Beyond Burnout: Architecting a Sustainable and Fulfilling Life as a Surgeon

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John Crosby was born in Sarnia, Ontario Canada. He attended the University of Western Ontario and was on the Dean’s honour list for his medical degree.
He interned at the Wellesley Hospital in Toronto and did emergency medicine for twenty years in Kitchener-Waterloo and Oakville. Dr. Crosby is also an expert witness for the Canadian Medical Protective Association and a supervisor for the Colleges of Physicians and Surgeons of Ontario, British Columbia and Prince Edward Island. He was Chief of Surgery at the Cambridge Memorial Hospital.
He obtained his FRCPC in emergency medicine and was a family physician in Cambridge for thirty years. He has written six books and hundreds of blogs of physician burnout (www.countryquack.com) and lectured worldwide on the subject. He has mentored over a hundred doctors worldwide on burnout, including Dr Rozario.

Dedicated to my wife Carol Rozario, and children Natasha and Nathan, you are the foundation of my architected life.

Dedicated to my beloved late daughter in law Kristy Dawn Crosby.

"All of humanity's problems stem from man's inability to sit quietly in a room alone." — Blaise Pascal

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Executive Summary

The surgical profession faces unprecedented challenges that go beyond simple burnout—what many experience is moral injury, the distress that comes from being unable to provide the quality care we know patients deserve. This book reframes the discussion from merely avoiding burnout to proactively designing a fulfilling surgical career through a dynamic three-phase framework: "**Learn, Learn and Earn, and Learn and Earn Differently.**" This approach acknowledges that a surgical career spans many decades and requires continuous adaptation. The early phase focuses on foundational decisions regarding specialty, location, relationships, and financial literacy. The middle phase emphasizes process optimization, workload management, leadership engagement, and maintaining work-life integration. The final phase involves the evolution of your practice, mentorship, legacy-building, and thoughtful transition planning. By taking an architectural approach to your surgical career—making conscious choices, setting boundaries, embracing technology, fostering collegial relationships, and maintaining personal well-being—one can create not just a sustainable practice but a deeply rewarding life in surgery. Success requires both individual agency and system improvement, with empathy serving as the guiding principle throughout.

Introduction

The term "burnout" in medicine, particularly in surgery, has become ubiquitous. We see the statistics – the Canadian Medical Association survey of 2018 identified that 29% of surgeons demonstrated burnout, the Mayo Clinic studies quantifying emotional exhaustion, the tragic reality of physician suicide rates. In Shanafelt's review of 2017, "The Business Case for Investing in Physician Well-being", he identifies systematic reviews demonstrating burnout rates among surgeons ranging from 35-60%, with higher rates among certain subspecialties and early-career surgeons. Burnout correlates with increased medical errors, reduced patient satisfaction, and higher surgeon turnover. The economic cost of replacing a surgeon is estimated at 2-3 times annual salary, not counting lost institutional knowledge and team disruption. Most important, is the terrible toll that this takes on the individual surgeon, their colleagues, and their family.

We talk about resilience, mindfulness, and taking breaks. But often, this conversation feels reactive, focusing on mitigating damage rather than proactively designing a career and life that are inherently sustainable and deeply fulfilling. The narrative often frames surgeons as victims of a broken system, battling overwhelming forces – and while the system undeniably presents profound challenges, a purely passive stance leaves one powerless. Don't wait for the government or the Ontario Medical Association, or the "system" to do something. Take control and architect the life you dream of.

Moral injury, as described by Talbot and Dean, perhaps better captures the distress many surgeons feel – the psychological wound inflicted when we are unable to provide the high-quality care we know is needed, often due to systemic barriers, resource limitations, or conflicting demands. Most of us are all too familiar with the OR cases put on the add-on board rolling to the next day. It's the

dissonance between our core values and the daily realities of practice. This is not merely fatigue; it's an erosion of purpose.

This book aims to reframe the discussion. Instead of solely focusing on *avoiding burnout*, let's explore how to *architect the best version of your life in surgery*. It requires moving beyond the traditional, linear model often summarized as "**Learn, Earn, and Adjourn**." That model is insufficient for the complexities of modern surgical practice and the length of our careers. We need a more dynamic, iterative approach. We propose: **Learn, Learn and Earn, and Learn and Earn Differently.** This framework acknowledges that learning is continuous, earning evolves, and our relationship with work must adapt over decades. It requires conscious choices, strategic planning, embracing change, and understanding that we are not just cogs in a machine but active agents in shaping our professional and personal lives. We must navigate a landscape marked by significant pressures – government funding constraints that often defy sensible management, rising patient expectations sometimes bordering on entitlement, and the inherent intensity of surgical work itself. But within this landscape, there is space for agency, innovation, and profound satisfaction. I love my life in surgery. But I didn't always.

By no means am I placing sole responsibility for this on surgeons. In West's meta-analysis of 2016, "Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis", he demonstrated that effective burnout interventions operate at both individual and organizational levels. On parameters such as "overall burnout" structural or organizational interventions **were found to be more effective** than individual-focused ones, though for many other parameters there was no significant difference. Both approaches are likely necessary for success. Numerous systemic and personal factors have evolved over the past several years, including access to medical information on the Internet, an ageing population, artificial intelligence models, and the increased medical legal issues associated with surgical practice.

Will this book be of value to you?

The perspectives of architecting a joyful life in surgery are diverse and highly variable. The following concepts were written by a male surgeon of Indian descent with almost 30 years experience, and a male retired family physician with over 50 years of clinical experience. The experiences of the diverse surgical workforce cannot be completely described or understood by a single author. We don't explore perspectives of cosmetic or self-pay surgery versus government payment, nor do we have a personal understanding of the unique challenges facing women, or indigenous surgeons. If your life is perfect, stop reading now, and tell us your secrets. We welcome feedback from all readers about how we can improve this book from your diverse experiences. Please reach out to us.

Measuring Progress: Tools for Self-Assessment

Tracking your well-being and career satisfaction requires regular, structured assessment. Consider implementing these evaluation approaches:

Burnout Inventory: The Maslach Burnout Inventory (MBI) or the abbreviated Mini Z can help quantify emotional exhaustion, depersonalization, and sense of accomplishment. Schedule annual self-assessments for yourself or your department to track trends and identify issues before they become critical. This is a copyrighted tool and a fee is required to access it:

MBI (copyrighted)

https://en.wikipedia.org/wiki/Maslach_Burnout_Inventory

https://www.mindgarden.com/329-maslach-burnout-toolkit-for-medical-personnel

Mini Z (free for personal use)

See Appendix J

https://pmc.ncbi.nlm.nih.gov/articles/PMC9411313/

Professional Fulfillment Index (free for personal use)

Beyond measuring burnout, the Stanford Professional Fulfillment Index evaluates positive aspects like engagement and meaning via a 16-item instrument and assesses more than burnout. This provides a more balanced view of your professional experience.

https://link.springer.com/article/10.1007/s40596-017-0849-3

electronic version here:

https://www.mcgill.ca/deptmedicine/wellness/professional-fulfillment-index-self-assessment-tool

Phase 1: Learn (The Foundational Years – Laying the Groundwork)

The initial phase of a surgical career is intense – internship, residency, fellowship, establishing a practice. In the Oxford Dictionary, the word "intern" is first described as a student who works, sometimes without pay, to gain work experience, but as a verb, it means to confine someone as a prisoner! A resident is defined as “a person who lives somewhere permanently or on a long-term basis”- sounds like a surgical trainee to me. The focus is heavily on acquiring technical skills and clinical knowledge. However, foundational decisions made during this period have repercussions that echo forever. Neglecting the non-clinical aspects here is a setup for future challenges.

Thriving During Training: The Pre-Foundation Years

Before our three-phase model fully begins, the training period deserves special attention. Residency and fellowship are uniquely challenging periods where the foundations of your surgical identity are formed, often under extreme pressure.

Wellness in Training: Establish sustainable habits early. As grueling as training can be, prioritize sleep hygiene when possible. Research shows cognitive performance declines markedly after 16 consecutive hours awake, comparable to alcohol impairment. Find brief, high-yield exercise routines that can fit into unpredictable schedules—even 10-minute high-intensity workouts provide benefits. Meal planning and preparation during off days can improve nutrition during busy rotations. The trifecta of sleep, diet and exercise cannot be emphasized enough. Sleep deserves a special mention.

Sleep: Our training phase is characterized by chronic sleep deficiency, something that undoubtedly produces numerous long term negative consequences. Sleep hygiene is something with a clear return on investment. A restful night of sleep usually starts with a successful day- get sunlight exposure, physical activity and try to stick to the same schedule each day. As much as possible no napping in the day, as this practice reduces sleep pressure at night. If you have been working at night and need to nap, set a timer – NASA says that the optimal duration is 26 minutes, and preferably before 3pm. Of course, if you have been up all night, use your judgement. Watch your caffeine intake -the half life of caffeine is approximately 5 hours so at 6pm, you still have a quarter of your caffeine from your 8 AM coffee. On this topic, Dr. Rozario and Dr. Crosby disagree. Dr. Rozario is supportive of an individual's decision to consume caffeine, whereas Dr. Crosby recommends no caffeine. The 3:2:1 rule describes no fluid intake 3 hours before sleep, no eating 2 hours before, and no screens one hour before. For the last few hours before sleep, switch the screen colour of your devices away from blue to a “Night-Shift Mode” or use blue light blocking glasses. Blackout curtains and a sleep mask will help produce the intense darkness required for sleep optimization. Ear plugs are also often very helpful depending on your circumstances- try different types and see what works for you- I like the mouldable silicone type. Read a physical book for 15-20 minutes before bedtime. If you like metrics, a smartwatch can track your stages of sleep so that you can see what effect changes have. There is a correlation between sleep deprivation and

numerous health conditions, including metabolic syndrome. When I was having my challenges with insomnia, I found tremendous help with the practice of Yoga Nidra. Try this You Tube site: https://m.youtube.com/@SarovaraYoga

Another expert teacher and friend is Dr Marcia Kostenuik- a physician, teacher, and coach who treats physicians suffering from burnout including insomnia. I highly recommend her classes: https://www.drkostenuik.com/

So optimize for sleep.

Finding Mentors: Seek multiple mentors with diverse strengths rather than a single "perfect" mentor. Look beyond your own institution through surgical societies and social media. Consider both clinical and non-clinical mentors who exemplify different aspects of the career you envision. In the era of Virtual meetings, it is easier than ever for mentors to block time to meet you. Check with your local or provincial medical association to see if they have a free mentorship program like the Ontario Medical Association does: https://www.oma.org/practice-professional-support/physician-health-and-wellness/tools-for-physician-leaders/peer-support/

At surgical meetings and through the course of my practice, I have encountered many surgical residents and medical students, and I mentor several of them, meeting on a regular basis, typically through phone or Zoom calls. We both have a lot to teach each other.

Building Your Technical Foundation: Focus on deliberate practice rather than simply logging cases. Before each operation, mentally rehearse the procedure, anticipate challenges, and review anatomy. After each case, reflect on what went well, what went poorly, and what could improve and make notes. Record operations when possible (ex. laparoscopic cases, with appropriate permissions) for self-assessment and review.

Training Program Selection: When choosing residency and fellowship programs, look beyond prestige. Consider factors like operative autonomy, exposure to techniques relevant to your planned practice, faculty turnover, resident wellness initiatives, and geographic location in relation to your support system. Often the people are more important than the place. Individual factors often prevail. Dr. Rozario wanted to go to a smaller surgical training center, Ottawa, to be closer to his family. Dr. Crosby wanted to experience the big city life and chose to train in Toronto. Social factors are just as important as prestige.

Maintaining Perspective: Remember that residency is **temporary.** While intense, these years represent only a fraction of your surgical career. Whenever possible, connect with patients on a human level—these meaningful interactions renew purpose during difficult periods and remind you why you chose this path. Historically, every hour on the surgical service needed to be covered by surgical residents. With the changes to training protocols at many institutions, surgeons go home in the morning after being on call and other staff such as hospitalists participate in patient

care. This has the benefit of improving surgeon wellness but can decrease the training hours. The challenges of your training will exist whether you embrace them or not. A quote from my favorite Buddhist teacher, Gelong Thubten, “In pushing away discomfort, we usually don't see how the discomfort lies in the pushing. It is our *habit* of chasing pleasure and running away from hardship that is the real problem, as any habit simply proliferates - so we constantly chase more and push away more, reinforcing our sense of dissatisfaction.” At the beginning of Covid-19, I was spiraling and in a bad place, and then I encountered a fabulous book: "Think Like a Monk" by J. Shetty. It changed my life and introduced me to the power of meditation.

Often, in the heat of the moment, it is difficult to be the best version of ourselves. After a challenging encounter or at the end of the day, ask yourself: What made me angry today? Why did it happen? How did I address it? And how would I like to do things differently next time? While we are human, we should attempt not to repeat the same mistakes over and over again.

The stresses and challenges of life are in some ways necessary to form us into who we become. No one comes out of the oven fully baked.

Reframe the situations that you are in from **I hate** to **I love**. I hate Mondays after a Sunday on call becomes, I love Mondays, because I take the day off after a Sunday on call.

What do you hate about surgery? Why do you hate it? How can you transform that into something you love?

Turnaround times between cases are annoying, **or** an opportunity to finish your email inbox, do a chair meditation, or socialize. Did you have a patient not show in your office? Meditate at your desk. One minute will pass at the same rate whether you worry or not.

No-shows at the office- I love them now as it gives me more time to complete pending tasks.

Hate walking on the treadmill? Get a big television and mount it in front. Now, I love the treadmill as I can catch up on the latest science fiction show I am watching or learn something on a YouTube video.

Hate gardening? I listen to podcasts while gardening, and I love gardening now as it gives me a chance to catch up on so many great podcasts!

- **What You Do (Specialty Choice):** Beyond the intellectual and technical appeal, consider the lifestyle implications. What are the typical on-call demands? What is the emergency workload like? Do the nature of the patient interactions align with your personality? Is it a field prone to high litigation? What is the earning potential? What are the employment prospects? Are the employment opportunities academic or community-based? Choosing a

specialty is not just about surgical passion; it's about choosing a life. You are attempting to create a life that will bring you joy, fulfillment and satisfaction. You need to start early.

- **Who You Marry (Your Core Support System):** This might seem overly personal, but the choice of a life partner is arguably the single most critical factor in long-term well-being for a demanding profession like surgery. Does your partner understand the demands, the unpredictable hours, the emotional toll? Are they supportive, or do they view your career as a competitor? A supportive partnership provides a crucial buffer against stress and a foundation for navigating the inevitable challenges of balancing work and life. They will help keep you grounded when your ego gets too big. Of course, this support must go both ways, as a surgeon we must be acutely aware of the stresses associated with being a surgical spouse. As many of you know, we often bring our work home with us - at least in the emotional sense. As someone, who may be my wife, said to me once, "It takes a saint to be married to you!" Conversely, a strained relationship amplifies professional stress exponentially. University of Virginia professor Brad Wilcox found in his research that married people were five times more likely to say they are very happy with their lives compared to unmarried people, and that marriage is the best predictor of overall happiness.
- **Where You Live (Community and Commute):** Your practice location dictates more than just your patient population. Consider the cost of living, the quality of schools if you plan a family, the length of your commute (a major time-sink and stressor), and the sense of community. Does the hospital environment feel collegial or competitive? Is it a location where your partner can also thrive professionally and personally? Proximity to extended family for support can also be a significant factor. Do you have recreational facilities nearby and can you pursue the hobbies you are interested in? What do you like to do in your spare time, and will the community facilitate that? Are there cultural amenities such as fine dining, opera, theater, sports facilities, and shopping nearby? Do you have access to the great outdoors?
- **Money (Early Financial Literacy):** While earning potential is high, surgical careers often start with significant debt. It’s crucial to develop financial literacy *early*. This isn't about lavish spending; it's about understanding budgeting, debt management, savings, and investing from the outset. The financial planning sentiment often attributed to Albert Einstein is, "Compound interest is the eighth wonder of the world." The earlier you start, the earlier you build a financial base for your future success. Financial stress is a potent contributor to burnout. Laying a solid financial foundation early provides peace of mind and options later. We'll revisit automation later, but the *learning* starts here. Start retirement accounts and tax-free savings accounts early, even with small contributions, to harness compound growth. Understand loan repayment options and forgiveness programs. Create simple budget systems that require minimal maintenance during busy rotations. The financial foundations built during training can significantly impact your options later. You may be an investing wizard, able to beat the stock market indices every year, but if you're like the 99% of us who can't do that, follow the advice of our colleague, Dr. Paul Healey (Physician Financial Independence), and Warren Buffett from Berkshire Hathaway- invest in a basket of Exchange Traded Funds: ETFs monthly. Forced savings where you put a fixed percentage of your monthly income into a balanced group of ETFs on an automated basis

will make you financially independent. Connect with Dr Healey on Facebook: Physician Financial Independence (Canada) and see Appendix C at the end of this article.

Watch your spending. No amount of savings will compensate for uncontrolled spending. Remember that most of the time people are thinking about themselves, not your new $200,000 Range Rover. And not your $1000 Brioni shirt. There is nothing inherently wrong with these things. But is the pursuit of them causing you suffering? Is it worth trading lifestyle for wealth? If you don't feel respected, spending is not the way to change it. Before splurging on something, pause and ask yourself, "Will this really make me happy? And tomorrow, will I be happy I did this?"

Talk to other doctors who are financially successful and ask them what they do. Remember, that money is only useful for solving money problems. It will not address the challenges in your relationship, your physical health, or the complexities of your surgical practice. As Naval Ravikant says, "Take care of the important things that money can't buy: a fit body, a calm mind, a house full of love and respect."

Do you want the government spending your money and determining your medical care? If you don't, get a power of attorney for medical and financial decisions and make a will. All of us are seconds away from a medical catastrophe. While that might be rare, planning for the future is better than paying for neglect. Get disability and life insurance early.

- **Communication, Especially with Anaesthesiology:** Surgery is unequivocally a team sport. Yet, in many operating rooms, communication breakdowns are common, particularly between surgeons and anesthetists. From the very beginning of your career, recognize that your anesthesia colleagues are not mere "technicians responsible for take-off and landing," as described in one of my earlier articles. This view is disrespectful and detrimental to team function and patient safety. Anesthetists are experts in resuscitation, physiology, and critical care. They will save you and your patients countless times. In my two terms as Chief of Surgery, the collaborative and collegial relationship I had with my Chief of Anesthesiology, Dr Dinesh Nethirasigamani and his Department was one of the highlights of the job.
    - *Cultivate Respect:* Treat them as valued colleagues. Communicate clearly and proactively, especially when booking urgent cases. Share the details, understand their concerns.
    - *Develop Emotional Intelligence (EQ):* I admit, early in my career, my EQ in the OR was poor. I didn’t always read the room well, leading to frustration. Improving this takes conscious effort. Understand that everyone on the team has pressures and perspectives. Ask yourself, "Could I be wrong?" Assume positive intent. Remember as the Captain of the ship in the OR, you are responsible for everyone on your team as well as your patient. Lead with compassion.
    - *Embrace Team Training:* Concepts like Crew Resource Management, adapted for healthcare, demonstrably improve efficiency, outcomes, and OR satisfaction.

Participate actively if your institution offers it; advocate for it if they don't. As Dr. Robert Johnston from the CMPA guided our department, learning how to work better *together* is transformative.

- **Understanding and Addressing Bullying:** Bullying and disruptive behaviour in healthcare are toxic realities. Often rooted in past trauma, hierarchy, stress, and poor communication, they create fear and undermine psychological safety. Early-career surgeons can be particularly vulnerable. Learn to recognize it, whether directed at you or others. Understand your hospital's policies for reporting. Crucially, commit to *not perpetuating* such behaviour yourself. Fostering a culture of respect, as discussed above, is the antidote.

If you are being bullied, seek assistance. One thing a bully is afraid of is someone more powerful. Talk to a senior surgeon, your chief of surgery, or chief of staff to advocate for you if needed.

If you are in a position of power, deal with complaints - whether patient complaints or surgeon complaints - early. The sooner you put out the small fire, the more likely you are to avoid the big fire.

- **Finding Your "Why":** Before the relentless demands of practice fully set in, take time to connect with your core motivation. Read Simon Sinek's "Start with Why." Watch his TED talk. Why did you choose surgery? What impact do you want to make? What truly inspires you about caring for patients? This intrinsic motivation is the fuel that will sustain you through difficult times. Revisit your "Why" periodically throughout your career. Remember that as a surgeon you are a human "being" before you are a human "doing".

This initial "Learn" phase is about more than mastering surgical technique. It's about building a robust personal and professional foundation, developing crucial communication skills, understanding the system, and making conscious choices that align with the life you envision.

See Appendix B, Case Study

See Appendix C, Resource Directory

See Appendix D Implementation Timeline

Phase 2: Learn and Earn (Building, Navigating, and Optimizing Mid-Career)

This is typically the longest phase, spanning decades. You're established, busy, and likely juggling numerous responsibilities. The focus shifts from *foundational* learning to *continuous* learning, optimizing processes, navigating system complexities, and actively managing your workload and well-being. Earning is significant, spending can be high, but managing the demands associated with it is key. Complacency is dangerous; proactive engagement is essential.

The Golden Hour

So much of our success comes down to optimizing processes. As Robin Sharma teaches in his book, “The 5 AM Club”, a short period of time spent every morning, engaging in meditation, reading, and physical activity has an incredible return on investment for the rest of the day and for your life. Learn good processes early. Speaking about meditation, there is an apocryphal story in which a student asked the Buddha, "What do you get out of meditation?" and was told, "Nothing. But I lose anxiety, stress, depression, and fear.”

- **Mastering Processes and Embracing Technology:** Efficiency isn't just about speed; it's about reducing friction and freeing up cognitive energy.
  - *Workflow Optimization:* Look critically at your practice. Do you love being in your office? If not, change it. Where are the bottlenecks? Can scheduling be improved? Are you using your EMR to its fullest potential? How can consultations be streamlined? See Appendix F- Optimize your Office and OR days. Use your office staff to prefill forms and contribute to patient care in all suitable ways. Paying for help to ensure that you are doing high value tasks saves money and aggravation. The Diagnostic Assessment Programs (DAP) created in Oakville by Dr Nicole Callan, Dr Ian Choy and their teams for breast and colorectal cancer are examples – they expedite diagnosis and treatment, reducing patient anxiety and surgeon burden by having dedicated navigators and processes.
  - *Get an Office Website:* This is a simple but powerful tool. As I implemented with www.drrozario.com, a well-designed website can answer common patient questions, provide pre- and post-operative instructions, and host forms, significantly reducing calls to your staff, freeing them up for more complex patient care tasks and reducing their stress (and yours).

How do you make an office website? Try these easy-to-use sites or hire someone:

https://lovable.dev/

https://bolt.new/

https://www.cursor.com/en

- *Embrace Virtual Care:* The pandemic accelerated adoption, but virtual care offers lasting benefits. Our Oakville Virtual Care Program, using platforms like SigMail, makes communication with patients easier, improves access, and can handle many follow-ups efficiently. It requires new workflows but can enhance flexibility and productivity. Using secure messaging, my secretary can easily communicate with patients, reducing phone calls to the office and improving efficiency through asynchronous communication. This is compensation dependent- people do what they get paid to do- if you are fee for service, ensure that you are paid for it. Just like everyone in the world- you should get paid for what you do! Even nuns and priests have pensions.

- *Patient Engagement Platforms*: Online scheduling, automated reminders, satisfaction surveys, and digital check-ins streamline operations and improve experience.
- *Explore AI Scribes and AI Potential:* The burden of documentation is immense. AI-powered scribes that listen to patient encounters and draft notes are becoming increasingly viable. Keep an eye on AI developments – they hold potential for diagnostic support, predictive analytics, and automating administrative tasks, further reducing the "paperwork" burden. Modern voice to text dictation is tremendously accurate, see Appendix F Optimize your office and OR day.
- *Leverage Social Media (Strategically):* As I mentioned in a previous article, platforms like Twitter can be powerful tools for connecting with colleagues globally, sharing knowledge, learning about innovations, and even communicating with younger surgeons and trainees. Use it professionally and judiciously. Don't put anything on social media that you don't want on the front page of the newspaper
- *AI Models*. We are living in the age of large language models (LLMs). The LLM will soon replace the way we interact with the Internet, learn, and get information. They will be tremendously disruptive as many inflection points are in technology, but they also provide an opportunity to advance the way we learn, adapt, and respond to the challenges we face every day. Get comfortable with Gemini, ChatGPT, Claude, Perplexity, and the newer models that will continuously appear. The nature of how we search for information and learn will change drastically.

- **Tackling the On-Call Beast:** On-call duties are perhaps one of the most disruptive and draining aspects of surgical life. A study I cited previously showed it takes three days to recover from a night on call; sleep deprivation is directly linked to burnout and metabolic syndrome.
  - *Minimize and Consolidate:* If possible, cover no more than 24 hours at a time, and explore 12 hour models. Explore models that concentrate on-call rather than scattering it infrequently depending on your preference.
  - *The ACS Model:* The Acute Care General Surgery (ACS) service we started (Dr Manoj Sayal and Dr Ian Choy led the creation) in Oakville in 2016, hiring 3 dedicated surgeons for daytime ER and inpatient coverage (Monday-Friday), was transformative for my elective practice and work-life balance. Nights and weekends

are shared across the entire division. Patients get timely care from dedicated rested surgeons, and elective surgeons can focus on their elective practices. Since our ACS surgeons cover daytime Monday to Friday on call, despite having 11 surgeons in the division of general surgery (8 elective), my effective on-call coverage based on hours is one in 15. Studies have demonstrated that implementing an ACS model in a surgical division is associated with decreased surgeon burnout. This model can be adapted for various volumes and specialties. In their study of 2022, Fox et al, "Burnout reduction in acute care surgeons: Impact of faculty schedule change at a level 1 trauma and tertiary care center", they identified that implementing a 12 hour block of on call for their acute care surgeons reduced all burnout risk factors at 6 and 12 months. See Appendix A written by Drs. Manoj Sayal and Margaret Gordon for more details. I have experienced nothing bad about having an ACS service.

- *Lighten Post-Call Days:* Ensure your schedule allows for recovery. Starting the office later, avoiding complex elective cases, or taking the day off if possible after a weekend call makes a huge difference. You may eventually look forward to being on call to enjoy the lighter post call day. See Appendix F.

- **Optimizing OR Time and Sharing the Load:** OR time is a finite, often contentious resource.
  - *Hire More Surgeons & PAs:* This seems obvious but often faces institutional resistance. Hiring more surgeons, as we did in Oakville (24 new surgeons across specialties over six years), allows for load-sharing, reduces individual burden, and can improve wait times. Yes, this can impact individual income – we need to be open about this. A wait time of one week or one year has no effect on income. But is excessive volume at the cost of well-being sustainable? Our ENT service decided to reduce individual OR time to hire two new colleagues with existing resources. A Physician Assistant (PA) can also significantly support an ACS service or an individual practice, managing routine tasks and improving workflow. By expediting discharges, a PA can reduce length of stay and reduce costs. Use the economic argument with your institution. Find the papers on PubMed.
  - *Creative Resource Allocation:* Advocate for fair and transparent processes for allocating OR time, new equipment, and clinic space. Understand your hospital's Clinical Prioritization Process to ensure that you get the resources needed. Remember that local politics is fundamentally about who gets what. You need to be involved and at the table to advocate for your patients and your department. As surgeons, we often say we are too busy to engage in administrative tasks, but that is where the resources get allocated. Insist that meetings are placed at the beginning or the end of the day so as not to disrupt clinical activity. Get involved in the management of your surgical program.

Your Surgical Assist

You will spend a great deal of time with your surgical assistant. Depending on the policies of your organization, you may be able to select her or him yourself, or they may be assigned to your

operating room. Given the opportunity, interview for this position wisely. You will spend a lot of time with this individual, you will need their support, guidance, steady hand, and good humor. My surgical assistant for the past 15 years has been Dr Terry Riley. He claims he is retired since he only works 3-4 days per week as a full-time surgical assistant. In his past life, he was a family physician and did surgery at his posting in Campbell River, British Columbia. He had an extensive obstetrical practice. By the way, he received his medical degree from the University of Toronto in 1960. He is 92 years old. He is the best surgical assistant I have ever worked with, he has a steady hand, an eagle eye, he tells me when I lock a stitch, and he understands the Triangle of Calot like the best general surgeon. He is most eager to tell me when I am wrong! He is one of my best friends. Select your assistant wisely.

- *Manage your OR:* Remember as Captain of the ship you need to take control and manage the flow in your OR. Show up 20 minutes early to address any issues, ensure all equipment and supplies are ready, and review your notes and imaging before surgery. How do you help? Ask your staff, observe and collaborate. Get the hernia mesh or incidental supplies that you need for your cases from the surgical core and bring them to the operating room. I often walk patients to the OR which gives me a chance to chat and reassure patients. I often help the anesthesiologist with induction which frees up our staff to count and setup the room. Anything you do to help flow and reduce turnover can increase the number of operating minutes available to you and makes it clear to your team that you are willing to share the load. Be a part of the solution. Don't be a problem.
- *Machine Learning booking models:* In our institution we use the average of the last 10 procedure case times to set the minimum booking time for the next elective case. Using new machine learning models can improve your ability to get more cases done and finish on time, something that has been implemented in over 400 hospitals around the world already. See our paper from the Canadian Journal of Surgery, Appendix H: Machine Learning Model for OR Booking.

- **Regaining Control Over Workloads and Saying "No":** While system pressures exist, you retain more agency than you think. “No” is a complete sentence. There is no “but”. If you don’t feel comfortable saying no in a situation, say I’ll get back to you and check with your spouse!
  - *Schedule Protected Time:* Block time in your schedule for non-work activities is essential for your well-being – exercise, family time, hobbies, even just reading. Guard this time fiercely. I try to schedule two half-days off per week for non-clinical work and personal tasks. This allows me to work on the start-ups I am involved in. You *are* in charge of your schedule.
  - *Learn to Say No:* This is a critical skill. Say it to extra committees, unreasonable patient requests, administrative tasks that could be delegated. Healthcare institutions can inadvertently exploit physician dedication, treating our time as a "free expansion room." Your time is valuable; ensure the system values it appropriately. Need help? Resources like the one from CareerFAQs (linked in my 2024 article) can offer strategies.

- **Navigating Collegiality, Politics, and Administration:** Your hospital is a complex ecosystem. Engagement is not optional if you want change.
  - *Foster Collegiality:* Build positive relationships with surgeons, nurses, administrators, and support staff. Peer support is invaluable. We created a surgeon peer support network in our department. Initiatives like Schwartz Rounds provide a forum to discuss the emotional challenges of caregiving.
  - *Get Involved in Management & Leadership:* Politics is fundamentally about "who gets what." If you want to influence resource allocation, improve processes, or change culture, you need a seat at the table. Don't just complain; get involved. Chief of Staff, Chief of Surgery, Division Lead, NSQIP Champion, IT Lead – numerous roles offer influence. As Peter Drucker said, "The best way to predict the future is to create it." After 20 years of avoiding it, I became Chief of Surgery and found it surprisingly rewarding (95% of the time!). See Appendix J on Physician Leadership. Leadership courses (Joule, Rotman, Harvard) can equip you. Develop relationships with administrators – you often share common goals. Our Chief Financial Officer (yes that is you Hilary Rodrigues, now in Hamilton) became one of my key allies when I was Chief of Surgery. He helped me draft the economic arguments that allowed us to almost double our surgical budget. Engage with your hospital foundation; they are key allies in funding initiatives. Engage with local politicians (Mayor, MPP, MP) – they need to understand your clinical needs to advocate effectively. See Appendix I on Systemic Issues.
  - *The Surgeon Voice:* Ensure surgeons have a strong, unified voice in hospital decision-making. A departmental website (like **www.oakvillesurgery.com**) can be a platform for sharing information and advancing collective interests.

It's about playing the "Infinite Game," as James Carse described it – focusing on continuing the play, adapting the strategy, and advancing a larger vision, rather than aiming for a finite endpoint.

- **Embrace the Infinite Game Mindset:** As explored in my article on the topic, healthcare is an infinite game. There's no "winning," only striving to improve and stay in play. Focus on long-term vision and values – like the virtues Plato described (trust, compassion, courage, justice, wisdom, temperance, hope) – rather than solely on short-term metrics. A virtuous culture benefits everyone. Ask "What great work are we doing, and how do we do more?" (appreciative inquiry) rather than only "What's broken?" And get involved.
- **Redefining Prestige:** Move beyond traditional metrics like case volume or income. True prestige lies in clinical excellence, mentorship, innovation, contributing to a positive work environment, and maintaining your own well-being.
- **Managing Medico-Legal Stress:** Malpractice suits and College complaints are significant stressors. Good communication, meticulous documentation, and robust systems are protective. Chart, chart, chart! Followup on everything! Give patients the ability to come back to see you as needed. If you operate long enough you will see most complications. "Call my office or go to the ER if needed." Know that support is available – through the

CMPA and provincial physician health programs (like the OMA's Physician Help Program (PHP) led by Dr. Jon Novick in Ontario, https://php.oma.org/). Beyond these crucial resources, proactively normalizing and destigmatizing seeking mental health support is vital. Confidential counseling, therapy, and peer support groups are not signs of weakness but essential tools for navigating the inherent pressures of this profession. Encourage colleagues, trainees, and yourself to utilize these resources without hesitation. Your mental health is as critical as your physical health for sustained practice and well-being. Don't hesitate to seek confidential help for yourself or a colleague in need.

- **Navigating Complications and Building Resilience:** Surgery inevitably involves complications and adverse outcomes. These events are deeply challenging, both professionally and emotionally. It's crucial to develop mechanisms for processing them constructively. This involves transparent review (like M&M rounds), learning from errors without fostering a culture of blame, seeking support from trusted peers or mental health professionals, and focusing on system improvements. Building resilience isn't about avoiding difficulty, but about developing the capacity to navigate it, learn from it, and continue providing compassionate care without being consumed by guilt or fear.
- **Integrating Family and Life:**
  - *Prioritize Family & Childcare:* This isn't an afterthought. Plan for childcare needs. Be present for your family when you are home. Schedule family time like you schedule OR time. A full-time nanny can be a lifesaver. For surgeons navigating parenthood, this integration requires specific, intentional planning. Discuss parental leave policies early and openly with your division and hospital administration. Plan for coverage during leave and strategize for a gradual and supported return to clinical duties. Recognize that balancing surgical demands with the needs of young children requires flexibility, robust support systems (both personal and professional), and a willingness to adjust expectations during different life stages. Open communication with your partner and colleagues is essential. Remember that the healthcare system can manage without you, your children cannot. Divorce, like burnout happens slowly, and then all at once. It is bad for your mental, physical and financial health. Do your best to avoid it.
  - *Take Real Vacations:* Don't just accrue vacation days. Take them. Disconnect fully. They are essential for recharging. Turn your phone off. For that matter, turn all but essential notifications off. Have a no phone zone from 5-6pm to 7am and put your phone away (unless you are on call!)
  - *Automate Finances:* Set up automatic bill payments and investment contributions through pre-authorized deductions. Reducing financial administration frees up mental bandwidth. Remember that time in the market is more effective than timing the market. A regular contribution to a correctly selected basket of ETFs will serve you well in the future via the power of compound interest.
- **Plan Your Midlife Crisis (Proactively):** Mid-career often brings introspection. Instead of letting a "crisis" happen *to* you, anticipate it. Reflect: Are you still aligned with your "Why"? What needs adjustment? This is a natural time for recalibration, perhaps exploring new interests or shifting focus slightly – a bridge to the next phase, or a sabbatical to

recharge you. I did some foolish things in my 40s (motorcycle?), but through my wife's wise guidance, pivoted to more productive and safer endeavors such as stand-up paddleboarding, canoeing, and technology startups.

- **Plan the End (Early):** We have a 100% death rate. This isn't morbid; it's strategic. Think about financial independence goals. Consider succession planning for your practice long before you intend to retire. What legacy do you want to leave? Thinking about the end game informs decisions throughout your career. If you want to be a fit 80-year-old, you must be a much fitter 50-year-old. Sleep, weight training, walking or a cardiovascular activity, and optimizing a healthy diet addresses 90% of your health issues. Get your blood pressure checked several times a year at the pharmacy- this is a silent killer. Do these things before pursuing the supplement of the month. Ensure that you have your own primary care physician and that you pursue standard preventative maintenance.

This middle phase is about actively managing the multiple facets of your life and career. It requires vigilance, continuous learning (not just clinical), strategic use of technology, boundary setting, and deep engagement with your colleagues and institution. The one certainty of the future is that continuous learning will be essential.

Side Hustles

Many physicians, believe the only way they can earn an income by seeing patients and performing surgery. But the skills that you develop in clinical practice are in demand in startups, healthcare organizations, pharmaceutical organizations, medicolegal work, and numerous other businesses. In the age of AI, what is needed most are the soft skills that surgeons possess: the ability to communicate effectively and with compassion. Daniel Pink wrote in his book "To Sell Is Human" that most of us, most of the time are selling. When we see a patient, present them with a diagnosis and a treatment plan – aren't we convincing them to proceed with healthcare? These skills are invaluable in startups and businesses who need talented individuals with the ability to pitch. What else are you interested in? There are so many problems in society, if each of us focuses on a problem that we find fascinating, we can develop a new source of income and add value to society. Successful technology investor Naval Ravikant said, "Play long-term games with long-term people." (https://nav.al/long-term) I have an interest in technology and have collaborated in the development of a virtual care platform called SigMail. I try to listen to the opportunities that present themselves every day and regularly I ask myself- can I help with that? Would that be an interesting place to work? I am doing consulting for a pharmaceutical company to help bring a new medication (SiderAL) to market and I am learning new skills every day. What interests you? What problems could you help solve?

Check out Halo Health, TechTo, or your local startup incubator.

https://www.halohealth.ca/

https://www.techto.org/

Career Phase Checklist: Based on your current career phase, create a checklist of key elements from this article that should be in place. For early-career surgeons, this might include:

- Will and power of attorney.
- Financial automation established
- Call schedule optimized
- Support systems and mentors identified
- "Why" clearly articulated
- Office workflow processes documented and regularly updated
- Personal health practices established
- Alternative avenues of income evaluated.

Work-Life Integration Audit: Quarterly, assess how your time aligns with your stated priorities. Log one typical work week in detail, categorizing time spent across clinical work, administration, education, family, self-care, and leisure. Compare this distribution to your ideal. Iterate and improve. Whatever you are trying to improve, you will likely find a video on that on YouTube.

Five-Year Review: Create a detailed vision of your ideal professional and personal life five years ahead. Review this annually, adjusting both the vision and your current trajectory as needed.

Physical Health Markers: Track basic health metrics like sleep quality, exercise frequency, weight stability, and scheduled preventive care. See your own family doctor and get the bloodwork and tests that are indicated. Physical well-being significantly impacts professional performance and satisfaction. It's very easy to say "get physical activity and improve your health," but the challenge is sometimes the why and the how. While there are numerous avenues available, I recommend a Canadian fitness teacher named Dan Go, who has a fabulous newsletter filled with actionable insights.

https://www.dango.co/

Remember that assessment without action has limited value. For each evaluation, identify 1-2 specific improvements to implement before the next assessment cycle.

In some ways, our fulfillment and happiness are a math equation. Here are two to consider:

Happiness= what you own/what you desire

As you can see, as you reduce what you desire, you get happier. Owning things results in an interesting adaptational cycle. We desire, get a dopamine hit, we acquire, happy for awhile, and habituate to the new asset. Repeat.

ERO Event + reaction = Outcome

The outcome of what happens in life is equal to the actual event plus your reaction. Guess what you can control?

See Appendix B, Case Study

Appendix C, Resource Directory

Appendix D, Implementation Timelines

Appendix E Career Setbacks and Challenges

Appendix F Optimize your Office and OR Day

Phase 3: Learn and Earn Differently (Evolution, Adaptation, and Legacy)

The traditional "Adjourn" phase implies winding down and stopping. As my 92-year-old full-time operating room assistant, Dr. Terry Riley tells me, I will retire when I get old! The "Learn and Earn Differently" phase suggests evolution, continued contribution, and finding new ways to apply your skills and wisdom.

- **Pivot and Adapt:** Your interests and energy levels will change. This phase might involve:
  - *Shifting Clinical Focus:* Perhaps reducing complex cases, focusing on a sub-specialty niche, OR assisting, or doing more outpatient or day surgery procedures. When my mentor, Dr. Douglas Aldridge, retired, he moved to assisting non-general surgical specialties in the operating room full time.
  - *Increasing Non-Clinical Roles:* Dedicating more time to teaching, mentorship, research, administration, quality improvement (NSQIP), or innovation (like my work with Sigma Healthtech). My colleagues, Dr. Richard Casey and Dr. Tim Deakon, are well respected in the field of medical-legal work and spend significant time on that pursuit. Dr. Deakon also travels the world teaching advanced orthopedic surgical techniques. Two orthopedic surgeons at my hospital, Dr. Brad Weening and Dr. Paul Zalzal have a tremendously popular health podcast called Talking with Docs (https://talkingwithdocs.com/) , which brings good medical science to numerous popular wellness questions. They have over 1 million followers and have had a tremendous life impact on the lives of so many people. Dr. Robin McLeod, who trained many generations of general surgeons led many surgical societies and was Vice President of Clinical Programs and Quality Initiatives at Cancer Care Ontario. Dr. Andy Smith, a respected oncology surgeon, left clinical work and became the CEO of Sunnybrook Hospital in 2017. Physicians make the best CEOs of hospitals. When I slow down, if you are looking for me, chances are I will be working at the Apple Store or in the tool section at Home Depot. Where will you be?
  - *Developing New Skills:* Pursuing further education in leadership (Joule/Rotman/Harvard courses), health policy, informatics, or another area of interest. Learn a new language, musical instrument, or travel. Pursue what you are interested in.
- **Mentorship and Legacy:** Share your accumulated experience and wisdom with the next generation. Mentor residents, junior surgeons, and medical students. Meet them monthly on Zoom/Teams or in person and you will find that mentorship works both ways. Help them navigate the challenges you've overcome; you will learn more than you teach. Volunteer at an organization that interests you. This is a powerful way to contribute and find meaning.
- **Advocacy and System Change:** Leverage your experience and influence to advocate for broader system improvements. Engage with professional organizations, speak out on policy issues, use your political connections established earlier. Help shape a better future for patients and providers, and yourself. Your provincial medical association or Ministry of Health may be very receptive to collaboration.

Planning the Transition: Building on the "Plan the End (Early)" concept, this phase involves actionable steps towards retirement or significantly altered practice. This includes:

- *Financial Readiness:* Solidify retirement savings and income streams. Consult financial advisors to ensure long-term security.
- *Practice Transition:* Develop a clear succession plan. Will you sell your practice, merge with another group, or gradually hand over patients to junior colleagues? What happens to your EMR? This process takes time and careful planning. There are many transition models, including recruiting a new surgeon who joins you in your office and over a period of time as you ramp down, they ramp up. You become an advisor and eventually an assistant for them until you transition out.
- *Professional Identity Shift:* Prepare for the significant identity shift that comes with reducing or stopping clinical work. Explore activities that provide purpose and engagement outside of surgery. Remember that you are a human being who practices surgery. You are still valuable if you are no longer practicing medicine.
- *Maintaining Connections:* Plan how to stay connected with colleagues and the profession if desired, perhaps through part-time work, teaching, rounds, volunteering, or professional societies. Consider medical mission work abroad. Maintaining that connection helps maintain your identity and also keeps you in the medical ecosystem so that you can advocate for your medical care and that of your family.
- *Communicating Intent:* Clearly communicate your timeline and plans to your partners, hospital administration, and staff well in advance to ensure a smooth transition for everyone involved, especially patients. Also, to your spouse, financial advisor, CMPA, CPSO, lawyer, accountant, and banker. Get your will and power of attorney up to date.
- *Community*: Stay active and walk daily. Get a walking buddy.
  Stay in touch with friends by having coffee or lunch. Emails, texts and phone calls help keep you in touch with friends and families.
  Start a chat group with fellow retirees. Babysit grandkids. Your kids will love it and you will strengthen bonds with your grandkids. They will keep you young. You both share a common enemy.
  Travel in the off seasons.

- **Redefining Contribution:** Success in this phase isn't measured by RVUs, income, or operative volume. It's about impact – through mentorship, leadership, innovation, advocacy, and sustained contribution to the well-being of the healthcare community.
- **Continued Learning:** Stay curious. Read widely – not just medical journals. Explore philosophy, leadership, psychology, biographies. My recent reading list includes authors like Arthur Brooks, Chade Meng Tan, Jay Shetty, Ray Dalio, Adam Grant, Ryan Holiday, and Marcus Aurelius – their insights enrich life both inside and outside of medicine. Stop listening to the news, it will find you. Listen to long form podcasts and expand your knowledge base.
- **Empathy as the North Star:** Throughout all phases, but perhaps especially as you gain seniority, empathy remains crucial. As the actress Sonequa Martin-Green said (quoted in my Can J Surg article), “Empathy is inconvenient. It hurts you to empathize with someone.

We have our own pain. We don't want to take on other people's pain. But that's what's needed in this world." Empathy for patients, colleagues, trainees, and even administrators is key to navigating conflicts, fostering collaboration, and ultimately, improving care. This empathy extends to understanding that excellent patient care is intrinsically linked to caregiver well-being. Advocating for systemic changes that support surgeons is not just self-interest; it is essential for maintaining a compassionate and effective healthcare system for patients and ultimately for us. The institution's survival depends on an existential pivot to focus on caregiver wellness, rooted in empathy.

FIRE: Financial Independence, Retire Early. For many in the demanding surgical field, the pursuit of financial independence isn't solely about early retirement; it's about gaining autonomy and resilience against the systemic pressures that lead to burnout and moral injury. By embracing FIRE principles, surgeons can strategically build wealth, not just to step away from practice, but to create optionality. This might mean transitioning to a less demanding role, dedicating more time to sub-specialty passions, engaging in medical education, or pursuing non-clinical ventures. Perhaps you and your spouse simply want to travel. Early and consistent investment, compound growth, coupled with mindful spending, accelerates the journey to a financial position where income from investments can cover living expenses. This freedom allows surgeons to prioritize well-being, family, and personal interests, potentially fostering a more sustainable and fulfilling professional life. This is about choice. Adopting FIRE is about designing a career on your terms. It's about empowering yourself to say "no" to excessive demands, to choose quality over quantity in patient care, and to innovate without the constant pressure of maximizing income. This shift in mindset transforms financial planning from a distant retirement goal into an immediate tool for career longevity and personal fulfillment. It provides the ultimate antidote to burnout: the ability to redefine success and actively shape a surgical life that thrives, and ends on your terms.

A full life will offer tremendous fulfilment, joy and happiness, but with that will come your share of sadness, pain and suffering. Understand that this is the journey you are on. I highly recommend reading "Handbook for Hard Times" by Gelong Thubten.

This final phase is not about stopping, but about transforming your engagement. It's about leveraging a career's worth of learning and earning to contribute in new, meaningful, and sustainable ways, solidifying your legacy while maintaining your own vitality. Don't adjourn, but instead, evolve and adapt. See Appendix B, Case Study

Conclusion: Architecting Your Surgical Life

Surgeon burnout and moral injury are real and damaging consequences of a demanding profession operating within a strained system. However, focusing solely on the negative risk's disempowerment. By adopting a proactive, architectural approach framed by "Learn, Learn and Earn, and Learn and Earn Differently," surgeons can exert significant influence over their career

trajectory and overall well-being. Whether you like it or not, the world will transform. But how will you transform yourself? If you don't ask "what if," you will be forced to ask "what now."

What aspects of this book have been helpful for you? What concrete changes are you willing to implement? Please write them down now with a time frame to help with accountability. Please share this with a colleague who may find it helpful.

This journey requires conscious choices from the very beginning, continuous adaptation, embracing technology, mastering communication, setting firm boundaries, engaging actively in leadership and system improvement, and nurturing personal well-being and relationships. It demands acknowledging the shared responsibility – the system must evolve, but individuals must also take ownership of their choices and actions and evolve as well. You can choose your thoughts. While you may not be able to change reality, you do have the ability to select how you interpret and experience it. Many of the strategies discussed in this book optimize for efficiency but use your judgement and don't be afraid to sacrifice efficiency for meaning, or for lifestyle. Don't be in a rush to get to the next stage of your life, or even to the end. There is no pot of gold at the end of the rainbow; there is only the rainbow. Find those moments in every day where you feel, just enough. Savor and remember them.

It requires playing the infinite game – pursuing a vision of excellent patient care and professional fulfillment that is always evolving, always worth striving for. A career in surgery is an immense privilege and an honour. By thoughtfully designing our path, supporting each other with empathy, and committing to continuous learning and adaptation, we can ensure that this career is not just survivable, but deeply rewarding, long, and fulfilling. Pursue flourishing. Let's build that future, together.

Dr Duncan Rozario
Dr John Crosby

Appendix A, ACS Model
Appendix B, Case Studies

Appendix C, Resource Directory

Appendix D, Implementation Timelines

Appendix E Career Setbacks and Challenges

Appendix F Optimize your Office and OR Day
Appendix G Multimodal Opioid Reducing Script
Appendix H Machine Learning Model for OR Booking
Appendix I Burnout and Moral Injury Paper
Appendix J Physician Leadership

Appendix K Mini Z Survey

Appendix A, courtesy of Drs Manoj Sayal and Margaret Gordon

Oakville Trafalgar Memorial Hospital
Division of General Surgery - Acute Care Surgery (ACS)

ACS team responsibilities:

- ACS patients are:
  - referred from the emergency department,
  - referred from in-patient wards, and
  - transferred from any general surgeon who managed a patient on-call
- On-call coverage (i.e. fully available) on non-holiday weekdays 0700-1700 for:
  - appropriate rounding on ACS in-patients,
  - triaging and assessing new consults, and
  - operating on semi-urgent, urgent, and emergent general surgery patients
- Out-patient clinic for follow-up and to see semi-urgent referrals from the emergency department and rarely from community or hospital clinics
- Supervise PA patient care
- Participate in evening, weekend, and holiday call with the elective general surgeons
- The ACS surgeons determine amongst themselves how to divide the responsibilities

ACS team resources:

- OR time on non-holiday Tuesdays to Fridays 1200-1530
- Physician assistant support on non-holiday Mondays to Fridays 0800-1600 excluding PA vacation time
- Out-patient clinic time on non-holiday Mondays to Fridays 0900-1100
- The ACS surgeons determine amongst themselves how to divide the resources

Weekend and holiday rounding

- Covered by surgeons on-call (ACS or elective surgeons)
- The ACS surgeon on-duty before the weekend or holiday will divide the ACS in-patient list evenly and assign patients to the weekend / holiday surgeons on-call for daily rounding
- Handover at the starts and ends of weekends will be verbal or in writing, as agreed on by the surgeons involved. Consider using the EMR “Sign out” function for documentation and communication.
- The winter holiday (Christmas + New Years) call and rounding schedule will divide rounding duties to minimize handovers and to divide the rounding burden as evenly as possible

Follow-up and referrals

- Patients will follow up with the surgeon who did their surgery
- Patients who had multiple surgical procedures will follow up with the ACS surgeons
- Patients who are discharged and need care from an elective surgeon or access to elective resources (e.g. endoscopy, Hartman’s reversal, elective resection for diverticular disease)

will be referred to an elective surgeon who was involved in the patient's care during the admission. If no elective surgeon was involved in the patient's in-patient care, then the referral will go to the next elective surgeon on-call in the call schedule. However, patients with an issue related to a particular elective general surgeon's practice focus should be referred appropriately.

Evening, weekend, and holiday call

- Call outside of ACS hours is split evenly amongst all the general surgeons, both ACS and elective

Patients associated with an elective surgeon.

- Patients admitted electively will be followed by the operating elective surgeon, not by the ACS team
- Patients admitted from the emergency department with a complication of an elective surgery will be admitted by the on-call surgeon (ACS or elective) and transferred to the elective surgeon who did the elective surgery for management without ACS involvement
- The on-call surgeon consulted to care for a patient associated with a particular elective surgeon will consider the need to contact the associated elective general surgeon for review urgently

Appendix B Case Studies

Success Stories: Surgeons Who Have Thrived Across Career Phases

These **fictional,** brief, profiles illustrate how the principles in this article have been successfully implemented across different surgical contexts. I apologize to my colleagues who may recognize some aspects of themselves as my imagination is limited!

Early Career: Dr. Janet Boyko, Plastic Surgery Resident (Year 3)

Dr. Janet Boyko is navigating the demanding third year of her plastic surgery residency. Recognizing the intensity of training, she proactively implemented strategies to build a sustainable foundation for her future career. Early on, she prioritized establishing a consistent, albeit brief, exercise routine and focused on sleep hygiene whenever her call schedule allowed, understanding its impact on cognitive function. She meal preps on the weekend and has a freezer ready with nutritious meals.

She actively sought out multiple mentors, not just within plastic surgery, but also a senior staff surgeon in another specialty who exemplifies work-life integration, and a non-clinical mentor focused on financial literacy. Dr. Boyko is diligent about building her technical foundation, mentally rehearsing complex cases beforehand and using video recording for self-assessment after procedures.

Conscious of the importance of team dynamics, she makes a deliberate effort to communicate clearly and respectfully with the anesthesiology and nursing teams before and during cases, viewing them as essential partners in patient care. She ensures that she learns everyone’s name when she enter the OR. She also participates actively in her program's wellness initiatives and is mindful of fostering a supportive environment for junior residents, having witnessed the negative impact of disruptive behavior.

Despite the heavy clinical workload, Dr. Boyko makes time for introspection, regularly revisiting her "Why" – her core motivation for choosing plastic surgery, which she finds crucial for maintaining perspective during challenging rotations. She is beginning to consider the lifestyle implications of different plastic surgery subspecialties as she plans her fellowship applications. Dr. Boyko is building connections with colleagues in potential practice locations via 3 month rotations, recognizing the importance of community. A 3-month elective is like a long job interview, it allows physicians to get to know you and see whether you would be an appropriate fit, and that works both ways. She understands that her choice of a future partner will significantly impact her ability to balance professional demands with personal life. She is also starting to explore early financial planning, using simple budgeting tools and learning about debt management specific to physicians. "Residency is incredibly tough," Dr. Boyko reflects, "but taking small, intentional steps now to build good habits and seek support feels like I'm investing in the surgeon and person I want to be in the long run."

Early Career: Dr. Sarah Chen, General Surgeon (Year 5 in Practice)

After completing residency and fellowship at major academic centers, Dr. Chen deliberately chose a community hospital practice close to family support. She negotiated a 0.8 FTE position initially, allowing her to establish her practice while starting a family. By implementing virtual care for routine follow-ups and partnering with a senior colleague for call coverage during her maternity leave, she maintained continuity of care. Dr. Chen invested early in a comprehensive EMR template system and trained her office staff extensively, creating efficient workflows that allowed her to finish charting before leaving the hospital most days. She is an avid user of an AI scribe and notes a 30 minute reduction per day in her administrative duties. She is tremendously supportive of the hospital's ACS program, giving her predictable nights and weekends of on-call and protecting her elective practice. "The key was being intentional from the beginning about the practice I wanted to build, rather than just accepting the default arrangements," she notes.

Mid-Career: Dr. James Okafor, Orthopedic Surgeon (Year 15 in Practice)

After a decade in a traditional high-volume joint replacement practice, Dr. Okafor found himself increasingly burned out despite financial success. Rather than leaving surgery, he restructured his practice around his strengths and interests. He reduced his surgical volume by 30% (which reduced his on-call), started doing regular medico-legal work, and expanded his teaching role at a nearby residency program. He travels the world to do CME teaching. He hired a physician assistant who handles routine follow-ups and assists in surgery. Dr. Okafor invested in relationships with hospital administration, eventually securing funding for a specialized joint replacement program that improved efficiency and outcomes via day-surgery arthroplasty, robotics and a Rapid Access Clinic. He deliberately cultivated non-medical interests, joining a community orchestra and taking one truly disconnected vacation quarterly. "I realized I had more control than I thought. Doing less volume but higher quality work has actually improved both my satisfaction and my income," he explains.

Late Career: Dr. Elena Martinez, Vascular Surgeon (Year 30 in Practice)

As she approached her sixties, Dr. Martinez began strategically transitioning her practice. She gradually reduced complex open procedures while maintaining her vascular ultrasound and endovascular skills. She helped launch a formal multidisciplinary wound care clinic. She formalized her longtime interest in quality improvement by obtaining certification and establishing a vascular quality initiative at her institution through NSQIP. This allowed her to reduce her clinical hours while remaining professionally engaged. She deliberately recruited and mentored two young vascular surgeons, creating a succession plan for her practice. Dr. Martinez negotiated a part-time clinical role coupled with paid administrative time for quality oversight. "Many of my colleagues just worked full-throttle until they couldn't anymore, then retired abruptly and felt lost. By evolving my role gradually, I've maintained purpose and connection while adapting to my changing interests and energy," she reflects. She now takes three months off annually for

international surgical teaching while maintaining her modified practice the remainder of the year. She has a clear transition plan to stop operating in 5 years.

Academic Pathway: Dr. Michael Wong, Surgical Oncologist (Year 20 in Practice)

Dr. Wong initially pursued a traditional academic track with heavy clinical, research, and administrative responsibilities. After nearly burning out during his tenure process, he recognized the need for significant changes. He negotiated protected research time with clear deliverables rather than trying to conduct research during clinical "downtime." He deliberately developed expertise in minimally invasive approaches that reduced his physical strain during long cases, and pioneered the introduction of robotics at his institution which further helped with the challenging ergonomics of surgery. He became selective about committee work, focusing on those with meaningful impact rather than accepting every invitation. Most importantly, he created firm boundaries between work and home, including a "no work email after 8pm" policy and scheduling family events with the same priority as professional commitments. "Academic surgery rewards those who say yes to everything, but that's not sustainable. I've learned that doing fewer things with excellence and purpose yields more satisfaction and often more recognition than trying to do everything," he observes.

Appendix C Resource Directory

Professional Development Resources:

- Physician Leadership Programs:

  - Joule Physician Leadership Institute: www.joulecma.ca/learn

  - Rotman School of Management Physician Leadership Program: www.rotman.utoronto.ca/ProfessionalDevelopment/ExecutivePrograms/Programs/PhysicianLeadership

-Schulich School of Business Healthcare

https://execed.schulich.yorku.ca/category-leadership/

  - American College of Surgeons Leadership & Advocacy Summit: www.facs.org/advocacy/participate/summit

- Harvard: Leadership Strategies for evolving Health Care Executives

https://hsph.harvard.edu/events/exec-ed-leadership-strategies-for-evolving-health-care-executives-3/

-Stanford Medicine: Physician Leadership Certificate Program

https://med.stanford.edu/cme/featured-programs/physicianleadership.html#overview

-CMPA Education and workshops

https://www.cmpa-acpm.ca/en/education-events

- Communication Skills:

  - VitalTalk (Communication in difficult scenarios): www.vitaltalk.org

  - Crucial Conversations (Book and training): www.cruciallearning.com

- Efficiency and Process Improvement:

  - Institute for Healthcare Improvement Open School: www.ihi.org/education/IHIOpenSchool

- Lean Six Sigma for Healthcare
https://www.6sigmacertificationonline.com/certified-lean-healthcare-professional

Financial Resources:
- Physician-Specific Financial Education:
The Loonie Doctor
https://www.looniedoctor.ca/

- Facebook, Physician Financial Independence (Canada):
A closed group open only to physicians, contact Dr Paul Healey

- Canadian Medical Association Personal Finances
https://www.cma.ca/physician-wellness-hub/topics/personal-finance

- Retirement Planning Tools:
- MD Management Retirement Savings Calculator
https://mdm.ca/learn/retirement-savings-calculator

Well-being Resources:

Dr. John Crosby has been writing and teaching physicians how to be the best versions of themselves for many years. I highly recommend his website and YouTube videos

https://www.theintroverteddoctor.com/drjohncrosby

- Physician Health Programs (By Province):
- Ontario: https://php.oma.org/
- British Columbia: www.physicianhealth.com

- Alberta: www.albertadoctors.org/services/pfsp

- Mindfulness and Stress Management:
  - The Happier App: https://www.meditatehappier.com/ (meditation app designed for skeptics)
  - Headspace App: https://www.headspace.com/

- Physical Well-being:
  - The Seven-Minute Workout App (for time-limited exercise): https://www.seven.app/

-Dan Go, fitness trainer
https://www.dango.co/

  - Precision Nutrition: https://www.precisionnutrition.com/

Technology Tools
- Practice Efficiency:
  - Dragon Medical One (medical dictation): www.nuance.com/healthcare/provider-solutions/speech-recognition/dragon-medical-one.html
  - SigMail (secure virtual care platform): https://sigmahealthtech.com/

- Personal Productivity:
  - Todoist (task management): www.todoist.com
  - Calendly (scheduling): www.calendly.com
  - Notion (integrated workspace): www.notion.so
-Wisprflow (A very accurate voice dictation system, I currently use.): https://wisprflow.ai/about
- Super Wispr, another voice dictation system. https://superwhisper.com/
- AI Scribe System to evaluate. Heidi Health.: https://scribe.heidihealth.com/

Professional Organizations:
- Canadian Association of General Surgeons: https://cags-accg.ca/

- American College of Surgeons: https://www.facs.org/
- Association of Women Surgeons: https://www.womensurgeons.org/
- Society of Black Academic Surgeons: https://www.sbas.net/
- Canadian Medical Association: www.cma.ca
- Provincial Medical Associations (e.g., www.oma.org)

Books and Reading:

- Career Development and Leadership:
  - "Start With Why" by Simon Sinek
  - "Atomic Habits" by James Clear
  - "The Infinite Game" by Simon Sinek
  - "Extreme Ownership" by Jocko Willink and Leif Babin
 -“Exception to the Rule” by Rea, Stoller, Kolp
 -“Tools of Titans” by Tim Ferriss
--“Tribe of Mentors” by Tim Ferriss
 -“The Almanack of Naval Ravikant” by Naval Ravikant
 -“Principles” by Ray Dalio
 -“To Sell is Human” by Daniel Pink
 -”On Leadership for Healthcare” by Harvard Business Review
 -“Limitless” by Jim Kwik
“High Performance Habits” by Brendan Burchard.
"Never Split the Difference" by Chris Voss.
“Think Again” by Adam Grant.
“Zero to One” by Peter Thiel.
“Principles” by Ray Dalio.

Well-being and Life Philosophy:

"Handbook for Hard Times" by Gelong Thubten
“The Monk's Guide to Happiness” by Gelong Thubten.
"Meditations" by Marcus Aurelius
"The Daily Stoic" by Ryan Holiday

"The Joy of Leadership" by Tal Ben-Shahar and Angus Ridgway

“Think Like a Monk” by Jay Shetty

”The Lion Tracker’s Guide to Life” by Boyd Varty

“Joy on Demand” by Chade-Meng Tan

“The Wealth Money Can’t Buy” by Robin Sharma

“The 5AM Club”, by Robin Sharma

“The Five Types of Wealth” by Sahil Bloom.

“Outlive: The Science and Art of Longevity.” by Peter Attia.

"The Myth of Normal: Trauma, Illness, and Healing in a Toxic Culture" by Gabor Mate.

Build the Life You Want by Arthur C. Brooks and Oprah Winfrey

- Financial Management:

- "The Value of Simple" by John Robertson

- "The Physician Philosopher's Guide to Personal Finance" by James Turner

-“The Simple Path to Wealth (Revised & Expanded 2025 Edition): Your Road Map to Financial Independence and a Rich, Free Life “ by JL Collins

-“The Psychology of Money: Timeless lessons on wealth, greed, and happiness” by Morgan Housel

-“Algebra of Wealth” by Scott Galloway

Podcasts:

- "White Coat, Black Art" - CBC Radio on healthcare culture

- "The Tim Ferriss Show" – Tim Ferriss, Deep discussions on performance and well-being

- "Huberman Lab" – Dr Andrew Huberman, Science-based tools for mental health and performance

- "Making Sense with Sam Harris" - Long-form conversations on philosophy and society

-“All In”- The latest in technology and finance

-“On Purpose with Jay Shetty” – a leader in personal wellness

-”The Happiness Lab” – Laurie Santos, researcher in happiness

-“Feel Better Live More” – Dr Rangan Chatterjee, personal wellness

-“The Dhru Purohit Show” – Dhru Purohit, personal wellness

-“The Rich Roll Podcast” – Rich Roll, personal development

-“The Diary of a CEO” – Steven Bartlett, interviews the world’s most influential people

-“Lex Friedman Podcast” – Lex Fridman long form podcast with the world’s most influential people

-“ Modern Wisdom” - Chris Williamson on a variety of fabulous topics and lessons from the world's greatest thinkers.

Appendix D

Implementation Timeline

Implementation Timeline: Key Actions by Career Stage

Training/Fellowship Stage:

- Immediately:
  - Identify and connect with multiple mentors across different domains
  - Begin retirement contributions, RRSP, even small amounts
  - Get disability insurance.
  - Consider Tax free Savings Accounts (TFSA), and Registered Home Ownership Savings plan (RHOSP)
  - Investment plans are as easy as selecting three exchange-traded funds and putting an appropriate amount in monthly, done automatically.
  - Open a personal line of credit so that you have easy access to at least $50,000 on a rapid basis. Remember that you are a physician, a good credit risk, negotiate an excellent interest rate, as close to the bank prime rate as possible.
- Will and power of attorney
- Establish basic exercise and stress management routines
- Automate as many aspects of your life as possible so that your cognitive load is reduced.

- 1 Year Before Practice Start:
  - Research practice locations thoroughly, including call structures
  - Begin building financial literacy through courses/reading
  - Develop clear vision for ideal practice model

- 6 Months Before Practice Start:
  - Negotiate physician contract with attention to call expectations and autonomy
  - Establish emergency fund of 3-6 months' expenses
  - Connect with physician health program in your province if needed
  - Negotiate office lease, internet, telephone, life insurance, liability insurance, disability insurance - if you did not start that in residency.

Early Career (Years 1-5):

- First 90 Days:

  - Create efficient documentation templates and workflows with virtual care

 -AI scribe and voice dictation

  - Establish clear communication protocols with office staff and employment contracts to allow dismissal with payment in lieu of notice. Check your local employment standards authority and consult an attorney as needed.

  - Set up automatic savings and investment contributions and bill payments. Reassess monthly, and when stable, quarterly. Automate, but check on a regular basis.

 -Establish an accounting system, consider incorporation if suitable for your circumstances, tax planning, income via dividend and/or salary.

- Formal training is completed, what have you deferred doing in life that is important to you? What hobbies, travel, other skills do you want to pursue?

- By End of Year 1:

  - Develop explicit criteria for case acceptance/referrals

  - Create protocols for managing after-hours communications in collaboration with colleagues

  - Connect with mentors specifically for career and financial guidance

 - Reassess staff, regular performance reviews documented.

 - Regular plan for CME

 - Optimize schedule for personal and family needs

- By Year 3:

  - Review and optimize call schedule arrangements, and post-call day options

  - Consider involvement in one high-impact hospital committee

  - Ensure disability and life insurance are optimized

  - Evaluate practice efficiency and implement needed changes

- By Year 5:

  - Begin mentoring residents/medical students (if applicable)

  - Consider specialized training in area of interest

- Conduct comprehensive financial review with advisor
- Evaluate whether current practice model is sustainable long-term, otherwise adjust

Mid-Career (Years 6-20):

- By Year 7:
  - Develop leadership skills through formal training and courses
  - Consider changes to practice focus based on interests/demands
  - Evaluate partnership or practice ownership opportunities if applicable.
- Consider other business opportunities and income streams.

- By Year 10:
  - Become selective about committee/administrative involvement
  - Review retirement planning progress and adjust as needed
  - Consider teaching/speaking opportunities in areas of expertise

- By Year 15:
  - Evaluate work patterns and make adjustments for sustainability
  - Consider sabbatical or significant break if needed
  - Begin exploration of potential "second act" interests
  - Develop specific succession planning for leadership roles

- By Year 20:
  - Update estate planning and financial directives
  - Consider shift toward mentorship/teaching if desired
  - Evaluate physical demands of current practice and adjust if needed

Late Career (Years 21+):

- 5-7 Years Before Planned Transition:
  - Begin formal succession planning for your practice
  - Consider gradual reduction in complex cases or call duties
  - Explore teaching or consulting opportunities

- 3-5 Years Before Planned Transition:
  - Meet with financial advisor to ensure retirement readiness
  - Consider phased retirement options with your institution
  - Begin developing non-medical interests more actively

- 1-2 Years Before Planned Transition:
  - Formalize transition plan with colleagues/administration
  - Transfer complex patients to colleagues systematically
  - Consider locum work or international opportunities

- During Transition:
  - Maintain connection through teaching or committee work
  - Mentor younger surgeons in practice management
  - Schedule regular social connections with former colleagues

Remember that these time frames are flexible guidelines, not rigid requirements. Each surgical career follows its own unique trajectory, but intentional planning at these key intervals can prevent drift and maintain alignment with your values and goals.

Appendix E Career Setbacks and Challenges

Navigating Major Setbacks: When the Path Takes Unexpected Turns

Even the most carefully planned surgical career will encounter significant challenges. How you respond to these setbacks often determines whether they become career-defining catastrophes or growth opportunities.

Serious Complications or Patient Death:

Every surgeon eventually faces serious complications or patient deaths that shake their confidence. When this occurs:

- Seek CMPA guidance, talk to your division lead, department chief or chief of staff.
- Seek immediate peer support through formal or informal channels
- Participate fully in M&M processes, but recognize their limitations for personal processing
- Consider working with a therapist experienced in physician issues
- Temporarily reduce complex case volume if needed, but avoid prolonged avoidance
- Remember that psychological recovery often takes longer than you expect
- Identify specific learning and system improvements to implement
- Share your experience with residents to normalize this aspect of surgical practice

Malpractice Litigation:

A lawsuit, regardless of merit, is emotionally devastating for most surgeons. Research shows 95% of surgeons will face at least one lawsuit during their career:

- Immediately engage CMPA counsel and follow their guidance precisely
- Find a trusted confidant outside the case to process emotions
- Recognize that cases often last years—develop sustainable coping strategies
- Maintain meticulous documentation, but avoid defensive medicine practices that don't benefit patients
- Consider leadership or teaching roles in risk management education
- Remember that most lawsuits don't reflect quality of care but communication issues and complications.

Physical Injury or Health Crisis:

Surgeons face unique challenges when personal health crises affect technical abilities:

- Consult occupational health experts about accommodations before making career decisions
- Consider subspecialties or practice models less affected by your specific limitation
- Explore technology solutions (e.g., surgical magnification, ergonomic adaptations)
- Evaluate administrative, teaching, or consulting roles that leverage your expertise
- Connect with physician support programs specific to recovery and accommodation
- Be transparent with partners about limitations while emphasizing continuing contributions

Institutional Conflict or Job Loss:
Conflicts with administration, partners, or organizational changes can threaten your position:
- Document all relevant interactions and review employment contracts immediately
- Seek counsel from both CMPA, legal advisors and trusted mentors
- Consider mediation before escalating to formal proceedings
- Maintain professionalism in all communications, recognizing potential future disclosure
- If separation becomes necessary, negotiate for appropriate transition time
- Use networks developed throughout your career for new opportunities
- Consider whether the conflict signals a need for practice model change

Burnout or Mental Health Crisis:
When burnout progresses to crisis level:
- Recognize that seeking help demonstrates wisdom, not weakness
- Contact your provincial Physician Health Program for confidential support
- Consider whether a formal leave of absence is appropriate
- Address immediate coverage needs through partners or locums
- Use the crisis as information about what needs fundamental change
- Return gradually with explicit boundaries and expectations
- Share your experience when appropriate to reduce stigma

Family or Personal Crisis:
Divorce, death of a family member, or caring for ill family/parents create profound stress:
- Communicate clearly with partners about temporary coverage needs
- Consider short-term practice modifications (reduced hours, simplified case mix)

- Delegate administrative responsibilities where possible
- Recognize increased error risk during high-stress periods
- Use employee assistance programs for practical support (legal guidance, counseling)
- Remember that your medical career is a marathon, not a sprint

The resilience to navigate these challenges doesn't come from merely "toughing it out," but from preparation, appropriate support-seeking, and the perspective that setbacks are inevitable components of a long career rather than defining failures.

Appendix F

Optimize your Office and OR Day

Everyone has different issues and needs. This is the model of my week but please adopt anything that is helpful to your situation and let me know how you optimize your week. My children are grown and out of the house at this point.

A typical week. You may look at this and think, "Does he think he's in the army?" No, I'm not in the army, but I do like routine. I reduce cognitive load by adopting a routine for the fixed portions of life. After 27 years of marriage, my wife simply puts up with this.

Monday

If I am on call Friday/Sunday- I book Monday fully off, and start the day when I can, otherwise:

0500 Wake up, drink a glass of water

0510 20 minutes of meditation

0530 30 minutes on the treadmill wearing a 40 pound weighted vest

Some people don't enjoy walking on a treadmill. In that case consider the great outdoors. Placing a television on the wall in front of the treadmill makes it a very different story for some people. Add incline for greater workout. Enjoy your favorite show from Disney+, Prime, APPLE TV, or Crave, a Podcast, or watch and learn something from Youtube can make the time pass quite quickly. Or silently enjoy your walk.

If you have not tried a weighted vest, I strongly suggest trying it. Your exercise adaptation depends upon progressive overload. Your workout will be far more intense with added weight. You can start with 4 pounds and work your way up to 40 pounds with this vest system.

RUNMax 4lbs-40lbs Adjustable Weighted Vest with Shoulder Pads option. Workout vest for men and women

https://www.amazon.ca/dp/B01AJ12MBE?ref_=ppx_hzsearch_conn_dt_b_fed_asin_title_1&th=1

0600 20 minutes of weights and calisthenics Mon/Thurs/Sat

0620 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola. To reduce cognitive load and make things easy, I rotate through a fixed menu option like this. You need to pursue what works for your system.

While eating, read the newspaper, followed by my current book, which is, " The 5 types of wealth" by Sahil Bloom. Highly recommended."

0650 Shower

0715 Leave for work

0740 Ready for work, review the day's patients in the EMR, clear the inbox and respond to messages in my EMR, and SigMail- the patient messaging system I use. Secure messaging with patients is a billable service in Ontario and makes your secretary's life easier.

0800 Outpatient department minor procedures

1130 Cross street to office. Lunch and read. For lunch see Sunday. Several times a month I have a Zoom meeting over lunch

I collaborate with a few startups in the field of virtual care and pharmacology so I have meetings scattered through the week. I try to schedule them into office days. Sometimes that doesn't work,

and I need to have a meeting in the evening, on weekends, or cancel clinical work. I try to do meetings Monday, Wednesday, Thursdays when I'm in the office.
12:45 Review afternoon patients in EMR to plan for care, block OR time, identify missing imaging, pathology or labs and ask my secretary to obtain those.
13:00 Start office. To avoid the need for rushing, my secretary books an in-person consult, followed by a phone call to a patient, and repeat. The phone calls are booked in a 1 hour window to give me flexibility. I do a lot of post-operative assessments on the phone, and book endoscopy and outpatient procedures with a pre-procedural call to the patient to get a history and get consent. Some of these interactions need to be in person. All patients requiring surgery, or physical examination, or with challenging diagnoses such as malignancy are seen in person. My ratio of in-person to phone calls is about 3 to 1. Phone calls to patients are a billable service in Ontario.
After seeing or talking to each patient I:

1. Bill encounter in my EMR
2. Generate any imaging requisitions, OR bookings, messages to my secretary for additional pre-surgical consults such as anesthesiology or cardiology
3. Dictate a consult note using the EMR template, Wispr Flow voice dictation, and the standard macros I have entered into my computer. I am currently evaluating the voice-to-text dictation app called Wispr Flow. Test out different systems and see what works for you. A monthly subscription that costs you $10-$15/month yet saves you thousands of dollars a month has a very clear return on investment.
4. eFax the consult note to the family physician. Yes, I am embarrassed to say that I continue to use the fax machine to receive and send consultations. Please change that!

This takes me about 3 minutes to do
Macros. I say the same thing on a regular basis, so on the Macintosh I have macros that allow me to enter a key letter which becomes a block of test
Example:
‘c becomes , “I have recommended a colonoscopy for the patient and have described the need for pre-procedural bowel preparation, risks of the procedure, including a one in 2000 risk of perforation or bleeding associated with the procedure, and the 5% miss rate. I explained the use of sedation, and the recommended intervals for repeat colonoscopy. The patient has consented, and we will make the necessary arrangements.”
I have a series of macros for the standard blocks of text that I use. As I explain surgery to my patients in the same fashion all the time, the macro is an accurate representation of what I say.
I have been testing AI scribes but have not implemented one yet. For my workflows, I am not impressed so far with the current products. This is one I am testing
https://scribe.heidihealth.com/
Apple’s voice dictation is acceptable, but newer system such as Wisprflow and Superwhisper are even faster and more accurate
https://wisprflow.ai/
https://superwhisper.com/

My secretary schedules two 10 minute breaks each half day in the office for “Nothing”. I like nothing. Nothing can be used as needed, for something, or just for nothing. Sometimes you just

need some time to catch your breath or recharge after a tough patient. After a difficult patient interaction, 30 seconds of slow, deep breathing can work wonders. Increase your vagal tone, slow down your heart rate, and you will feel better. Schedule it, and hopefully you don't need it. Perhaps 10 minutes of chair meditation would be useful.
1630 Finish office and head home, sometimes a Zoom meeting. I no longer take clinical work home.
1700 Meal prep with my spouse, chat, clean up, free time
2030 30 Minutes on treadmill
2100 Read for 30-45 minutes and bed. You've got it. I go to sleep at the same time as my 6-year-old did 20 years ago.

Tuesday
0500 Wake up, drink a glass of water
0510 20 minutes of meditation
0530 30 minutes on the treadmill wearing a 40 pound weighted vest
0600 20 minutes of reading
0620 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola
While eating, read the newspaper, followed by my current book
0650 Shower
0715 Leave for work
0740 Ready for work, review the day's patients in the EMR, clear the inbox and respond to messages in my EMR, and SigMail- the patient messaging system I use. I let my nursing staff and anesthesiologists know that I have arrived, ask how I can help, and get ready for the day.
0800 OR day to 1530
1530 Meetings sometimes. If I finish early, I chat with our charge nurse, Trish, and ask if I can help clear a case off the on-call board. Remember, we all have a collective responsibility to ensure the smooth operation of our operating room. Collaborate with the boss.
1600 Finish and head home
1700 Meal prep with my spouse, chat, clean up, free time
2030 30 Minutes on treadmill
2100 Read for 30-45 minutes and bed

How to optimally book an OR day
Booking an operating room day is an art. What is your chronotype? Are you a morning person? Are you an afternoon person? Do you do your best cognitive work early in the day or later in the day? This determines whether you book a complex colon resection as first case, or as last case. Sometimes it's helpful to have smaller cases like hernia repairs between the larger and more complex cases. I try to book and leave a 30 minute buffer at the end of the operating day so that I don't get stressed out if I am running late with one case in the day.
If I finish early, I always check with our wonderful charge nurse, Trish, to see if there are add-on cases on the operating room urgent board that I can assist with. Clearing an appendix or

gallbladder earlier in the day can make the lives of our colleagues on call in the evening much easier.

Wednesday
0500 Wake up, drink a glass of water
0510 20 minutes of meditation
0530 30 minutes on the treadmill wearing a 40 pound weighted vest
0600 20 minutes of reading
0620 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola
While eating, read the newspaper, followed by my current book
0650 Shower
0715 Leave for work
0740 Ready for work, review the day's patients in the EMR, clear the inbox and respond to messages in my EMR, and SigMail- the patient messaging system I use.
0800 Colonoscopy and Gastroscopy in GI
In between cases, I phone, all the patients I operated on the day before to assess their pain control and answer any questions they may have. I find patients don't remember discussions that happen on the day of surgery and often have questions. In Ontario, this is billable. To alleviate concerns I talk to all of my surgical patients the day after and also assess their pain control as I only prescribe 10 tablets of narcotic. 10% of patients need more than that. See **Appendix G** Standardized Prescription. Also, have a look at our paper in the Canadian Journal of Surgery: A systems approach to the management of acute surgical pain and reduction of opioid use: the approach of Oakville Trafalgar Memorial Hospital.
http://www.duncanrozario.com/files/pain.pdf

1130 Lunch and read and sometimes Zoom meetings
1245 Review afternoon patients in EMR to make a plan for care, identify missing imaging, pathology or labs
1300 Start office. To avoid the need for rushing, my secretary books an in-person consult, followed by a phone call to a patient, and repeat. The phone calls are booked in a 1 hour window to give me flexibility.
1630 Finish OR and head home
1700 Meal prep with my spouse, chat, clean up, free time
2030 30 Minutes on treadmill
2100 Read for 30-45 minutes and bed
Wednesday is my favorite on-call day as I have a full office day Thursday normally. If I am on-call Wednesday, I start the Thursday office at 12:00. If I operate through the night Wednesday, I will sleep in Thursday.

Thursday
0600 Wake up, drink a glass of water
0610 20 minutes of meditation
0630 30 minutes on the treadmill wearing a 40 pound weighted vest

0700 20 minutes of weight and calisthenics
0720 20 minutes of reading
0740 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola
While eating, read the newspaper, followed by my current book
0810 Shower
Free time
1000 or (1200 start if on call Wed) Office
16:30 Office done, head home
1700 Meal prep with my spouse, chat, clean up, free time
2030 30 Minutes on treadmill
2100 Read for 30-45 minutes and bed

Friday
Friday is flex day. Extra OR day, meetings, startup work, conferences, meet the Bell Canada repairman to fix the internet, home projects, lunch out with my wife if she is free, etc
0600 Wake up, drink a glass of water
0610 20 minutes of meditation
0630 30 minutes on the treadmill wearing a 40 pound weighted vest
0700 20 minutes of reading
0720 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola
While eating, read the newspaper, followed by my current book
0750 Shower
0800 Flex day

Weekend

Sat + Sunday
0600 Wake up, drink a glass of water
0610 20 minutes of meditation
0630 30 minutes on the treadmill wearing a 40 pound weighted vest
0700 20 minutes of reading
Weights and calisthenics on Sat 20 min
0720 breakfast of 1 cup frozen fruit microwaved + 1 cup of 17% protein Greek yogurt + 0.5 cup granola
While eating, read the newspaper, followed by my current book
0800 Shower and free day
Sunday afternoon is lunch prep time. I bake a tray of chicken, fish, or tofu and prep vegetables. Freeze a portion. Each evening prep lunch of salad (variety of vegetables) and protein- eggs, beef, chicken, fish, tofu. Each evening lunch prep takes no more than 10 minutes, this stops me from eating badly. But I have a stash of dark chocolate in my office for after lunch!

Appendix G Pain Control

Discharge Instructions for Pain Management
Minor Surgery

It is normal to have some discomfort after your operation, you will not be pain-free. During your operation, local freezing and pain medication were given to help with pain. Your pain will improve day by day. We want you to be able to do your daily activities comfortably: eat, sleep, deep breathe, and mobilize.

Ice Therapy: Many patients find an ice pack, or frozen peas, wrapped in a cloth, helps reduce the swelling and discomfort at the incision for the first few days after surgery. This can be applied for 15 minutes on, 15 minutes off at a time, while awake, for the first 5 days.

Medication Instructions

Please take your medications with food and follow all of the instructions given to you by your pharmacist.
Please notify your surgeon if you have a history of Stomach ulcers, Liver disease, Kidney disease or Allergies to any of these medications.

First 2 days (48 hours) after surgery:

1. **Acetaminophen** 500 mg (extra-strength Tylenol): Take 2 tablets orally (1000mg dose), every 6 hours, for 2 days.
2. **Ibuprofen** 200 mg (Advil): Take 2 tablets orally (400mg dose), every 6 hours, for 2 days. Do not take ibuprofen if it is not prescribed by your physician.

To maximize your pain relief, it is recommended that you take both of these medications (only if both are prescribed) at the same time, every 6 hours whether you are having pain or not. These two medications work in different ways to reduce pain, so taking them at the same time, is safe to do.

The maximum dose of acetaminophen is 4000mg daily from all sources.

This medication plan should relieve most of your discomfort. Studies show that 90% of patients will have good pain control and will not require anything stronger.

You will be given a prescription for a strong pain medication called **Hydromorphone (Dilaudid)** DO NOT FILL THIS PRESCRIPTION. Only fill it if the Acetaminophen and Ibuprofen do not control your pain in the first 6 hours .

After 2 days (48 hours):

1. **Acetaminophen** 500 mg (extra-strength **Tylenol**): Take 1-2 tablets orally (500mg-1000mg) only as needed, as often as every 6 hours.
2. **Ibuprofen** 200 mg (**Advil**): Take 2 tablets orally (400mg dose), only as needed, as often as every 6 hours. Take this only if prescribed by your physician.

Medication Disposal: Please return any leftover **Hydromorphone (Dilaudid)** to your pharmacy.

-Adapted from the Department of Surgery, University of Western Ontario, rev7, 24 April 2019

Halton Healthcare

❒ **Georgetown Hospital**
1 Princess Anne Dr., Georgetown, ON L7G 2B8
☎ (905) 873-0111

❒ **Milton District Hospital**
725 Bronte St. S., Milton, ON L9T 9K1
☎ (905) 878-2383

❒ **Oakville Trafalgar Memorial Hospital**
3001 Hospital Gate, Oakville, ON L6M 0L8
☎ (905) 845-2571

PRESCRIPTION

Affix Patient Label

Please do not write in shaded area

Age _____ Wt (if < 12 yrs) _____

Allergies_____

℞

DATE _____

Acetaminophen 1000 mg PO q6h x 48 hours,
give first dose at: _____

Ibuprofen 400 mg PO q6h x 24 hours,
give first dose at: _____

HYDROmorphONE (Dilaudid) 1-2 mg PO q6h PRN (Mitte: 10 tablets x 1mg)

Additional medication orders:

Entire Prescription expires after 30 days.

Signature - Dr. _____

Print - Dr. _____ **CPSO#** _____

Prescriber to strike through and initial unauthorized medications

Form # H3867 05/2018

DISCUSSIONS IN SURGERY •
DISCUSSIONS EN CHIRURGIE

Can machine learning optimize the efficiency of the operating room in the era of COVID-19?

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DOI: 10.1503/cjs.016520

SUMMARY

The cancellation of large numbers of surgical procedures because of the coronavirus disease 2019 (COVID-19) pandemic has drastically extended wait lists and negatively affected patient care and experience. As many facilities resume clinical work owing to the currently low burden of disease in our community, we are faced with operative booking protocols and procedures that are not mathematically designed to optimize efficiency. Using a subset of artificial intelligence called "machine learning," we have shown how the use of operating time can be optimized with a custom Python (a high-level programming language) script and an open source machine-learning algorithm, the OR-Tools software suite from the Google AI division of Alphabet Inc. This allowed the creation of customized models to optimize the efficiency of operating room booking times, which resulted in a reduction in nursing overtime of 21% — a theoretical cost savings of $469 000 over 3 years.

The coronavirus disease 2019 (COVID-19) pandemic resulted in the declaration of an emergency on Mar. 17, 2020, under the *Emergency Management and Civil Protection Act*, leading to the cessation of elective surgery in Ontario. It was estimated that between March 15 and June 13 there was a provincial backlog of 148 364 surgeries.[1] A gradually staged resumption of services started on May 16, 2020, exacerbating existing wait list issues and resulting in significant morbidity and mortality for patients. At our institution, we use a surgeon's average procedure time for their last 10 cases as the booking time for future procedures. Mathematically, does that optimize the utilization of operative time? Cases that run late incur staff overtime costs, affect physician scheduling, decrease morale and delay the ability to complete urgent or emergent cases. Conversely, operating rooms (ORs) that finish early do not maximize the use of available time and are a waste of costly resources. In some centres, cases that will finish late are cancelled, resulting in significant patient dissatisfaction.

Oakville Trafalgar Memorial Hospital is a 469-bed facility in Oakville, Ontario, that performed 13 717 surgical procedures in 2017–18. In December 2015, we moved to a new 1.5-million-square-foot facility; it is 3 times larger than the previous hospital and has 10 ORs.

OPTIMIZING BOOKING TIMES USING A MACHINE LEARNING MODEL

The current common method of booking operative procedures using the average of the last 10 case times results in about 50% of cases running overtime, as case times follow a Gaussian distribution. Procedures with highly variable case times can cause a cascade of delays that result in more ORs running overtime.[2]

An optimization problem is defined using a decision variable for every type of procedure. Each variable is bound by the range of actual case times in the data set. An OR is considered to be running overtime if the sum of actual

procedure times plus changeovers exceeds the scheduled case time for a given day. At our institution, an OR is considered to be running undertime if the actual finish time is more than 15 minutes earlier than the scheduled finish time for a given day.

The objective of the optimization is to minimize both overtime and undertime cases in an OR. The relative cost of running undertime and the cost of running overtime at a local institution can be entered into the Python script (Appendix 1, available at canjsurg.ca/016520-a1). The Python script reads from an Excel spreadsheet containing a set of booking data from our PICIS OR booking system (https://www.harriscomputer.com/en/), formatted as shown in the example surgeon case audit report (Table 1). Our goal was for 80% of ORs to finish on time and to minimize the number of ORs that finish early. As such, the overtime cost is defined as $|x - 0.2n|$, where x is the number of rooms that run overtime in the model, and n is the number of days in the data set. The undertime cost is defined as (y) where y is the number of rooms that run undertime in the model. By multiplying these costs by different weights appropriate for a specific institution, the priority put on overtime/undertime rooms can be changed to yield different scheduling times.

Principles such as conflict-driven clause learning and intelligent backtracking are used to efficiently create a model that satisfies all the constraints and meets the objective. The model assumes that if an OR is available early, both the surgeon and the patient will also be available early.

Using 36 months of anonymized historical OR booking data from 2017 to 2019, comprising 10 553 cases (Appendix 1), a custom-created Python script and the OR-Tools optimization suite, we entered our desired optimization parameters to obtain ideal procedure times, and then assessed retroactively how our new model could have changed outcomes. We used OR patient-in-room and patient-out-of-room times for 15 surgeons from multiple divisions.

Mean versus machine learning model results

The full set of anonymized data are shown in Table 2. Using the standard mean case time method, ORs were overtime 48% of the time and undertime 37% of the time. ORs finished within 15 minutes of the scheduled finish time 15% of the time.

If the scheduling times calculated by the machine learning model had been used, those same ORs would have been overtime 27% of the time and undertime 18% of the time. This would result in the completion of 97% of the previous volume of cases in the standard time, with the same number of OR minutes used. In turn, this would result in an overtime cost savings of $469 000 over 3 years (approximate rate of 2.5 nursing staff per room at $75 per hour, minimum 15-minute block). With the scheduling times suggested by the model, ORs would finish within 15 minutes of the scheduled time 55% of the time, yielding a much more consistent finish time.

We have provided in Appendix 1 all of the anonymized, raw data which show the scheduling time calculated by both methods for the 10 most common procedures of 15 surgeons from multiple divisions.

Discussion

The authors of the pivotal book *Prediction machines*[3] state that, "prediction is at the heart of making decisions under uncertainty," and that the drop in the cost of prediction is the key way that will democratize the power of artificial intelligence. Historical OR booking data are a well annotated, big data set that leads well to machine learning optimization to predict future outcomes and can easily be used in an iterative fashion to continuously improve.

Cost-effective predictions of operative booking times are crucial to optimizing the efficiency of the OR. In future models this could be done in real time to predict case completion times as circumstances (e.g., intraoperative complications) change during a case.[4]

The machine learning model developed at our institution is applicable to other institutions, which can use their own historical data to predict future models. Local constraints (e.g., the priority placed on undertime and overtime finishes, overtime rules) can be customized into the script to produce relevant booking times. Cases that inherently have greater variation (e.g., complex colonic resections) introduce more error into predictions.

Surgeon estimates of case times can be inaccurate, and historic patterns of using mean times do not optimize outcomes owing to case variation. Furthermore, taking an average of only 10 cases can introduce error owing to the small sample size. In addition, booking times change frequently and are particularly vulnerable to skewing by outlier cases. Conversely, the machine

Table 1. Surgeon case audit report*

Date	CR #	Procedure	Description	Schedule	In	An start	Pr start	Pr end	An end	Out	Actual duration	Booking duration
1/1/2017	111111	ABC	Example procedure description here	12:15	12:15	12:30	12:45	13:00	13:15	13:30	75	60

An = anesthesia; CR = case reference; Pr = procedure.
*Date covers the period of Jan. 1, 2017, to Dec. 31, 2019.

Table 2. Summary 2017–2019*

Variable	Original	ML Model	Difference
Overtime frequency, %	47.54	26.55	–20.99
Undertime frequency, %	36.53	17.50	–19.03
Overtime minutes used	50 639	19 145	–31 494
Overtime cost, $	770 437.50	301 312.50	–469 125.00
OR minutes used, %	72.56	72.65	0.09

OR = operating room.

*Based on 10 553 cases in 2975 surgeon OR days, with a total rate of machine learning cases achieved of 96.53%.

learning model is developed based on years of data, so outlier case times have minimal effect on the scheduling time for that procedure.

Whereas the original mean case method takes into account only an average of recent case times, the machine learning model analyses a number of variables, including average case times, variability of case times, frequency of procedure types and distribution of procedure types, to calculate an effective scheduling time that keeps the OR, not just the individual case, running on time. Because these factors are highly dependent on the surgeon, it is vital that this model is run on a surgeon-specific basis.

As more data, such as surgeon, anesthesiologist, type of surgery, previous surgery, surgeon estimate of complexity, type of anesthetic, American Society of Anesthesiologists class and other patient factors, are incorporated into the machine learning model, we can likely expect even more accurate estimates of case times. Machine learning optimization can create case times free of bias, as it facilitates objective, evidence-based decision-making. This method requires some familiarity with programming to run the script, and its adoption will depend on acceptance by surgeons and other involved parties.

Conclusion

The high-level Python programming language combined with the open source OR-Tools software suite from Google AI has the potential to easily and accurately predict operative booking times. We have shown a theoretical improvement of 21% in overtime rates and an estimated cost saving of $469 000 over 3 years to illustrate how surgeon-specific data can be used to optimize bookings. Given the complexity of the underlying systems involved, it may be a challenge to get all involved stakeholders engaged with adopting this model. It will be important to emphasize that this model is designed to be predictive, not punitive, to optimize the efficiency of ORs. Given the system-level challenges we face now and in the months ahead as a result of the COVID-19 pandemic, a focus on the most efficient use of our limited and precious resources will be vital to provide the level of care our community requires.

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DISCUSSIONS IN SURGERY •
DISCUSSIONS EN CHIRURGIE

Burnout, resilience and moral injury: How the wicked problems of health care defy solutions, yet require innovative strategies in the modern era

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SUMMARY

Physician burnout is an increasingly concerning issue that affects patient care, costs and the sustainability of our health care system. Burnout is not solely related to personal resilience; it is important to recognize the major role of the institution of health care in creating this wicked problem. Only this way can we fully understand the shared responsibility required to develop local strategies to tilt the fulcrum in our favour.

Is burnout a diagnosis or a symptom? Burnout is a syndrome characterized by a loss of interest in one's work, a sense of hopelessness, depersonalization and exhaustion.[1] A 2018 Canadian Medical Association survey of 2547 physicians found that 30% showed signs of burnout, and 8% had suicidal ideation in the last 12 months. These results were significantly worse among medical residents. Is this a diagnosis that requires further assessment, treatment and study? Or is this a symptom of something else? Burnout historically has not been a popular topic of discussion among physicians. Among surgeons at our institution who completed the Mayo Clinic Physician Well-Being Index in 2018, 86% stated they had felt burned out from work, and 81% stated that their work was hardening them emotionally.

As physicians, we pride ourselves on having developed tremendous resilience after years of preparation in residency and fine tuning in medical practice. We are highly trained through study and apprenticeship to deal with the emotional and physical challenges of a modern medical practice. Yet, why is the suicide rate for physicians in the US 40 per 100 000 — 3 times that of the general population? Burnout suggests that we have failed to develop the skills and abilities that we pride ourselves on and have honed over decades. Could the phenomenon of burnout simply be a symptom of something far more insidious?

In their book, *Patients Come Second*, Spiegelman and Barrett write, "... the motivation to work in health care is a series of sacred encounters. They come from trying to describe a deeper connection with people, trying to make a difference not only to our patients, but also in how people treat one another."[2] So modern health care creates tremendous expectations and has lofty goals, but then introduces tremendous barriers in front of the women and men expected to attain those goals. What sort of disconnect does this produce?

A day on call and in the operating room can feel like a war zone at times. "Moral injury,"[3] a term initially used to describe how military personnel respond to war, describes the response that we have when we fail to prevent, or simply watch, things that go against our sense of morality and identity. Is this something that happens in our modern health care system? A Rand Corporation survey on physician burnout found that the primary stressor affecting physicians was their inability to provide accessible,

quality health care.[1] Without controls over system funding and administration, we are expected to be the financial gatekeeper to universal health care by rationing and rationalizing patient access. Poorly designed electronic medical records, increasing paperwork, medicolegal jeopardy, administration demands, regulatory college requirements, the desire to improve patient experience scores, quality scores, and our own personal needs all create a schism between our "intense drive or need" to meet the patients' best interests and the reality of modern health care. This creates a deeply emotional and exhausting psychological wound. No amount of yoga, mindfulness, physical activity, or pharmaceuticals can heal this wound. In addition, personal solutions, such as drastically reducing working hours, can have detrimental systemic effects.

Wicked problems

A concept first used by Professor Horst Rittel, a design theorist in the 1960s, a "wicked problem" has no easy, reproducible, or attainable solution. A simple problem would be something like getting directions to a destination. A complex problem, such a performing a coronary bypass, can be addressed in a reproducible fashion with quality once the correct team, technology and processes are in place. A solution to a wicked problem, such as how to govern a nation, address pollution, or solve the issues of health care, however, has no single, reproducible solution or end point; results in little agreement; and is unique. Often, the problem itself cannot be defined.

Could our health care system itself be the wicked problem? When one looks at the state of surgeons now, one sees an intense competition for few staff positions; wait times for resources, such as operating room time or diagnostic imaging; high workloads due to institutional disincentives to hire; poor engagement; litigation; burgeoning administrative demands; and harassment — all barriers preventing effective patient care. Most of us find meaning through our work, but what happens when that very work and workplace become toxic? All the resilience in the world will not help because burnout is predominantly an organizational issue, not a personal one.[4]

Strategies

There are no solutions to wicked problems, only better or worse strategies. We must pursue a collaborative approach in which all stakeholders have the opportunity to participate and are actively involved in the creation of strategies, not solutions. Front-line physicians need to have input and the authority to make decisions and drive solutions from the bottom up. We want to deliver efficient, quality care and to be appreciated for that by patients, colleagues and the institution. The Mayo Clinic has produced a seminal article that clearly delineates an organizational approach to recognize and address this vital issue in 9 clear steps.[4] Key organizational approaches include effective leadership, targeted interventions, promotion of flexibility in work–life integration and provision of resources to enhance resilience. One insight they describe is the 20% rule: spending at least 20% of your time on what you find most meaningful can substantially reduce the risk of burnout. Another key insight is that individual offerings to promote self care should not be the primary focus of the institution, as that can lead to skepticism about the ultimate motivations.

Get involved in the management of your institution — a leader without a title is often the most influential one in a group. Learn your local politics and learn how to get things done at your hospital. Instead of working on structures that will change processes and in turn change your local culture, start at the end and address the issues of culture first to get local buy-in. Improvements in workflow, reduction of unnecessary data collection, streamlining electronic medical records, automated order sets, and an acknowledgement of the sacrifices physicians make to provide excellent care can go a long way to improving satisfaction.[5] The resources provided to caregivers need to be appropriate both contextually and culturally, and are likely more important than a focus on personal resilience.

In Oakville, we have adopted a number of strategies to address this issue. We are hiring 10 new surgeons over 1 year to address issues related to wait times and volume of work. In addition, to address institutional issues of barriers to timely, quality care, we have started an acute care general surgery service (ACS) with 3 additional new surgeons and are in the process of hiring a physician assistant to support them. The ACS allows us to have a surgeon available to do consults on inpatients and emergency department patients as well as dedicated diagnostic imaging slots and ACS operating room time every afternoon to allow patients to be treated and discharged home as soon as possible. In turn, elective surgeons can focus on their practices without being pulled in multiple directions at the same time. We have created separate breast and colorectal diagnostic assessment programs (DAPs). The breast DAP allows patients with breast imaging abnormalities to receive a same-day biopsy, be guided through their care by a dedicated patient navigator, and be seen by a surgeon rapidly and proceed to definitive care. Similarly, our colorectal DAP takes much of the burden away from surgeons by having patients staged in dedicated diagnostic imaging slots, guided by a patient navigator, and ready for surgical or oncological management faster. We have also introduced a new Oakville Virtual Care Program to provide our surgeons

with an innovative and novel way to communicate virtually with patients using the Reacts platform (an integrated, collaborative tool for health care professionals). We believe that this will improve access and reduce barriers to health care.

Our coordinator of staff wellness, Louisa Nedkov, presents on topics of burnout, resilience, compassion fatigue and secondary trauma each month at our Department of Surgery meeting to raise awareness and help change the local culture. In addition, she is assisting us in the development of multiple programs involving guided imagery and peer support to enhance surgeon wellness. Francoise Mathieu, a compassion fatigue specialist from TEND, has presented rounds on the topic of managing compassion fatigue and burnout in health care. We are currently assessing the institutional role in secondary traumatic stress using the Secondary Traumatic Stress Informed Organization Assessment framework (www.uky.edu/CTAC).

In Oakville, our Department of Hospitalist Medicine, led by Dr. Stephen Chin in conjunction with Ms. Nedkov, has started regular Schwartz Rounds — "an interprofessional forum where caregivers have the opportunity to discuss difficult emotional and social issues that arise in caring for patients and families." We are developing a collaborative model of care between surgeons and hospitalists. We have key local advisors with extensive experience in this field, including Dr. Alex Ginty (physicianselfcare.com) and Dr. David Posen (davidposen.com). We have also created a peer support network in the Department of Surgery with representatives from each surgical division to provide support and act as resources to our surgeons. We have on our departmental website (www.oakvillesurgery.com/energy.html) key resource papers and strategies that we are currently developing.

In October 2018 our Department of Surgery had dedicated system rounds in the field of team training. Guided by Dr. Robert Johnston of the Canadian Medical Protective Association, caregivers from the entire program attended to teach one another how to work better together. This initiative has led to a number of system changes that are currently being implemented and to a change in tone about how we need to work together.

The "Revised Declaration of Geneva — A Modern-Day Physician's Pledge" from 2017 says, "I will attend to my own health, well-being, and abilities in order to provide care of the highest standard."[6] We need to address some fundamental problems with the health care system if we are to successfully develop and share strategies together.

Conclusion

We have created a Sisyphean task for our physicians and then abandoned them and laid the blame at their feet. Where is the justice in that? Politics is fundamentally about "who gets what," and if we are committed to improving the organizational and personal issues leading to burnout and moral injury, we need to get involved in politics both locally and nationally to address this as a shared responsibility. We need to reduce institutional barriers, to provide rapid access to resources for our caregivers, understanding the moral distress we feel when we cannot provide timely, quality care. Our institutions need to be more risk tolerant and understand that, while all change is not improvement, there is no improvement without change.

Empathy needs to be demonstrated throughout the entire continuum of health care, from patients to nurses to physicians and administrators. The institution of health care needs to understand that its very survival depends on an existential pivot to focus on the wellness of caregivers. One of my favourite actors, Sonequa Martin-Green said, "Empathy is inconvenient. It hurts you to empathize with someone. We have our own pain. We don't want to take on other people's pain. But that's what's needed in this world."[7] And that will be the key strategy as we roll the boulder up the mountain, together.

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OPINION

How a throughline focused on virtue may be a key strategy for physician leaders to stay in the infinite game

Duncan Rozario, MD

We are at a tipping point in society, where income inequality, employment instability, and a fundamental lack of societal virtue are poisoning the well of happiness. In his seminal 1776 work, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith[1] said, "Consumption is the sole end and purpose of all production; and the interest of the producer ought to be attended to only so far as it may be necessary for promoting that of the consumer." He spoke of the importance of allowing just and balanced market forces to allow optimization of the interests of the consumer and business alike, leading to centuries of incremental growth in the wealth of nations.

However, 50 years ago, Milton Friedman's[2] treatise on shareholder primacy helped change the focus of business culture. He stated that the responsibility of business is to increase its profits and serve the interests of the shareholder; any focus on social responsibility was akin to socialism. He also said that business should, "Use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud."

How well has that focus served our societies? Have the largest, most successful corporations stayed within the rules of the game and avoided deception or fraud to provide fundamental value to society? Or have we incentivized the wrong behaviours? In August of this year, the Business Roundtable,[3] in its revised Statement on the Purpose of a Corporation, changed its focus from profit to, "delivering value to our customers, investing in our employees, dealing fairly and ethically with our suppliers, supporting the communities in which we work, and generating long-term value for shareholders." Will this happen without an existential pivot to focus on virtue instead of profit in all that we do in business and in health care?

In public speaking, a throughline is an idea, theme, or concept that unites or links all of the narrative elements. It "traces the path that the journey takes,"[4] so that leaders and followers end up at the same destination. As physician leaders, we share unique challenges as we fundamentally strive to change behaviours and beliefs in the delivery of health care with only the power of our actions and words. Coercion and use of authority will not produce the longstanding cultural changes we seek to improve the institutions we lead.

I propose that a leadership focus on the concept of virtue, and incentives that promote its value, will be the throughline that leads to success. We seek to motivate our staff and physicians to provide the best possible patient care and experiences, but have the mistaken belief that incentives and rules (otherwise known as carrots and sticks) are the key motivator. We institute more and more rules, but, at best, we

get a baseline of compliance that leads to mere mediocrity. In its 2017 report on the state of the American workplace, the Gallup organization[5] reported that only 33% of employees are engaged at work and demonstrate discretionary effort. Gallup's CEO, Jim Clifton, states, "The old ways – annual reviews, forced rankings, outdated competencies – no longer achieve the intended results."

In the truly infinite-minded book, *Exception to the Rule*, Rea and colleagues[6] state that a focus on a virtuous business culture benefits both the bottom line and society. Twenty-five centuries ago, Plato described the seven virtues of trust, compassion, courage, justice, wisdom, temperance, and hope. They appear to be a common denominator that spans diverse cultures, societies, and religions. How can an approach to leadership based on virtue succeed?

Trust

Trust makes your workforce more agile, ready to respond efficiently to uncertainty and more tolerant of risk and failure. In health care, "trusting and meaningful relationships are more important than extrinsic rewards and recognition."[5] Innovation is a common organizational priority in health care and, at its core, means "new action." This requires tolerance of risk, which speeds the decision-making process. This virtue is foundational to the patient-caregiver relationship and improves outcomes after care when treatment recommendations are embraced. It also improves resilience among our caregivers.

As leaders, we are often responsible for explaining "why" we are doing things, but we need to devolve the responsibility of "what and how" to our teams. The concept is simple but challenging: as leaders, we develop trust by being vulnerable and, first, trusting our followers by giving them the responsibility to implement that what and how. Increasing the portion of our workforce willing to demonstrate discretionary effort will require a focus on managers in our organizations. Gallup[5] reports that up to 70% of an employee's engagement depends on their supervisor, who must be empowered to build trust and relationships in the group. In a world filled with volatility, uncertainty, complexity, and ambiguity, a culture based on virtue, and the resulting reputation for integrity, has the best chance to succeed.

Compassion

Compassion improves customer and employee care and experiences and is one of the most important virtues in health care. It involves empathy, being able to feel the pain and suffering of others, but also requires instituting the actions needed to alleviate that suffering for our patients and colleagues. This is how compassion is superior to empathy and is a key strategy to build resilience and reduce burnout in our caregivers. "Empathy needs to be demonstrated throughout the entire continuum of health care, from patients to nurses to physicians and administrators. The institution of health care needs to understand that its very survival depends on an existential pivot to focus on the wellness of caregivers."[7]

In *Give and Take*, Adam Grant[8] divides people into givers, takers, and matchers. He demonstrates that givers, those who help unconditionally but are not doormats, are the key to successful long-term team performance. Compassion for colleagues and customers reduces risk, improves engagement and belonging, and changes culture. Health care has become a team undertaking, and one challenge has been melding a cohesive and successful team out of disparate individuals.

In Google's project Aristotle,[9] the researchers identified a consistent characteristic, "the good teams all had high 'average social sensitivity' – a fancy way of saying they were skilled at intuiting how others felt based on their tone of voice, their expressions and other nonverbal

cues."[10] In other words, empathy is a key aspect of psychological safety, which creates a safe environment for risk taking and collaboration. Although the focus on quality and efficiency in health care is necessary, we need to feel safe to develop the relationships that will lead to great work.[11]

Courage

Courage encourages tempered risk taking and promotes doing "the hard right," rather than the "easy wrong." We ask teams to innovate and produce exemplary care and experiences. Grit describes the learned determination that leads to the ability to weather multiple failures on the path to success. It allows us to manage ethical storms, de-escalate conflict, and maintain our work relationships.

Justice

Justice promotes equality, diversity, accountability, and discretionary effort. Politics is fundamentally about who gets what, and if we care about the distribution of resources and power at our institutions, we need to get involved in our local politics. Discretionary effort depends on our team members' perception of just and fair treatment and opportunities.

Rather than a sole focus on profits, Rosa Chun[12] wrote about corporate social responsibility, virtue, and business saying, "when customers perceive an organization to show strong empathy, it enhances their emotional attachment to the company. This leads to satisfaction and eventually differentiation."

The tides are turning among most large corporate shareholders and CEOs, who are now speaking up about the importance of environmental, social, and governance (ESG) issues. "In 2018, Bank of America Merrill Lynch found that firms with a better ESG record than their peers produced higher three-year returns, were more likely to become high-quality stocks, were less likely to have large price declines, and were less likely to go bankrupt."[13]

Forgiveness is also a key way to obtain justice. It reduces one's tendency to be consumed by hate and allows one to be free. A focus on self is a quick way to enhance suffering, whereas a focus on others before self allows one to act with justice and compassion.

Former United States President Barack Obama[14] emphasized the importance of diversity in the workplace saying, "Diversity is not charity. It is not something you do to be nice. If you don't have diversity around that table, you are missing a market. You are misunderstanding how your message is being received. Organizations that have a bunch of women on their boards do better. They make more money, they get in less trouble, they're more successful."

Wisdom

Wisdom promotes common sense and foresight and requires us to learn from our experiences or those of others. As Ray Dalio[15] describes, "the satisfaction of success doesn't come from achieving your goals, but from struggling well."

As leaders, we have a long list of deliverables and goals in our programs, and to maximize our potential we need to be willing to push our limits, and fail at times. At times, our cognitive bias will prevent us from seeing the truth and, if we completely disagree with our colleagues, then someone must be wrong – could it be you? We need to move out of the "it's this or that" mindset to get "this *and* that" accomplished.

Temperance

Temperance allows balance and discipline in the workplace. Recognizing that our perception of reality is individually flawed, we must understand the importance of learning what we do not know and being open minded. Considering opposing views has the remarkable effect of showing us the distortions in our own reality.

As leaders, we need to learn how to balance competing interests simultaneously. Habits such as meditation, morning exercise, and gratitude journals can change one's mindset for the day and beyond.[16] Benjamin Franklin, who could be considered the father of temperance, was noted to meticulously plan his day, with the morning question, "What good shall I do today," followed by his evening question, "What good have I done today?"[17]

Hope

Hope leads to an optimistic, future vision. Robert Waldinger of Harvard's 75-year longitudinal Grant and Glueck study said, "You could have all the money you've ever wanted, a successful career, and be in good physical health, but without meaningful relationships, you won't be happy."[15]

Pursuing our collective interests will almost always win out over an individual focus. Talking about virtue moments at the beginning of our meetings is one key way to practise optimism and can set the tone. Gratitude journals, gratitude letters or walls, and a conscious focus on optimism can help us focus on a better future.

Virtue

These are all learned traits, and if they don't exist in our business culture, they can be taught. We need to incentivize the right behaviours that will lead to more virtuous actions that benefit the entire system.

In health care, we have a deficit-based approach to our work. What is the problem (disease) and how do I resolve it (surgery or medication)? In the management of groups, however, an appreciative-based approach has proven to be superior. How many times in meetings do we start by asking, "What great work are we doing here, and how do we do more of that?" Instead, most of us are constantly engaged in a perpetual loop of "whack-a-mole" going after problems reactively as they appear. While values are beliefs, virtue is fundamentally demonstrated by actions, and we need to see that discussed and incentives provided at all levels of our organization.

Discussion

As a physician leader, what will be your throughline? How will your leadership fundamentally alter the culture of your organization to produce sustainable improvement? The CMA Code of Ethics and Professionalism[18] provides great leadership and inspiration as we struggle with these existential challenges. It emphasizes the importance of civil and respectful communication, justice, and treating our colleagues with dignity and compassion. As leaders, we must understand that, in a debate, more important than who is right or wrong, is what is true.

Leadership is a learned skill, and one should not underestimate the importance of developing local talent though rounds, journal clubs, management training, and mentoring (and a subscription to the *Harvard Business Review*!). Fundamental health care system reform will only happen when physicians get involved and embrace politics, which is fundamentally about who gets what.

We must mentor and foster our successors and understand that there are limits to the effectiveness and term of our leadership. Joseph Simone[19] states that the maximum term for a physician leader should be 10 ± 3 years. Fresh ideas and renewal are essential, and we need to understand that, once we accomplish 80% of our objectives, it may be time to go. Find people

who are better than you and retain them. What you do is noble, and despite the immense challenges, medical leadership is immensely fulfilling and rewarding when you take a moment to reflect.

We must have an understanding of how any business is fundamentally an infinite game and, to stay in the game, our vision must drive all decisions and actions.[20] A vision based on virtue is one that focuses on excellence, promotes engagement in both employees and customers, and simultaneously creates economic value. For this to happen, we need to lead a cultural change – to focus on our planet, our employees, our customers, and our community. Virtue is a skill that can be taught and strengthened like any other.

A focus on profit or other short-term goals may be successful in the short term. However, as physician leaders, if we want to create an environment of psychological safety where passionate colleagues and staff feel inspired to display discretionary effort and innovate, an infinite-minded focus on virtue has the potential to engage your entire workforce and lead to the type of innovative culture that will allow our health care system to aspire to excellence in the years to come.

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Appendix K Mini Z
https://www.professionalworklife.com/mini-z-survey

Z Zero Burnout Program

Mini Z survey (inclusive)

For questions 1-10, please indicate the best answer. [Note: do not include scoring in administration of survey] (Scoring targets in parenthesis and may change somewhat by work role.)

1. Overall, I am satisfied with my current job. [Scoring: Responses 1-2 = satisfied] (Target = >80% satisfied)

1-Agree strongly 2-Agree 3-Neither agree nor disagree 4-Disagree 5-Strongly disagree

2. I feel a great deal of stress because of my job. [Scoring: Responses 1-2 = high stress] (< 30% stressed)

1-Agree strongly 2-Agree 3-Neither agree nor disagree 4-Disagree 5-Strongly disagree

3. Using your own definition of "burnout", please circle one of the answers below: [Scoring: responses 3-5 = burnout] (< 20% burned out)

1. I enjoy my work. I have no symptoms of burnout.
2. I am under stress, and don't always have as much energy as I did, but I don't feel burned out.
3. I am definitely burning out and have one or more symptoms of burnout, e.g. emotional exhaustion.
4. The symptoms of burnout that I'm experiencing won't go away. I think about work frustrations a lot.
5. I feel completely burned out. I am at the point where I may need to seek help.

4. My control over my workload is: [Scoring: Responses 3-5 = satisfactory control] (< 25% poor control)

1 – Poor 2 – Marginal 3 – Satisfactory 4 – Good 5 – Optimal

5. Sufficiency of time for completing my work is: [Scoring: Responses 3-5 = satisfactory time to complete work] (>75% satisfactory time to complete work)

1 – Poor 2 – Marginal 3 – Satisfactory 4 – Good 5 – Optimal

6. Which number best describes the atmosphere in your primary work area? [Scoring: Responses 4-5 = chaos] (< 40% chaotic work environment)

Calm		Busy, but reasonable		Hectic, chaotic
1	2	3	4	5

7. My professional values are well aligned with those of my direct leaders: [Scoring: Responses 1-2 = high values alignment] (>80% values aligned)

1-Agree strongly 2-Agree 3-Neither agree nor disagree 4-Disagree 5-Strongly disagree

8. The degree to which my team works efficiently together is: [Scoring: Responses 3-5 = good teamwork] (> 80% efficient teamwork)

1 – Poor 2 – Marginal 3 – Satisfactory 4 – Good 5 – Optimal

Z Zero Burnout Program

9. The amount of time I spend on work at home is: [Scoring: Responses 1-2 = too much work at home] (<20% excessive work at home)

1 – Excessive 2 – Moderately high 3 – Satisfactory 4 – Modest 5 – Minimal/none

10. My work day is mainly frustrating: [Scoring: Responses 3-5 = not frustrated with work day] (<20% frustrated with work)

1=Agree strongly 2=Agree 3=Neither agree nor disagree 4=Disagree 5=Strongly disagree

11. Tell us more about your stresses and what we can do to minimize them:

Please tell us about yourself:

What is your current position/role:_____

12. **(optional) Please specify your gender**
    a. Female
    b. Male
    c. Non-Binary/Third Gender
    d. Prefer not to answer

13. **(optional) Please specify your ethnicity**
    a. Asian/Pacific Islander
    b. Black/African American
    c. Hispanic/Latino
    d. Native American or American Indian
    e. White/Caucasian
    f. Prefer not to answer
    g. Other (please specify)