contrast that to an experience I had on a Friday morning in January, 17 years ago. On that day, I had to call my patients scheduled for surgery and inform them that our daughter had apparently decided to be born a few days earlier than planned. I asked these patients if they would prefer to wait a week for me to return or have a colleague operate on them sooner. Not one hesitated to wait. I was of course gratified by this vote of confidence, but the attitude it reflects may impede a transition to system-based care and the quality only it can bring.

Unless and until patients become as comfortable with a replacement surgeon as they would be with a replacement pilot, medicine will not have a culture of safety on par with the airline industry. Unless and until "Top Doctor" lists [6] become as scarce as "Top Pilot" lists, patients are not going to trust Accountable Care Organizations to be accountable. With that, wrangling over the ideal standards for simultaneous surgery remains inevitable.

What is the ideal standard? A strict policy requiring the presence of the surgeon from the induction of anesthesia until the final dressing is placed deserves to be rejected. Such a policy is inefficient, imposing costs without sufficient offsetting benefits on surgeons, hospitals, future patients and even current patients. (There will be lost income for surgeons, no doubt, but there will also be squandered opportunities to deploy hospital resources; longer waits for care as the surgical workforce is effectively reduced; and possibly worse outcomes–because for some tasks such as wound closure, the substitute worker, now no longer employed, might have done them better). On the other hand, a lax policy, one allowing concurrent procedures without limit [15], has already been rejected as a matter of law. So some middle ground must be found.

Because it is likely that whatever policy is chosen will endure, we have get it right the first time. That will demand rigorous data collection, ex-ante determination of patients' preferences and full consideration of the policy's impact on healthcare delivery. Tony Meng Laws, if enacted with the case of Tony Meng specifically in mind, are apt to be flawed.

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Concurrent surgery is a topic important to all subspecialties, but

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particularly charged for orthopaedic surgery given the cases involved in *The Boston Globe's* investigative report. Dr. Bernstein has considered this issue by raising several thoughtful arguments, two of which deserve special attention. First, he suggests surgery could move away from reliance on individual surgeons towards "institutional" delivery of care—a questionable idea. Second, however, he wisely cautions against rapidly adopting regulations for concurrent surgery without rigorous data collection.

Primarily, suggesting that patients could be "instructed to be indifferent to which specific individual would be performing which specific task" in a surgical operation makes me wonder what effect this would have on the bond of trust between surgeon and patient. He cites the example of the Shouldice Clinic, where individual surgeons are not named on its website, and patients come for the Shouldice method rather than the surgeon. While this strategy may be suited for low-risk, routine procedures with little intraoperative decision-making, it may not hold for complicated procedures (such as Tony Meng's spine surgery or myriad of other high-stakes procedures with significant likelihood of variability), where patients wisely want to form a trusted relationship with a surgeon who can advocate for their needs and preferences while they are anesthetized. Furthermore, even at the Shouldice Clinic, patients still meet their surgeon prior to being operated upon, despite not specifically selecting that surgeon; they should reasonably expect that their identified surgeon would perform the portions of the operation promised.

The problem with concurrent surgery is not substituting a surgeon with an "equivalent" attending surgeon, but rather with trainees or assistants who take over without patient knowledge when the surgeon scrubs out and leaves the operating room. Rather than expecting patient indifference to the surgical team, we should expect surgeons to explicitly discuss the roles of each surgical team member as suggested by the American College of Surgeons [2] and explain how a case realistically proceeds. This discussion could further the bond between patient and surgeon and fulfill the spirit of informed consent.

Transparency is an important first step, but it is not the only component of successful concurrent surgery. Every day, surgeons successfully care for as many patients as possible and ensure their availability for "critical portions" of procedures by making good decisions about delegation and recognizing the limits of attending to competing cases. We should study these surgeons to learn best practices, and also learn from the instances where poor judgment contributed to patient harm. We need to use this data to examine the effect of potential regulatory strategies on healthcare costs, surgical-care access, and complication rates. Only then, as Dr. Bernstein suggests, can we design effective policies to regulate concurrent surgery.

How patients select surgeons or institutions is important, but not when it comes to concurrent surgery. The true first step of tackling the issue is to collect and analyze data about the practice of concurrent procedures, so regulatory suggestions come from informed, strategic sources. Clearly this topic is gaining momentum, and I am encouraged by the fact that surgeons are not only beginning to study this problem but also considering solutions. It will be critical for us to continue this work to ensure the best possible care of our patients.

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The thoughtful piece by Dr. Bernstein asks surgeons to turn both inward and outward in examining how the profession should respond to the recent maelstrom over concurrent surgical

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procedures. Turning inward, surgeons, together with their institutions, should reflect on whether a further shift away from "superstar culture" and toward a truly team-based approach would help. Dr. Bernstein imagines a future in which patients select a facility and team, not a particular surgeon, and are indifferent as to who scrubs in. Would such a future be better? As Dr. Bernstein argues, we will only know by turning outward, examining outcomes data across institutions.

When researching the topic of concurrent surgical procedures for a recent *JAMA* article [10], I was astonished at how thin the evidence base is about the relationship between overlapping surgical schedules and surgical outcomes. I located only one, unpublished study abstract. *The Boston Globe* investigation has led to regulation by at least one state board of medicine and a Senate committee investigation of 20 hospital systems. Greater oversight is certainly warranted. But there is a danger, as Dr. Bernstein points out, that the imposition of regulation will precede the collection of evidence about what exactly needs to be regulated.

Conducting rigorous outcomes studies should be the next step. We can begin with observational studies; datasets exist that could allow researchers to measure the extent of overlap among operations, along with surgical outcomes. Reasonable controls for case complexity and comorbidities are available. To eliminate potential selection effects, however, there should also be discussion among surgeons and ethicists about the feasibility of randomized, controlled trials.

The biggest challenge for such trials would likely be obtaining informed consent. Most patients would probably be surprised and dismayed to learn how commonly overlapping scheduling occurs, and many could shy away from study participation.

If the evidence shows decrements in clinical outcomes associated with overlapping scheduling, then attention must immediately be paid to whether these decrements can be addressed using a team-based approach; and if not, how scheduling will be changed. If no differences in outcomes are shown, then attention should focus on better communication with patients. Patients need to understand that concurrent procedures are common and that specific steps are taken in order to minimize the risk of adverse outcomes [10]. These facts must be explained early on, so that the information can be incorporated into patients' choice of surgeon and facility.

Patients assume that, like the pilots of which Dr. Bernstein speaks, their surgeons are giving them their full energies during the operative period. When that is not the case, surgeons and their institutions need to be able to say, with candor and with evidence that the care they provide does not suffer.

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