

MEDICAL EDUCATION

## Addressing Substance Abuse in Clinical and Educational Settings

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National data shows that 1 out of 7 patients aged 12 and over currently have a substance use disorder, totaling close to 40 million people.<sup>1</sup> This epidemic places demands on the healthcare system to evolve and incorporate patient centered, evidence-based practices to address substance misuse.<sup>2,3</sup> But how do we address and treat a disorder that many still do not recognize as a disease? How can we stress the consequence of substance use and the need for clinical concern if we, as a profession, haven't studied or trained in the science or practical skills?

Northwell Health and the Zucker School of Medicine have worked to ensure that each medical student and faculty member undergoes training on substance use, addiction, and the core communication strategies necessary to engage patients. Northwell Health's Screening, Brief Intervention, and Referral to Treatment program (SBIRT) trains frontline healthcare professionals to address substance use at each patient encounter. We identified gaps in education as one of the key factors leading to avoidance and discomfort with the topic prompting strategic planning that brought the focus from the clinical arena, to the educational realm.<sup>4</sup> These experiences highlighted the need to start training early in one's career.

### The Core Mission

Northwell Health's Division of General Internal Medicine, Department of Emergency Medicine, and the Department of Psychiatry, along with partners, The National Center on Addiction and Substance Abuse (CASA) and NYS Office of Alcoholism and Substance Abuse Services (OASAS), received a service grant from the Substance Abuse and Mental Health Administration (SAMHSA) to implement SBIRT within Emergency Medicine and Primary Care settings. This opportunity to expand clinical care in support of an underappreciated disease process served as a driver for shift in organizational practices. The SBIRT program served to initiate a dialogue about how we, as an organization, and as individual healthcare professionals, can rethink, reframe, and revisit the use of substances in a humanistic and empathetic way. We emphasized that this is a disease process relevant to usual care, and, that we needed to find ways to support our patient population and communities. The challenge of the interprofessional

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## Stemming the Tide of Addictions

Joseph Conigliaro, MD, MPH

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While completing my residency at Jacobi Hospital in the Bronx, New York, early on in my career, I first experienced the devastation of the disease of addiction on people, families, and communities. Despite its prevalence, I was surprised that those in our profession were ill equipped, overwhelmed, or unwilling to address the underlying problem that can be associated with so many other diseases. We focus on the treatment of the endocarditis but not the intravenous drug use, and the management of the cirrhosis but not the alcohol dependence. The continued stigma associated with addictions continues to permeate in our screening and treatment programs as well as local, regional, and national policies. That has allowed the problem of addiction, that I encountered as a resident, to continue unabated and not fully benefit from the many innovations that have been realized in other areas of medicine. Intensified by the introduction of addressing pain as the fifth vital sign to the false claims of pharmaceutical companies that patients were unlikely to become addicted to long-acting opioids, we now face a true epidemic. How do

we deal with epidemics? We find the cases, treat the disease and its secondary manifestations, and prevent it. February's *Forum* highlights some of the work SGIM and its members have done to address this issue.

As a profession, our failure to address addictions goes back to our medical school education and training. Prior to this century, medical schools mostly covered addictions as a single lecture in behavioral health or psychiatry core courses taken in the second year with little opportunity of exposure to it in the third or fourth year unless one chose an elective. Therefore, by the time I encountered my patients with comorbid addictions and the associated medical consequences as a resident I was already in over my head. The effect of addictions on my patients, regardless of socioeconomic status, veteran status, gender, or race was something that I have continued to encounter throughout my career, and even today. This month's *Forum* highlights the culture change work of Kapoor, et al, who describe a collaborative effort between healthcare providers and innovative medical educators to introduce and then disseminate an addictions curriculum from undergraduate to graduate and continuing medical education while implementing a screening, brief intervention and referral to treatment program (SBIRT). Similarly, Drs. O'Glasser and Englander provide a thoughtful piece challenging the fields of peri-operative and addiction medicine to combine forces when dealing with the epidemic.

Since my Jacobi days, we have developed SBIRT programs, improved and added to the armamentarium for medical assisted treatments (MAT), and have a proven, easily delivered method for the community to reduce the deaths from overdose using easily adminis-

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## SGIM and External Funds: Continuing Our Conversation

Thomas H. Gallagher, MD, President, SGIM, and  
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**Council is eager to adopt strategies  
in which all voices on this important  
topic can be heard and valued.**



A few months ago, I (THG) was speaking at a large national professional medical society meeting. While I hadn't strayed from my home time zone, I felt like I was visiting a foreign culture. I wandered through a cavernous exhibit hall, with each booth being more lavish than the next. Feeling exhausted, I started to walk towards the room I was presenting in with my head hung down, only to notice small floor tiles advertising the latest generation antibiotics. Lacking the energy to climb the stairs, I hopped on the escalator to find drug company logos running the entire length of the side rail. The only way to avoid industry advertisements would have been to close my eyes, which would have posed its own problems.

Clearly, this was not the SGIM Annual Meeting. Our careful approach to financial support of the Society is a treasured element of our culture and collective identity. Given the extremely limited presence of exhibitors at our Annual Meeting, some members may think that SGIM accepts no external funds whatsoever. In reality, SGIM has a thoughtful policy on external funding that allows limited external support for the Society. While SGIM has, for years, avoided having any pharmaceutical funding for the Annual Meeting, a Career Fair at the meeting does bring in a small amount of revenue (about \$50,000) which slightly offsets registration and meeting fees. At present, we are far below the limits that our policy allows. Council is firmly committed to the current external funds policy and also is acutely aware of its fiduciary responsibility to be effective

stewards of the Society's limited resources. In this column, we continue our collective conversation about this important issue.

The issue of external funds has a long, and at times, contentious history for the Society. The original policy was adopted in 1994, and underwent a significant revision in 2002 (See *Forum*, April 2002), and then a modest revision in 2006 (See *Forum*, February 2006). With each iteration, extensive consultation was undertaken with membership, including a member survey on this topic in 2005 and careful consideration of diverse opinions.

While the external funds policy has multiple goals, the two most prominent are reducing the probability of industry influence on Annual Meeting content and reducing the likelihood that the Society would become financially dependent on external funds. The policy outlines a careful process for reviewing proposals to accept external funds and includes additional safeguards to ensure that the meeting content is uncoupled from industry support. It also sets strict limits on the percentage of SGIM's overall budget that can come from all external funds (33%), from any single non-healthcare related entity (15%), or from any single healthcare related entity (5%). We are well below these limits—in 2016, 6% of our income came from external funds (and very little of this came from commercial entities).

Much has taken place since 2006 regarding the relationship between the medical profession and industry. Public concern has been increasing about corruption in government, busi-

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ness, and even health systems. Seminal reports from the AAMC (2008) and the IOM/NAM (2009) addressed this topic. Significant research on conflicts of interest, fueled by the recent Open Payments database has garnered intense media coverage. These research studies highlighted the pervasiveness of industry funding, and showed that even modest industry gifts given directly to clinicians clearly affect our clinical decisions.<sup>1</sup> Recently, an entire special issue of *JAMA* (May 2nd, 2017) was devoted to the subject of conflict of interest, emphasizing the need to increase focus not only on the presence of perceived or potential conflicts of interest, but also on continued on page 13

## SGIM Supporting Addiction Treatment Over the Years

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The following commentary in italics had originally published in the October 1999 issue of the *Forum*. The piece may be found via this link: <http://www.sgim.org/File%20Library/SGIM/Resource%20Library/Forum/1999/forum9910.pdf>

### SGIM Joins Court Effort Supporting Access to Methadone Treatment

*SGIM has signed on to a friend-of-the-court (amicus curiae) brief, filed in an important federal case. The court case, Bay Area Addiction Research Treatment, Inc. (BAART) vs. the City of Antioch, concerns Antioch's attempts to keep BAART from opening a methadone clinic in its community. The purpose of the amicus brief, co-signed by SGIM and several other medical organizations, is to ensure that methadone treatment is recognized as an integral part of medical care and remains accessible to patients who need it.*

*As the brief states, "SGIM is deeply concerned about policies and practices that effectively limit access to quality substance abuse treatment due to an erroneous belief that such services are different from or not part of essential medical care." Additional co-signers' amicus curiae statements offer institutional expertise, experience, and research findings intended to educate the court about how methadone works and about the efficacy and benefits of methadone treatment for opiate dependent persons and their families.*

*It is hoped that this brief will support BAART's case by correcting misunderstandings and misperceptions about methadone treatment and by allaying communities' fears about having clinics in their neighborhoods.*

SGIM, and by extension JGIM and *SGIM Forum*, has confronted over the years opioid-abuse and substance-abuse related issues head-on. A quick search of the JGIM archives revealed multiple articles pertaining to such, including a special issue dedicated to substance abuse and primary care in May 2002.

In searching for this month's #FBF article, our attention was caught by an *SGIM Forum* announcement related to the legal aspect of substance abuse. "SGIM Joins Court Effort Supporting Access to Methadone Treatment"<sup>1</sup> appeared as a small text box, without a listed author, in the October 1999 issue.

The case, Bay Area Addiction Research Treatment, Inc. (BAART) v the City of Antioch, was filed in July 1998 when the City of Antioch changed its zoning laws in an aggressive attempt to prevent a new methadone clinic from opening by banning methadone clinics from operating within 500 feet of any residential area.<sup>2</sup> The case initially was heard before the United States District Court for the California Northern District, which denied BAART's motion for a preliminary injunction. On appeal, the Ninth Circuit Court of Appeals found that a zoning ordinance can violate the Americans with Disabilities and Rehabilitation Acts and ordered the District Court to reconsider BAART's request for an injunction.<sup>3</sup> On remand, the District Court granted the injunction after hearing testimony from at least five physicians regarding their experience working in methadone clinics. Based on the evidence presented, the District Court found that the City ordinance reflected the community's "hypothetical or presumed risk" and that there was no evidence that the BAART clinic would pose "a signifi-

cant risk to the health or safety of the community."<sup>3</sup> The District Court granted the injunction. The Ninth Circuit's decision continues to guide courts' resolution of ADA issues to this day, and has been cited in over one hundred court decisions since 1999.

The amicus curiae (friend-of-the-court) brief was signed by SGIM and several other medical organizations. Because of the age of the record, we could not locate a digital copy of the brief. However, based on review of the Civil Docket for the case, it appears that the California Medical Association was the lead on the brief.<sup>4</sup>

This was not the only amicus curiae brief to which SGIM would contribute. In February 2000, SGIM joined nearly two dozen organizations on a brief in *Ferguson v City of Charleston*.<sup>5</sup> The case challenged a Medical University of South Carolina and Charleston, SC, police department policy imposing pregnant woman with drug testing without a search warrant or consent. The United States Supreme Court ultimately decided in favor of the defendants. This amicus participation was highlighted in other *SGIM Forum* articles, including one by Daniel Abrahamson, the attorney who filed the brief in *BAART v City of Antioch and Ferguson*.<sup>6</sup>

Finally, you may be interested to know that BAART, Inc., still operates a clinic in Antioch, CA, providing medication-assisted treatment for addiction.

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# How Good Is Your Country's Healthcare System?

Peter Cram, MD MBA

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**H**ow good is your country's healthcare system? Truth be told, we don't really know, and not knowing seems preposterous. But, in the current hyperpoliticized environment, a recent editorial by Papinicolas and Jha is worth a read.<sup>1</sup>

SGIM members are brought up on a steady diet of research papers and government reports demonstrating the myriad shortcomings of the US healthcare system (for 96% of SGIM members, our healthcare system means the "US healthcare system"). Research papers by SGIM members and reports from the National Academy of Medicine and other committees on which they serve draw attention to the many deficiencies in our healthcare system. But, if you take a more global look at US health care, there is much that Americans should celebrate. Yes. Really.

US Academic Medical Centers are the envy of the world, and trainees from around the globe flock to the United States for their training. Patients travel thousands of miles—at great cost—to receive treatment. New technologies are adopted faster in the United States than elsewhere, and evidence suggests that such technological advances provide substantial improvements in health that are likely to be of reasonable value.<sup>2</sup> Of course, US health care also has numerous shortcomings. There are appalling disparities. There is waste and occasionally outright fraud, and incentives are often conflicting and utterly inconsistent.

But, back to our question: *How good is your country's healthcare system?*

Focusing on the United States, a recent *New England Journal of Medicine* editorial by Schneider and Squires from The Commonwealth Fund argue that the performance of the US healthcare system is poor.<sup>3</sup>

They based their claim upon the influential Commonwealth Fund surveys of patients and providers in different countries that government and policy makers often quote. The Commonwealth Fund narrative is simple and resonates with many of us who are frustrated with US health care. However, the Commonwealth Fund narrative risks being overly simplistic. Papinicolas and Jha paint a more complex picture of just how difficult it is to compare international health systems. In their *JAMA* editorial, the authors draw attention to the numerous challenges of international health system comparison.<sup>1</sup>

The authors specifically highlight 3 challenges in making comparisons across systems:

1. how to define the boundaries of the healthcare system;
2. differences in data collection and availability; and
3. differences in societal values and priorities.

For example, when considering boundaries, greater spending on schools may necessitate reduced spending on nursing homes; yet, both can have a profound impact on health system performance and population health. When considering data, how do we account for the fact that access to physicians and hospital beds differ markedly across countries?<sup>4,5</sup> As a result, some countries have a very limited capacity to hospitalize patients while others can hospitalize virtually everybody. In turn, differences in who gets hospitalized can reasonably be expected to influence everything from length-of-stay to 30-day mortality. Similarly, how do researchers account for differences in data availability and coding across countries and health systems? Finally, like it or not, healthcare systems re-

flect societal values in most democratically elected countries. How should comparisons "adjust for" the fact that the United States has opted for "Mercedes" health care for those who can pay and "Yugo" ([https://en.wikipedia.org/wiki/Zastava\\_Koral](https://en.wikipedia.org/wiki/Zastava_Koral)) health care for those who cannot while other countries have opted for Hyundai level care for all. It seems shocking that we are able to measure hospital risk-standardized myocardial infarction with such precision, but at a national level we have a hard time answering whether breast cancer or stroke outcomes are better in Canada, France, or the United States.

As the United States lurches through healthcare reform (and potential repeal), it will be important not just to address the significant shortcomings, but to preserve much that is good. Finding a cure that is not worse than the disease has never been truer.

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## Reversing Opiates in a Flash: Intranasal Naloxone-Induced Noncardiogenic Pulmonary Edema

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*\* Discussant text in the article is expressed in italics.*

**A** 27-year-old man with history of chronic neck pain and polysubstance abuse was found unresponsive with hypopnea at a party. Paramedics administered 3 sprays of intranasal naloxone (6mg) with improvement in mental status and respiratory effort.

*Naloxone is an opiate antagonist used to reverse the effects of opiate binding by mu receptors in the central nervous system. Indications for use include opiate-induced pruritus, rapid reversal of opiates after anesthesia, or overdose. Naloxone is available commercially in intravenous, intramuscular, subcutaneous, and intranasal forms. It is commonly used by first responders in the context of the national opiate epidemic. In many states, it is available without a prescription and is often prescribed to close contacts of individuals at risk of opiate overdose.<sup>1</sup>*

In transit to the emergency department, he became hypertensive and tachycardic. He developed hemoptysis and desaturation down to a SPO<sub>2</sub> of 40%. The patient was emergently intubated for respiratory failure.

*Classically, acute hypoxemic respiratory failure is severe arterial hypoxemia that is caused by intrapulmonary shunting of blood resulting from airspace filling or collapse.<sup>2</sup> Causes of hypoxemic respiratory failure include airspace filling secondary to elevated alveolar capillary hydrostatic pressure, as occurs in left ventricular failure or hypervolemia, increased alveolar capillary permeability, as occurs in any of the conditions predisposing to acute respiratory distress syndrome (ARDS) blood (as occurs in diffuse*

*alveolar hemorrhage) or inflammatory exudates (as occur in pneumonia or other inflammatory lung conditions)<sup>3</sup>. Patient's mental status puts patient at risk for aspiration pneumonia, but the patient's hemoptysis also makes diffuse alveolar hemorrhage or pulmonary embolism on the differential diagnosis. Chest X-ray would be a good initial diagnostic test.*

The patient was afebrile with BP of 168/92, heart rate of 108, and respiratory rate of 18 while saturating 95% on 100% FiO<sub>2</sub> with 8mmHg of PEEP. Physical exam revealed a well appearing man with endotracheal tube in place, sedated but arousable. Pupils were 4mm and reactive bilaterally. There was no jugular venous distension. Cardiac exam revealed tachycardic rate and regular rhythm without murmur. Lung exam revealed diffuse crackles in bilateral lung fields without wheezing. Abdomen was soft. Chest radiograph showed extensive airspace consolidations involving all lobes of both lungs without cardiomegaly. Laboratory studies were remarkable for leukocytosis to 14,200 and mixed respiratory failure with ABG of 7.33/58/37/29. Urine drug screen was positive only for oxycodone. Diuretic therapy was initiated in addition to ventilator support.

*The patient's chest radiograph showed bilateral infiltrates concerning for pulmonary edema. Pulmonary edema, either cardiogenic or non-cardiogenic, can be identified by diffuse chest radiographic infiltrates that demonstrate a bilateral alveolar filling pattern. The distinction between the two types can be made on the presence of cardiomegaly, apical vascular redistribution, or Kerley "B" lines*

*suggesting interstitial edema, which are typically features of cardiogenic edema. This patient had no evidence of heart failure.*

Bedside echocardiogram revealed normal heart function. Treatment with IV furosemide yielded rapid improvement. Chest radiographs on hospital day two revealed resolution of infiltrates. His respiratory status improved with subsequent extubation. The patient reported taking additional oxycodone prior to his respiratory event due to neck pain. A diagnosis of naloxone induced pulmonary edema was made.

*Previously published case series have identified a potential mechanism of action of naloxone induced pulmonary edema. Animal models suggest that rapid catecholamine surge results in acute neurogenic pulmonary hypertension. Systemic intravascular volume preferentially shunts to the low-pressure pulmonary vascular bed phenotypically producing acute respiratory distress syndrome (ARDS). Treatment includes respiratory support, diuresis, and pulmonary vascular vasodilation.<sup>3,4</sup>*

*Naloxone use is increasing in the setting of a national opiate epidemic. Often first responders make the decision to administer naloxone as in the case presented. However, internists should be aware of the potential adverse reactions to naloxone, particularly when naloxone is administered in the field. In addition to pulmonary edema, internists should monitor for side effects including CNS disturbances such as seizure and hallucination; cardiac syndromes including arrhythmia and cardiac ar-*

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## Niches Converging: Addiction Medicine and Peri-Operative Medicine as Domains of Internal Medicine

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**A** middle-aged woman with chronic back pain due to lumbar stenosis presents in advance of scheduled lumbar fusion. She currently manages her pain with acetaminophen, ibuprofen, and physical therapy. She is looking forward to improved pain control once she has recovered from surgery, though anticipates a hydro-morphone prescription on discharge. She has a family history—though no personal history—of addiction, and wonders how long she will need hydro-morphone post-operatively or how she will taper it down to completion of therapy.

Unsurprising to any reader, the United States is currently in the midst of an opioid epidemic. Numerous stakeholders have been identified, and the issue continues to garner significant attention in the medical literature and lay press. Significant attention has also turned to the burden of POST-operative opioid prescribing.

Surgery might be a pivotal index event at the apex of the slippery slope of dependence, addiction, overdose, and diversion. This occurs not just after major surgery with rates of new persistent opioid use estimated up to 6.5%<sup>1</sup>, but also after minor procedures including dental work.<sup>1,2</sup> Optimal use for post-operative opioids, though varying by procedure, may range from 4-15 days.<sup>3</sup> However, 67-92% of patients reported unused opioids post-operatively, with no more than 9% of patients safely disposing of remaining opioids.<sup>4</sup> Multiple recent studies now appear in the surgery literature, including educational endeavors to better understand more appropriate post-operative opioid prescribing and curb excessive dispensations.

Now let us share a few other possible scenarios:

- *A young woman with a history of tricuspid valve endocarditis, attributed to past intravenous heroin abuse, is scheduled for tricuspid valve repair. She is in sustained recovery on buprenorphine-naloxone therapy. How should her buprenorphine-naloxone be managed peri-operatively?*
- *A middle-aged gentleman with alcohol use disorder is scheduled for hemicolectomy for newly diagnosed colon cancer. He has no insurance coverage for medication-assisted treatment (MAT) or outpatient substance use disorder (SUD) treatment, but has been able to wean his alcohol intake from six beers daily to two. How should he be managed peri-operatively?*
- *A middle-aged woman with an intracranial meningioma is scheduled for craniotomy and resection. She has been in stable recovery from past intravenous heroin use for nearly 20 years, but because of an intense fear of discrimination, she does not disclose her chronic buprenorphine-naloxone therapy, despite multiple pre-surgery visits and medication reconciliations. Post-operatively, she develops delirium, ultimately attributed to acute pain and opioid withdrawal. How could this situation have been prevented?*

Often, people with substance use disorders are declined elective surgery because of discrimination or provider fears about outcomes in the setting of active substance use, fears of relapse, or concerns for difficult perioperative management. Peri-operative medicine

is an art and a science requiring nuanced, compassionate, patient-centered risk/benefit discussions.

Please consider the following:

- What if surgery is not elective or emergent?
- How might acute pain and surgery affect recovery from a substance use disorder?
- How should post-operative opioid prescriptions be handled on discharge?
- How can the risk of post-operative SUD relapse be mitigated?
- How can systems assure that patients with opioid use disorder receive adequate pain management in the acute setting?

Hospitalization and acute illness can be a “reachable” moment to initiate and coordinate addiction care.<sup>5</sup> Hospital providers and systems have a duty to provide evidence-based addiction care. Broadly, this means increasing provider knowledge, skills, and attitudes of addiction medicine so that patients are offered life-saving medications for addiction, do not suffer untreated withdrawal, and receive inappropriate pain management. It means expanding addiction medicine consult services to academic medical centers<sup>5</sup>.

To quote one editorial regarding infectious disease specialists becoming addiction medicine specialists, “The history of medicine is, in part, the history of physicians stretching the scope of their practice to answer the pressing needs of their times.”<sup>6</sup> With surgeons and other proceduralists identifying themselves as stakeholders in the issue, where does the general internal medicine physician enter

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## Transforming Primary Care in an Academic Safety Net Hospital: Steps to Take

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**T**ransforming primary care at a large, academic, safety-net institution can be a challenging task due to the competing needs of patients, residents, and the clinic itself. This article describes the general approach to practice transformation and the specific steps taken to improve the primary care practice at the J. Willis Hurst Internal Medicine Residency Program at Emory University. The practice consists of 150 residents, all of whom have their continuity clinics at Grady Memorial Hospital, Atlanta's public, safety-net primary hospital. Grady's Primary Care Center provides approximately 55,000 outpatient visits per year to a diverse patient population.

We focused our practice transformation efforts on "building blocks" (blocks A, B, and C: resident clinic scheduling, resident engagement, and enhanced work-life balance, respectively) derived from site visits to other transformative academic primary care centers.<sup>1</sup> Each block was incorporated within our practice around ongoing plan-do-study-act (PDSA) cycles and required engagement and feedback from residents, faculty, and staff for continual improvements, as well as ongoing discussion and communication with a supportive administrative and IT team.

Our practice recently promoted better resident clinic scheduling (Block A) and enhanced work life balance (Block C) by moving from a half-day to a full-day clinic model.<sup>2</sup> This new structure allowed for residents to focus exclusively on outpatient needs during their full-day clinic session, without the pressure of having to return to the inpatient environment once clinic was complete. We also created administrative days on

time-intensive rotations (such as MICU) during which residents have protected time for inbasket management. These changes allowed for scheduled time where resident efforts are fully focused on ambulatory care delivery, thereby preventing clinic duties from spilling into other rotations and/or personal time, and vice versa.

To enhance resident engagement (Block B), we implemented curricula addressing systems-based practice and population health. Topics included hands-on demonstrations on laptops of real-time inbasket management and enhanced EHR efficiency in the outpatient setting, as well as round table discussions on various primary care policies within our practice (e.g., chronic pain management, problem-based charting, and depression screening / management). We identified clinic-based QI projects (such as improvement of the health maintenance tab in the EHR, and updating of smartset orders), recruited interested residents, and created task forces by which residents could provide suggestions for improvement, and directly participate in tests of change and follow-up.

To begin the work of improving empanelment, we first defined goal panel sizes for each PGY level. We chose panel sizes based on the number of patients each resident was expected to see in a half day clinic session, multiplied by the average number of weeks before that patient would be expected to return. By the end of the academic year, interns should have a panel of 60-80 patients, PGY-2s 80-100 patients, and PGY-3s 100-110 patients. Our IT team created panel reports for each resident PCP to identify over- and

under-empaneled residents. In the future, we hope to (1) work with an "empanelment coordinator" to monitor the panel sizes of our residents and reassign patients as needed, (2) engage senior residents to review their panels prior to graduation and identify high-risk patients suitable for warm handoffs to rising PGY-2s and PGY-3s, and (3) implement automated panel transfers through the EHR so that graduating PGY-3's panels are automatically reassigned to incoming interns.

Achieving continuity within our practice has become more difficult, as we recently moved to an open-access scheduling model. Our templates now open 60 days in advance, essentially requiring every patient to call back to schedule their next 3-month appointment. We have built in 2-4 "reserved" slots on each residents' template, to allow for scheduling of high-risk patients when the resident is concerned they will not call back for an appointment. Our open-access model has created opportunities for patients lost to follow-up (e.g., with a graduated PCP) to re-access the system, though sometimes at the expense of empaneled patients who are then unable to see their PCP. To that end, we have engaged our IT team around implementing automated panel transfers through the EHR, and hope to analyze whether the automatic conversion of graduated PGY-3's names to incoming intern names will improve continuity scheduling with an active and current PCP.

Because our ambulatory scheduling does not follow the x+y model, there are times when a resident may be out of clinic for 4-8 weeks.<sup>2</sup> We

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## Generalists as Innovators: Lessons from Industry

Robert E. Burke MD, MS, and Ethan Cumbler, MD

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Colorado may seem to outsiders as attempting to become the center of innovation in micro-brewing beer and diversifying marijuana strains in order to complement the picturesque Rocky Mountain highs. The scale of the transformation from mass-produced beer to craft beer in particular has been astonishing. In 1979, Colorado had 2 breweries, and added only 2 in the subsequent 10 years (including Denver's first, started by our current governor). By 2016, Colorado had more than 400 microbreweries with nearly a billion dollars of sales annually. This revolution hasn't been limited to Colorado—small and independent craft brewing now represents 22% of the entire market share in beer.

We would argue generalists are the most important and most successful innovators in the healthcare system—from medical education to quality improvement; from research to healthcare policy. Working in Colorado as generalist physicians led us to question: how did the remarkable transformation in the brewery industry occur, and what lessons might this offer to generalist physician innovators? We turned to Steve Kurowski, operations director for the Colorado Brewers Guild—a nonprofit trade association representing brewers in Colorado—to help us identify key ingredients (beyond malt and hops) for this success.

The first lesson he identified is the importance of individual creativity—as he said, “people don't go into this to be boring.” He described individuals who innovate in craft brewing as often self-taught who seek freedom from constrictive structures. Generalist innovators may share this key inclination with the first micro-brewers—those who look at some-

thing mundane and common (pick your favorite mass-produced lager) and see a potential opportunity, ripe for innovation. For example, think about the legions of patients seen by primary care clinicians in their offices over the last few decades. In a world of drug discovery, translational research, and genomics, this hardly seems like the right laboratory for innovation. Generalists, however, saw this differently. The VA has been a prominent example, from evaluation to national dissemination of their patient-centered medical home model, to home-based primary care, to rapid expansion of telehealth capabilities, to public reporting of access, quality, and wait times.

Generalists and pioneers of the microbrewing industry share another key characteristic—that of a belief in the democratization of innovation. Individuals and small groups began a process of trial and error with the firm belief that “anyone can do it,” and built a community to be able to share lessons learned. Mr. Kurowski identified this as key for brewmasters, who could learn from each other in an environment of continuous experimentation. This ethos still permeates the microbrewery industry, where for less than \$100 you can buy all the requisite materials to make your own beer at home, and recipe sites abound on the Internet. What else is the Institute of Healthcare Improvement (started by a generalist pediatrician, Dr. Don Berwick) if not a way of empowering individual practitioners who are frustrated and want things to improve? Or, consider the profound impact of the Stanford Faculty Development Center for Medical Teachers (started by a general internist, Dr. Kelley Skeff) for more than 30 years during which

more than 15,000 faculty have been trained and who go on to train others. Innovation to generalists doesn't belong in the “ivory tower”; rather, all are seen as able to meaningfully contribute. This is a transformative idea, and one more needed now than ever.

This isn't to say that diffusing these innovations is easy. The historical record is full of small beverage companies that failed to achieve national dissemination of their product, or failed to do so sustainably. It's difficult to scale up a recipe for a kiwi fruit and kimchi double IPA, or to sell it to consumers who may prefer a more traditional brew. There are two lessons here we can take from unsuccessful microbreweries. First, if the customer doesn't find the innovation appealing, it's very unlikely to go anywhere, so one must involve the “consumer” early and often. The Patient-Centered Outcomes Research Institute is an admirable example of trying to execute this idea in health system innovations (led by Dr. Joe Selby, a generalist family physician). The second lesson is that even if you have a product that others find appealing, translating a “pilot” new recipe to scale is remarkably challenging: making beer in a 5-gallon batch is very different than a 5,000-gallon batch. Many breweries struggle to translate small-scale successes to large-scale production. The parallel for generalist innovators is dissemination and implementation science—the study of how to translate “pilot” interventions to scale. Dissemination and implementation science (in many cases led by generalists) similarly focuses on fidelity to the original “recipe” to figure out what tweaks need to be made to

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## MEDICAL EDUCATION

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and interdisciplinary team was to enhance awareness, skills, and comfort. The discomfort we were detecting from clinical team members that were now being asked to universally address substance use with all patients stemmed from lack of dedicated education and training. Yet stigma, biases (conscious and unconscious), competing priorities (lack of time and reimbursement), all played a role in the hesitation to 'do more.'

### Building a Medical School Curricula

In early 2014, leadership of Northwell SBIRT and members of the SOM faculty co-taught our first year 2-hour course on alcohol use. With the directors of Zucker's Medical Communication Faculty, we explored ways to improve curricular efforts surrounding this topic beyond the single session. Based on student and faculty feedback, as well as the SBIRT effort that was underway at the health system, and the issues our communities were facing, we developed a robust 4-year longitudinal curriculum titled "Addressing Substance Use". The curriculum is therefore delivered and facilitated by an interprofessional group of clinical team members which emphasizes the need for team-based approaches to serve patients in need. The focus has been on communications, and the importance of addressing substance use with all patients using a non-judgmental approach.

In 2015, we complemented our session on the spectrum of alcohol use and readiness for behavioral change with practice with standardized patients, a mandatory visit to an AA meeting, a written reflection, and an OSCE (objective structured clinical examination). In 2016, the footprint expanded to close to 8-hours. The courses shifted with a direct focus on the SBIRT program at

Northwell. In addition to the previous year's dynamic experiences, the sessions introduced evidence-based screening tools for alcohol and drugs, the art of the brief negotiated interview, end-of-course essay questions, and offerings for on-site clinical shadowing of SBIRT Health Coaches (non-licensed clinical team members) in emergency medicine or primary care.<sup>5</sup> The topic garnered interest of many students, and we invited our first summer research student to work with our team.

The iterations continued in 2017. We grew to 12 dedicated hours, now incorporating third-year and fourth-year students. Within the psychiatry clerkship, we incorporated a case-based conference and clinical encounter with a standardized patient (formative, and then summative), and offered a 2-week SBIRT elective affording students the opportunity to work with an interdisciplinary and interprofessional team spanning EM, IM, and Substance Abuse Services—demonstrating the spectrum of disease, and varying touchpoints to support those in need.

Spring 2018 will realize the largest expansion of the "Addressing Substance Use" curriculum when a third-year core week (interrotation transition) will incorporate the opioid epidemic as a common theme. This will include 10-hours dedicated to knowledge and skill-based sessions on addiction, pain management, quality improvement, patient and family perspectives, and overdose prevention training. This will bring the footprint to 25+ hours of dedicated curricular time, as indicated in the image.

### Key Lessons Learned

- The value of transparently identifying critical gaps in care

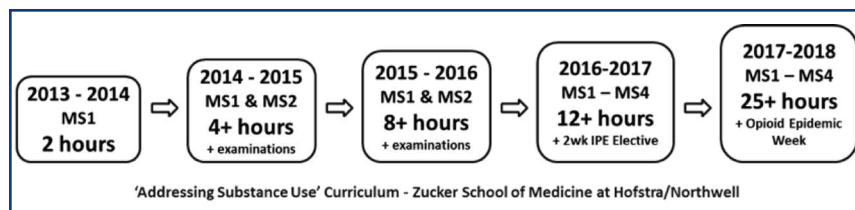
and education can help inform discussions within organizations.

- Promoting a team-based approach to interdisciplinary interprofessional programmatic development, implementation, execution and dissemination, emphasizes the relevance of substance use in all disciplines of medicine. We purposely did not incorporate the curriculum under Medicine, Emergency Medicine, or Psychiatry.
- Cultivating our Communications Faculty as substance use educators emphasizes that clear communication and empathy skills are critical to success in addressing substance use with patients.
- If you build it, they will come—we have been able to cross organizational boundaries to adapt elements of this curriculum to offer to other Health Professional programs; social workers, nurse practitioners, dieticians, pharmacy, and physician assistant training programs.
- We are incorporating elements of the curriculum into our residency programs (IM, EM, Psychiatry, and Pediatrics), fellowship programs, and faculty development programs within Northwell and beyond (regionally and nationally).

### Strategic Full Circle

We began with a grant funded project to incorporate protocols to address substance use as part of usual care, but quickly learned that an undercutting element existed in the form of lack of education and training, which were needed to facilitate a successful clinical program. In attempts to help motivate a shift in our culture, we identified core strategies that needed to be part of our programmatic roadmap. When speaking of organizational change, and the need to identify clear drivers and barriers for the intended change, the educational gap highlighted potential opportunities for the team.

Working alongside multiple clinical  
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## MEDICAL EDUCATION

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cal departments within Northwell Health and faculty at the Zucker School of Medicine, the largest healthcare organization in New York State embarked on a journey of inclusion—from clinical frontlines to our next generation of clinicians. Our frontline training informed medical school curricula development, which in turn is helping to motivate and model best practices.

Our students have now become ambassadors and champions based on their thoughtful engagement and education. The collateral benefit of focusing efforts earlier on in the career process will undoubtedly challenge the norm and help drive Health System cultural change/acceptance of the disease process that substance use and addiction represent. Our intention is that as our students, residents and other clinical team members progress in their careers, they will disseminate the empathetic and humanistic approaches they have learned and practiced.

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## FROM THE EDITOR

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tered Naloxone. Yet, the widespread implementation of these treatments and programs are stymied by ignorance at many levels. O'Glasser and O'Glasser, in a special Flashback 40 article, recall SGIM's commitment in

October 1999 to support the use of MAT when communities were opposed to it for uninformed reasons.

SGIM and its members have been fighting this issue since the early days of the Society. Given the

role that generalists play in ambulatory and inpatient clinical care, education and health delivery research it's logical that we will play an integral part in reducing the impact of this current epidemic. **SGIM**

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## FLASHBACK 40

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## MORNING REPORT

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rest; and pulmonary syndromes including pulmonary edema. Many of these side effects appear to be dose dependent. This case serves as a reminder for physicians to use naloxone in the smallest possible dose, to titrate to improvement in respiratory rate not mental status, and to monitor closely for side effects.

Note the following take home points:

1. Acute hypoxemic respiratory failure (AHRF) is caused by intrapulmonary shunting of blood resulting from airspace filling or

collapse and typically presents with dyspnea and tachypnea.

2. Side effects of naloxone include pulmonary edema, seizures, hallucinations, arrhythmias, and cardiac arrest and may be dose-dependent.

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## BEST PRACTICES: PART I

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the scene? In the last several decades, the internist, be it a hospitalist or a primary care physician, has matured into an expanding role in peri-operative medicine. The internist has a unique role to play in assessing, optimizing, and managing multiple comorbid conditions before and after surgery. Additionally, addiction medicine, though it can be approached from multiple specialties and subspecialties, has seen an expanding presence by internal medicine. Is there room or potential for a convergence of these two internal medicine niches?

A nuanced, patient-centered pre-operative medicine evaluation should account for any and all comorbid conditions that impact peri-operative risk. This includes substance use disorder, active or in remission. The internist in the pre-op clinic may be uniquely positioned to coordinate complex multidisciplinary care and transitions of care, and has a duty to provide trauma-informed care that addresses both physical and social determinants. Specific challenges may include the following:

- How can providers better incorporate patient preferences when tailoring a plan for perioperative pain management?
- What counseling should patients receive about risks of opioids prior to surgery?

- How can addiction medicine providers best be included in the multidisciplinary management?
- Can MAT be initiated pre-operatively by a PCP or by a dedicated pre-op clinic?
- Should pre-op internists become buprenorphine certified?
- Should an otherwise healthy patient with a history of substance use disorder require a pre-op evaluation before the day-of-surgery?
- How should complications of substance use disorder (HIV, HCV, alcoholic liver disease, cardiac complications, comorbid psychiatric disease) be factored into the pre-op eval?
- Is there a role for pre-operative outpatient or post-operative inpatient addiction medicine consultation?
- How can compassionate, patient-centered care for patient with a history of addiction be provided in the peri-operative setting?

Peri-operative medicine and addiction medicine stand to prove their important overlap. Awareness of the issue and attention to the matter are the first steps.

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## PRESIDENT'S COLUMN

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identifying and preventing bias in educational presentations.<sup>2</sup> These authors strongly recommend avoiding even small gifts of food or other tokens at annual meetings.<sup>3</sup>

After reviewing this extensive recent literature and carefully considering SGIM's path to this point, five key principles for moving forward emerge.

### 1. **A thoughtful and principled approach to external funds is a critical part of SGIM's identity.**

Our principled and cautious approach to external funds is an important part of what makes SGIM special and should be preserved. A lack of careful attention to this issue could adversely affect our decisions as clinicians, educators, researchers, and policymakers, the content of the Annual Meeting, and reduce the critical distance between the Society's leadership and industry that is essential for effective decision making.

### 2. **The feeling of the Annual Meeting should be maintained.**

Members want and expect our Annual Meeting to not be awash in industry funds. Industry sponsorship of meals and distribution of other small gifts should be prohibited.<sup>4</sup> Special energy should be devoted to avoiding any adverse impact of external funds on trainees.

### 3. **Our current policy should continue to guide us.**

Our existing external funds policy is aligned with the aforementioned current recommendations from a variety of medical bodies. Council worries that attempting to revise the policy could consume an enormous amount of time and energy, be divisive, and is unlikely to result in a policy that is much different from the current one (that is already more restrictive than those of our peer organizations). We should work within the spirit and the letter of this framework for the foreseeable future.

### 4. **Finances are a necessary means to pursue the values of the Society.**

Council has a fiduciary responsibility to be thoughtful stewards of the Society's finances. This means we need to responsibly examine a variety of sources of income, including those that are consistent with our external funds policy. Not all financial relationships represent meaningful conflicts of interest that risk undue influence or bias. Any acceptance of external funds must consider the roles that members play as clinicians, educators, investigators, and leaders. As noted by Dr. Alan Lichter in the recent special issue of *JAMA*, "Medicine must leave space for the legitimate and productive interactions that physicians have with industry."<sup>5</sup> Just as many of us advocate for engagement of all stakeholders in research, so too might we leave space for appropriate engagement with industry.

More than ever, maintaining the trust of our members and the public will hinge on the Society's ability to balance these external relationships with the critical distance and thoughtful processes required to avoid meaningful conflicts of interest.

SGIM2018 will focus on health information technology (IT), a topic where engagement of industry may be important and yet challenging. It could strike some members as odd to have a health IT meeting without exposure to new technologies (such as medical apps), while other members could perceive a health IT presence as raising a specter of undue influence. Even if—unlike the case for drug and device manufacturer influence over clinical decisions—few individual physicians are in positions to influence decisions about purchasing health IT or EMRs, maintaining our objectivity and independence is still critical. If we interact with the health IT

industry, we must preserve our ability to evaluate these technologies critically and push for improvements.

We should avoid the temptation to frame the issue as one of bending our principles in response to financial pressure. Fiscal challenges are unmistakably present. Current projections have future year Society budgets in deficit, which have historically been closed by increasing dues and meeting fees. The overall costs of hotel services/food have increased at a rate greater than our ability to raise registration fees. However, Council feels that we are close to the limits of how much we can ask members to pay, and it is easy to inadvertently put our staff and Development Committee in an unfortunate predicament when they are expected to help close a budget gap but feel constrained in how they can do so. Yet the issue is much more complex than just trying to close a budget gap, and framing the issue in this way implies that accepting external funding is somehow less principled than not accepting it.

### 5. **Process matters.**

Our external funds policy is important. Because it is not possible to devise a policy that anticipates every possible scenario, it is equally important to have a constructive, inclusive and transparent process for reviewing external funding to maintain the membership's trust. The current policy calls for a process in which general contributions (including contributions for the National Meeting and for all awards) will be reviewed by the Development Committee. All general contributions, except unrestricted educational grants less than \$5000, will also be reviewed by the Chair of the Ethics Committee. General contributions that raise concerns will undergo a full Ethics Committee review.

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## BEST PRACTICES: PART II

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therefore created teams within our clinic, to provide team-based continuity when the resident PCP is not in clinic. Each team, or “trio,” consists of a PGY-1, PGY-2, and PGY-3, with an assigned trio attending. When a patient’s PCP is not available, every effort is made to schedule the patient with another member of the PCP’s team. The teams have been built into the software used to schedule patients, under the support of our IT department and administrative team. We have also reinforced the team concept by creating door signs that display the names and faces of all physicians within a trio team, allowing patients to see their team when being roomed. Each team is also assigned a nurse and CMA in order to allow staff members and residents to get to know each other over time.

As we continue to optimize our staffing ratios, we hope to further implement team-based care using (1) huddle time for review of the team’s daily patient panels, (2) pre-visit planning in preparation for the clinic day, (3) processes for outreach to no-show patients, (4) methods for closing care gaps through referral

tracking of high risk patients, and (5) population health panel reporting to identify and reach out to patients within a PCP’s panel. Future initiatives requiring a redesign of our ambulatory care space may be aimed at co-location of team members to further improve team communication and rapport-building, as well as incorporating the team nurse and CMA onto the team door signs.

Transforming primary care is a challenge for any practice. Transforming primary care in a hospital-based, safety-net, resident practice adds numerous additional hurdles that require creative solutions. By working to improve the resident experience in clinic, collaborating with other members of our larger clinic team, and creating additional structures within each clinic to support residents and patients, we are taking important steps towards achieving our goal of innovative primary care transformation—one that promotes patient-doctor relationships through continuity of care, and that develops team-based solutions for delivering safe and quality medical care in a patient-centered fashion. We also hope that with the implementation of the above initiatives, we

will see an improvement in resident self-assessment results as it relates to our practice. We plan to reassess again in the 2019 academic year.

*Our program will always remember Dr. Alanna Stone for her tireless contributions to transforming primary care delivery at Emory. We would also like to acknowledge Dr. Reena Gupta and Margae Knox for their efforts visiting our practice as a Transforming Teaching Practices project site visit. We are appreciative to the Grady Memorial Hospital administrative and IT team in providing systems change and innovations through the EHR at our site.*

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## PRESIDENT’S COLUMN

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Proposals for research or educational projects requiring external funding are reviewed by the Research and Education committees respectively along with concurrent review by the Ethics Committee. Appeals are reviewed by the SGIM Executive Committee, which can confirm or override the original decision. All of these Committees are committed to maintaining the constructive relationships necessary for this process to work.

Perhaps the most important aspect of our next steps related to external funds involves ensuring we are moving forward together. Council is eager to adopt strategies in which all

voices on this important topic can be heard and valued, while understanding that unanimous approval may not be possible. If new external funding options are pursued within our current policy, the review process needs to be followed strictly and done transparently. Any changes to current SGIM practices in accepting external funds will first be done as a pilot, with evaluation and review of the results with the membership.

We welcome your thoughts about how to move forward.

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## BREADTH

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allow the “pilot” to succeed at scale, and demonstrating a return on investment.

Creating and disseminating innovation also requires a “safe space” for innovation in the regulatory environment. There is inevitably trial and error in developing great interventions, and resources to fund and protect the innovators are crucial. In Colorado, Mr. Kurowski cites the fact that the state allows tasting rooms as a key factor for success. For a microbrewery that is just getting off the ground, these offer a lifeline that determines the difference between profit and loss for operators at the size where innovation thrives. Similarly, this allows brewers interested in exploring small batches of novel seasonal varieties (for example, a hibiscus saison for a hot summer afternoon), an environment where the brewery can interact directly with the end consumer. This is a vital chance to hear feedback and rapidly iterate. These “safe spaces” may be uncommon but are similarly crucially important when it comes to healthcare system innovation. For example, the

Centers for Medicare and Medicaid Services (CMS) lacked a mechanism to fund promising innovations until the creation of CMMI—the CMS Innovation Center. By this point in the article, it may be no surprise that the director chosen for this immense effort was a general pediatrician, Dr. Patrick Conway. The VA is also notable in this regard, creating funding specifically for Centers of Innovation (COINs) across the country, and creating an entire funding mechanism (QUERI) focused on disseminating and implementing evidence-based practices—currently under the leadership of a general internist, Dr. David Atkins.

How, then, can we better support generalists to innovate and lead the changes so desperately needed in our healthcare system? The experience of successful microbreweries suggests the following four key lessons:

1. The best ideas often come from considering something mundane and common in a new way—seek out practices that are the

way “it’s always been done” to identify areas ripe for innovation.

2. Great ideas can come from anyone given the right tools, training, and environment. Leaders at every level must empower and enable staff to innovate.
3. Involve the end user early in the development process. If they don’t find it appealing, success is unlikely.
4. Advocate for, fund, and protect “safe spaces” for innovation.

Consider: what areas of your work are ripe for innovation? Are people in your care team/organization empowered to innovate? What safe spaces could be created for this? How can you involve the “consumer”—both patient and provider who must adopt your innovation—into the process earlier? This recipe—borrowed from industry—has the best chance of leading to the most palatable final product.

Warning: results may be intoxicating.

*SGIM*

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