Ethical analyses of new technologies tend to focus not just on the technologies themselves but on the ways we will use them. For example, the National Institutes of Health Web page on the ethics of CRISPR gene-editing technology notes that, while ethicists generally agree that CRISPR should be used in gene therapy, they have expressed concerns about its potential use in a regime of eugenics. Yet, as a growing literature in science and technology studies has indicated, technology is not a mere means, a neutral tool capable of being used for any ends humans might specify. The substitution of complex technologies for traditional clinical tools carries implicit ethical values that influence our subsequent choices.

Consider the difference between two devices that general internists use daily: the stethoscope and the electronic medical record (EMR). The stethoscope fits the philosopher Martin Heidegger’s description of a “simple tool.” As we use it, the stethoscope itself recedes from our attention, focusing our senses on the sounds of the patient’s bodily functions. It becomes, in a sense, an extension of our bodies, and it brings us closer to the patient’s own physical body. By contrast, the EMR tends to interpose itself between our patients and us, drawing our attention away from each patient toward a collection of facts about that patient. Often a series of “best practice advisories” generated by the patient’s basic characteristics provides a to-do list for a clinic visit before we get to know the patient and her own values and preferences. The increasing demands of the EMR have led physicians to spend more time at the computer than at the bedside, and medical educators like Abraham Verghese have consequently expressed concern that the next generation of physicians may not learn how to perform an adequate physical examination.

The danger of technological “solutionism” for physicians is that when we encounter a problem that resists algorithmic logic we will discount or overlook it, thereby failing to respond to the needs of the actual patient in front of us.

As this example suggests, the EMR is not simply an electronic version of the superannuated paper chart. Rather, it alters the physician-patient relationship and reframes the way we pursue the goods of medical care. The EMR leads physicians to view their patients primarily in terms of those characteristics that can be captured electronically and processed by algorithms, such as age and cholesterol level. It removes these data from the context of the patient’s unique life experience and treats the metrics as of utmost importance, obscuring the patient’s story behind a cloud of data points. Increasingly, the EMR also exposes physician and patient data to third parties such as insurers whose reimbursements are tied to indices of “quality care” captured in best practice advisories, thus rewarding those physicians who complete such measures even at the expense of attending to the actual patient. As Verghese argues, such technologies also attenuate our human capacities for excellence, especially as we neglect time-honored aspects.
FROM THE EDITOR

LIVING OUT OF YOUR COMFORT ZONE: WRITE LIKE NO ONE IS WATCHING

Joseph Conigliaro, MD, MPH, Editor in Chief, SGIM Forum

In September, my wife and I spent two weeks in Provence, France, hiking with close friends in the Verdon Gorge and the Luberon. This was the first time that we attempted a “hiking vacation,” so we were excited to try something new. We had taken several cycling vacations over the last several years and thought that this would be a good change. I figured if I can do 20-50 miles per day on a bike for 8 to 10 days, I could hike 9 to 12 miles per day on my feet for 10 days. I was wrong. Mind you, we had a fantastic time. It’s just that the experience was a reminder of taking things for granted and putting yourself out there, out of your comfort zone.

My goal in sharing my vacation destination with you is not to impress with the interesting places we visit but to share the lesson that I took from this experience and relate it to my career as an academic general internist. Like many in our field, before training, I possessed a narrow view of the opportunities available to internists. I was also not familiar with academic general internal medicine as a career. The idea of academic work and the scholarly activities related to it were not something I was ever exposed to. In fact, the thought of a career that depended on my communication skills, either written or oral, would have been anathema to me. Those skills were never my strongest and still something that I continue to find challenging today. It took a few role models and a national SGIM meeting to make me understand.

In these columns, I have often mentioned the influence of the mentors that have had an impact on me early on and why I am an academic general internist. These individuals, whether I encountered them in college, medical school, residency or beyond, have motivated me to put myself out there. They would share advice on not only what to write or how to write but also where to submit it. Peer-reviewed journals were always the ultimate destination for my best work and where it will presumably have the greatest impact. We always aimed for the journal with the highest impact factor. One thing I have noticed, however, during the time I have been Forum editor, is that many established colleagues and mentors today try to discourage early faculty from submitting their work to Forum or other non-peer reviewed publications because it lacks an impact factor. I have to admit that if you want continued on page 14
As promised, I am using this column to keep SGIM members updated on how Council is responding to the audit conducted by Pyramid Communications. As you may remember, SGIM Council engaged Pyramid Communications to audit not only our current brand, message, and communications but also our structure, processes, and staff capacity in order to provide strategic recommendations for improving our organization. Pyramid staff interviewed SGIM members, conducted ongoing conversations with staff and Council members, and reviewed results of a member survey on communications. Over the last several months, we have been responding to their very comprehensive and thoughtful audit and recommendations. The audit highlighted several positives of our organization as well as opportunities for growth. I want to share with you now the work we’re doing to enhance staff and leadership engagement.

The Pyramid audit identified the following opportunities for improvement:

- **SGIM has dedicated staff who are eager to do their best work.** We have an incredibly talented group of staff members who serve as liaisons to our committees and regions, and do an outstanding job organizing our communications and regional and annual meetings. Staff members’ professional development should be very important to us, and we need to do more to support our staff in their professional growth.

- **SGIM’s current strategic priorities are not effectively providing direction, structure, and focus for the organization and its staff.** The absence of an effective strategic plan causes our staff to work overtime to maintain the status quo rather than working toward clear and measurable strategic goals and objectives that advance SGIM’s interests.

The Pyramid group offered several specific recommendations, among them:

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The SGIM Forum, the official newsletter of the Society of General Internal Medicine, is a monthly publication that offers articles, essays, thought-pieces, and editorials that reflect on healthcare trends, report on Society activities, and air important issues in general internal medicine and the healthcare system at large. The mission of the Forum is to inspire, inform, and connect—both SGIM members and those interested in general internal medicine (clinical care, medical education, research, and health policy). Articles are selected or solicited based on topical interest, clarity of writing, and potential to engage the readership. The Editorial staff welcomes suggestions from the readership. Readers may contact the Editor, Managing Editor, or Associate Editors with comments, ideas, controversies, or potential articles. This news magazine is published by Springer.
When the law creating Medicare was passed in 1965 to pay for the care of the nation’s senior citizens, Congress reluctantly decided Medicare would temporarily pay teaching hospitals for physician training. Temporarily has lasted more than 52 years! Medicare originally paid hospitals for “allowable costs,” including the costs of graduate medical education (GME) programs. When the Prospective Payment System (PPS) was created in 1982, paying hospitals a fixed amount per admission for clinical care depending on the patient’s diagnosis-related group (DRG), Congress had to decide again whether Medicare would pay for GME. It chose to have Medicare continue paying, using a two-part funding mechanism. Direct GME (DGME) payments help teaching hospitals pay the salaries of residents, teaching faculty, and support staff along with other program costs. DGME is the product of three numbers: 1. a per resident amount, often determined in the 1980s, that varies by hospital, adjusted annually for inflation; 2. the number of residents in the hospital (capped for each hospital at 1997 levels); 3. the percentage of hospital inpatient days from Medicare beneficiaries. The Indirect Medical Education (IME) payment is a percentage amount added to each DRG payment. The percentage is calculated via a complex formula (the only U.S. statute containing an exponent!), where the key factor is the ratio of interns/residents to beds (IRB ratio). Congress defines the change in IME percentage for each 10% change in a hospital’s IRB ratio (IME adjustment). Of the $11.8 billion Medicare paid for GME in Fiscal Year 2016, $3.5 billion was for DGME and $8.3 billion for IME. The money is paid to hospitals sponsoring training programs rather than to the training programs, associated medical schools, or other hospitals where training occurs. These teaching hospitals receive between 15% and 43% IME add-ons to their DRG payments. When Congress created the IME payment, it deliberately set the IME adjustment at 11.6% (for each 10% change in the IRB ratio)—twice what economists believed it should be, so as not to risk damaging the financial stability of teaching hospitals. Since 1983, Congress has whittled the IME adjustment down to 5.5%. This means that a hospital with an IRB ratio of 0.6 gets IME payments 5.5% higher than one with a ratio of 0.5. The Medicare Payment Advisory Commission (MedPAC) and others have argued that this adjustment is still more than twice what is justified by comparing costs at teaching and non-teaching hospitals and should be decreased. This would mean reducing IME payments, harming hospitals that rely heavily on this funding stream.

GME funding is financed by the Medicare payroll tax, so is not vulnerable to the annual Congressional appropriations process. It can be changed only if Congress changes the laws authorizing Medicare, which doesn’t happen very often. All GME funds go to hospitals which can spend them as they see fit, not to medical schools or residency programs. While DGME payments clearly address the costs of training, IME payments are intended to address the increased costs for taking care of patients cared for at teaching hospitals who are sicker than those cared for at non-teaching hospitals, as well as the (alleged) inefficiency costs resulting from having trainees. This means that proposals to redirect GME funding to training programs instead of hospitals (as many have proposed) would likely only apply to DGME money. IME money would likely continue to go to hospitals. Historically, training programs that have trainees spend time in settings outside the hospital or hospital-owned facilities lose funding for the time trainees are there, discouraging community-based training. There have been solutions advanced to ameliorate this, but they are part of the annual appropriations process.

The Trump administration proposed changes in the GME program earlier this year that would cut 48 billion over the next ten years (or about 40% of the money spent). However, Congress has not been interested in adopting Trump’s proposals. While there have been many proposals over the last decade to change how the Federal government pays for GME, there haven’t been substantial changes for years. No one is expecting big changes soon.

Note. This piece was based on an earlier Forum article: Liebow M, Jaeger J, Schwartz M. How does Medicare pay for graduate medical education? 2012;35(5):8.
of medical care such as the physical examination.

Technologies, such as the EMR, also promote the kind of “solutionism” common in Silicon Valley in which complex human issues are reduced to technological problems and solved accordingly, as though we are just one “killer app” away from alleviating a previously intractable problem like poverty. Yet, as we physicians know well, our patients’ complaints often cannot be resolved so easily. The vexing problem of chronic pain, for example, has proven more difficult to treat than experts once thought, contributing in part to the present epidemic of opioid misuse and overdose. The danger of technological “solutionism” for physicians is that when we encounter a problem that resists algorithmic logic we will discount or overlook it, thereby failing to respond to the needs of the actual patient in front of us. For physicians who subscribe to this ideology, the acknowledgment of such problems will become difficult precisely because it would threaten the conceit that modern medicine will overcome human vulnerability by the application of increasingly sophisticated technology.

In response to these issues, physicians need not take the Luddite option and smash their office computers. Rather, we should begin by recognizing and testifying publicly to the foundational importance of the human physician-patient relationship. In a technological age, it is tempting for us physicians to think of our craft as a mechanical endeavor providing maximally efficient diagnosis and treatment. At our best, however, we can bridge the gap between our patients’ personal experience of illness and the science of medicine. At times, technologies like the EMR can outperform us in the completion of certain tasks. Yet, the EMR cannot embed its technical logic within a healing human relationship. Such a relationship arises between two persons who share a common humanity, particularly

the experience of vulnerability to disease and death. This relationship therefore makes possible the pursuit of virtues that would be otherwise unavailable, such as compassion, understood etymologically as “suffering-with.”

A discourse that identifies the benefits of the physician-patient relationship may allow us to redesign or redeploy technologies in a way that reinforces, rather than undermines, these goods. In particular, physicians may be able to justify interventions that promote the physician-patient relationship without appealing primarily to efficiency or cost-savings as a rationale, as is often the case presently. For example, we might argue that the documentation requirements for billing, a system made possible by the advent of the EMR, leads us to devote too much time to the computer instead of the patient, and as Verghese points out, the EMR often contains and even replicates inaccurate information anyway. Only if we explicitly describe the benefits of the physician-patient relationship can we align technological and financial incentives for the appropriate use of technology. For those of us who hope to avoid being replaced by an artificially intelligent “iDoctor,” such discussion about these goods could not be more urgent.

References
In the bumpy twilight of drifting between sleep and wakefulness, a frequent and frustrating feeling when traveling in uncomfortably upright seats in economy class on red-eye flights, I heard the announcement: “We are looking for a doctor on board. If there’s a doctor on board, please notify a flight attendant.” As the heavy cloud on my brain slowly lifted, I tapped my partner on the shoulder so I could exit towards the aisle and find a flight attendant.

Moving to action then felt disturbingly like being aroused from REM sleep during overnight call by a loudly buzzing pager in residency. Also similarly, in this case, that foggy brain feeling was swept away instantly when I was brought to the patient, unresponsive and slumped over on a foldable crew member seat. In this unfamiliar setting, it was only in retrospect that I realized how many questions or issues I had not previously considered in such a situation. At the time, this was only the second time I responded to such a call, and the first of such a call on an international flight. Unfortunately, it was also not my last.

Being unaware at the time of potential risks of providing in-flight assistance in a place where U.S. Good Samaritan laws might not apply or equivalents might not even exist, I responded then in the automatic ways in which I had been trained to do so given the clinical circumstances—except that we were more than 30,000 feet up, somewhere in transit from roughly the southern U.S. border and the Caribbean on a flight originating from Canada and traveling to South America.

Current knowledge of in-flight emergencies, availability of equipment and medications onboard, and expectations of the physician responding to a call for medical assistance are still often mired in confusion. The most comprehensive article to date—which discusses common in-flight emergencies, the medical kit contents for commercial U.S. flights (which haven’t been updated since 2001), and recommended responses by the responding physicians—was published by the New England Journal of Medicine in September 2015 nearly one month after I experienced this international in-flight medical emergency. It wouldn’t have helped me for a non-U.S. air carrier and flight anyway.

Since then, additional media articles, scholarly literature, blogs, and podcasts have emerged in an effort to provide more insight into this murky and potentially chaotic scenario. Most describe ethical and legal concerns in a domestic (U.S.) context and to a far lesser extent on international commercial flights; practical tips and considerations for physicians who find themselves assisting in an in-flight emergency (e.g., carry a pocket license, and even your own small supply of certain medications or equipment); and, less commonly, issues of discrimination against some volunteering physicians on the basis of race or gender.

Carrying a pocket license is a must. In addition to concerns about ethical and legal implications of medical response to in-flight emergencies, I would add a few more unexpected considerations that may arise on commercial flights that have at least one non-U.S. stop. These are anecdotal, based on my experiences from three in-flight medical emergencies on such international trips:

- **Asking for help:** Help from crew members and from other health professionals who also respond to the call for assistance are enormously useful. While requesting on-the-ground medical assistance is supposedly possible, I have never requested it, simply because I had not been aware of it at the time, nor had it been offered.
- **Using a translator:** If you and the patient speak different languages, can you use a crew member, a travel companion (of the patient’s or your own), or another passenger as a translator? If not, then is this sufficient?
ly considered a “situation where there were no better alternatives and to do nothing would have been harmful” so that Google translate may be usable? ³

- **Beware units of measurement:** Consider the humble glucometer, which in the United States we use to measure blood glucose in mg/dL. However, most international commercial airlines probably carry one that uses mmol/L. ⁶

- **Handling handoffs:** Don’t be surprised if a health professional you hand off to in another country is curt. As usual, assert the highest priority information quickly in the transition of care. I did this verbally and in English during a medically necessary diversion, as well as when recommending a patient deboard before a flight departed from the gate. There is no question that written documentation has no role here; I only wrote documentation that was requested by the crew for justification of the diversion.

- **Knowing of current public health outbreaks:** In one in-flight response, a crew member nervously asked me if a passenger had symptoms suggestive of Middle East respiratory syndrome (MERS), in 2015, when I was on a flight in the region. Thankfully, he did not, and we could proceed with the flight without triggering any quarantine protocols.

The best rule of thumb for now is simply to practice what we know best in on-the-ground interpersonal and patient communication, as well as team dynamics and care. On that flight from Canada to South America, I was pleased to work alongside a physician from Quebec and a nurse from São Paolo, and with unquestioning support and understanding from the crew and the pilots. I recommended immediate diversion and they made it happen.

Despite subpar equipment—it’s an impossible task to use a cheap stethoscope to check a manual blood pressure in a cramped galley, with the roar of jet engines in the background—the team efforts and decisive actions taken led to a diversion that took two hours from decision to landing in a different country than our departure and destination countries to reparture.

There is an inherent and inevitable transience and discontinuity to the interactions of managing in-flight emergencies that troubles me as a primary care physician. To this day, I still wonder how that patient is doing, given her emergency treatment in a foreign land. I can only just imagine how confusing it must have been for her, how stressful for her colleagues, friends, and family that she would be hospitalized in another country so unexpectedly. I never met the pilots, and, of course, never met the crew again. I lost contact with the doctor and nurse who also assisted. I later received a kind letter of thanks from the airline, also offering a large number of award miles as compensation; I didn’t end up cashing them in.

I wonder also sometimes how much it must have cost for the airline to orchestrate the diversion or how many other passengers were affected by it, as there was undoubtedly a domino of missed connections and delayed flights. Of course, I still have zero doubts that I made the right call to divert that plane given the clinical scenario.

Yet, even with clear skies and no clouds of sleepiness needing to be shrugged off as I step forward to assist during a future in-flight medical emergency on a flight involving a non-U.S. country, I will still have lingering doubts. There are still no good resources to guide physicians, whether from the United States or other countries, in these situations. Even the most diligent physician, who might try looking up applicable laws or even equipment regulations prior to taking an international flight, would probably be lucky to find information to address country-specific information to guide the decision to respond to a call for in-flight medical assistance. The lack of clarity could lead physicians to hesitate or abstain from responding to such calls, even though most are probably willing to offer their help. The next time I hear that call for in-flight medical assistance on an international flight, I’ll still be mindful of these issues but also still offer what I can, on good faith, and in the absence of better alternatives to access emergency care for an unexpected patient in need.

**References**


A 67-year-old gentleman with prior tobacco use and untreated hypertension presented to the emergency department with 5 days of left chest, shoulder, and arm pain following 2 months of exertional left arm pain.

The differential diagnosis of chest pain in the emergency department should initially focus on life-threatening conditions including acute coronary syndrome (ACS), aortic dissection, pulmonary embolism (PE), pneumothorax, pericardial tamponade, and esophageal rupture. This patient’s subacute chest pain in the setting of exertional arm pain warrants an expanded history to gauge pre-test probability of these emergency conditions.

The chest pain was sharp, constant, radiating to the left arm and associated with exertional dyspnea relieved by rest. There was no diaphoresis, nausea, vomiting, pre-syncop, or fever. Heart rate was 87 bpm, blood pressure 173/71 mmHg, and respiratory rate and oxygenation were normal. Physical exam revealed midline trachea, regular heart rhythm, III/VI high-pitched holosystolic murmur with radiation to the axilla, normal jugular venous pressure, clear lungs, and no edema.

An EKG and cardiac biomarkers are warranted. The patient’s WELLs score of 0 makes PE unlikely, and the patient does not have exam features suggestive of tamponade or pneumothorax. The holosystolic murmur is most suggestive of previously undiagnosed mitral regurgitation (MR) and warrants transthoracic echocardiography (TTE).

CBC and Basic Metabolic Panel were unremarkable. The patient’s troponins trended from < 0.02 to 0.04 to 0.03 ng/ml (elevation is > 0.04). NT-proBNP was normal at 85 pg/ml. EKG revealed sinus rhythm without ST segment depression or T wave inversions. Chest X-Ray showed normal cardiac silhouette and no pulmonary edema, effusions, or consolidation. TTE revealed normal LV EF (55-60%) and wall motion, moderately dilated left atrium, and severe mitral regurgitation.

The objective studies are notable for borderline troponins and severe mitral regurgitation on TTE. The differential diagnosis for cardiac troponin elevation can be divided into ACS and non-ACS related causes. The lack of EKG changes and borderline troponins that peaked and fell during a prolonged episode of chest pain both point away from ACS in this patient. Non-ACS related causes are myriad and include advanced heart failure, valvular disease, acute pericarditis, cerebrovascular accidents, acute pulmonary embolism, trauma, chronic kidney disease, and sepsis. Similarly, the etiology of MR can be divided into ischemic and non-ischemic causes. Ischemic MR results from papillary muscle rupture. Non-ischemic MR results from ruptured mitral chordae tendinae (flail leaflet) due to myxomatous disease, infective endocarditis, rheumatic heart disease, or trauma. The patient’s dilated left atrium and absence of wall motion abnormalities suggests the MR may be a chronic, non-ischemic process in which the left atrium has had time to accommodate and improve its compliance in the setting of increased volume. A transesophageal echocardiogram (TEE) may better characterize the mechanism and severity of MR, and coronary angiogram may be warranted to rule out significant coronary obstruction if valvular surgery is planned.

TEE revealed a flail posterior mitral valve leaflet without vegetation and LVEF 60%. Coronary angiogram showed non-obstructive coronary artery disease. The patient did not have exam findings consistent with heart failure or hypoperfusion; therefore, he was discharged home with plans to perform mitral valve repair as an outpatient. Subsequent exams revealed reproducible upper chest wall pain that was ultimately deemed “musculoskeletal” in origin.

The patient should be discharged on aspirin and a statin for his non-obstructive coronary artery disease and an ACE inhibitor or ARB for his hypertension. The decision to proceed with mitral valve intervention depends upon the stage of MR—characterized by the presence of symptoms, LVEF, and LV end-systolic dimension. The patient’s exertional dyspnea was likely a symptom of chronic MR; thus, the patient would be a candidate for corrective mitral surgery.

On his preoperative evaluation at our hospitalist led pre-op clinic, he continued to endorse left upper “chest” pain that was localized to the left deltoid region on more detailed history, associated with burning pain radiating to the left elbow and wrist. He also noticed recent loss of hand grip strength and dexterity. Surgical history iden-
tified emergent C3-6 laminectomy 7 years prior for acute central cord syndrome in the setting of underlying cervical stenosis—he recalled a fall and injury while hanging Christmas decorations. He reports no current neck pain but confirmed his arm pain was reminiscent of acute radicular symptoms at that time. Preoperative exam was notable for limited neck extension, left hand abduction weakness, and pain localized to the left C5-6 dermatomes.

The additional history reveals crucial prior medical and surgical events, significantly influencing the original differential diagnosis for his pain. The patient’s current symptoms suggest that his “upper chest pain” was likely C5 radiculopathy. A complete past surgical history at the time of his index admission may have raised awareness of this sooner, shedding light on an alternative etiology of his chest pain. The differential diagnosis now includes central canal stenosis, foraminal stenosis, herniated disc and thoracic outlet syndrome. Cervical spine disease is important to consider before intubation given the risk of spinal cord injury and permanent neurologic damage. Case reports document acute quadriplegia or tetraplegia after open heart surgery, which often utilizes hyperextension of the neck/upper torso to facilitate sternotomy, potentially aggravating underlying spine pathology. Interestingly, one case similarly had the patient present with LUE symptoms, felt to be an angina equivalent.

C-Spine MRI revealed several foci of myelomalacia and multilevel foraminal stenosis, worse at C4-5 and C5-6, without central canal stenosis. The MRI findings are consistent with the patient’s exam. The myelomalacia suggests the patient’s symptoms are unlikely to improve. The lack of central canal stenosis is reassuring, and management can focus on the foraminal stenosis. Successful c-spine protection during cardiac surgery is reported.

Spine precautions were utilized during intubation and surgery. The mitral valve repair was successful without neurologic injury.

Cervical spine pathology is an important consideration prior to surgery. If there is concern for pre-operative cervical spine disease, advanced imaging should be considered if it will change peri-operative care while carefully weighing the risks and benefits of potentially delaying indicated surgery to obtain cervical spine assessments.

References
A 71-year-old male with a past history that included throat cancer, end stage renal disease (ESRD), coronary artery disease (CAD) with congestive heart failure (CHF), and rheumatoid arthritis (RA) was transferred from the intensive care unit (ICU) to our general medical service overnight. While in the ICU, he was treated for acute respiratory failure secondary to pneumonia without requiring ventilator support. On the night of transfer, the patient had suffered an unwitnessed fall. On our initial evaluation the patient was responsive to painful stimuli and unable to establish orientation, a new finding since admission. Given the alteration in sensorium, CT brain without contrast was performed revealing a right frontal subdural hematoma measuring 3mm with no midline shift.

In caring for a complex inpatient, several lines of query often need to be addressed simultaneously. In the foreground, currently we need to consider the etiology of the hematoma, and whether it needs surgical evacuation. Factors that may contribute to intracerebral bleeding in this patient include platelet dysfunction secondary to renal disease and blood thinning medications given his history of CAD. Urgent or emergent surgical evacuation of a SDH is recommended if the clot thickness exceeds 10 mm or the midline shift is greater than 5 mm, regardless of the neurologic condition. 1

Labs revealed a thrombocytopenia with platelet count of 117 K/µL. His antiplatelet medications were discontinued. His platelet count dropped to 70 K/µL requiring multiple transfusions to maintain counts above 100 K/µL. His other labs were as follows: Na 144, K 5.4, Cl 97, CO₂ 28, BUN 24, Cr 4.85, Ca 9.5, and Glucose 111. The SDH was monitored daily and managed conservatively with platelet transfusions.

Although subdural hematoma would be easy to anchor on, it is important to thoroughly investigate other causes... A review of the history of present illness would lead to the next decision point.

A review of the chart revealed that the patient presented to the emergency department with 2 days of shortness of breath and a cough productive of brown sputum. He was admitted at another hospital 3 weeks prior for pneumonia and was treated with a 10 day course of an unknown antibiotic. He also reported 2 weeks of watery diarrhea. He denied any abdominal pain, chest pain, hemoptysis, or leg swelling. His medications included prednisone and plaquenil and oral vancomycin for presumed C difficile infection. He was an ex-smoker with no history of alcohol or recreational drug use. He lived in a senior building with his wife and was retired from a career in the steel mill.

In the ED, the patient had a blood pressure of 149/90, pulse of 109, respiratory rate of 28, saturation of 89% on room air, and was afebrile. His respiratory exam exhibited no increased work of breathing but did reveal oral thrush, reduced air exchange, and coarse rhonchi in the upper lung fields. His initial labs were notable for a mildly elevated troponin (0.19) and potassium (5.5) with acidosis and lactate of 3.3. Records obtained from his prior admission revealed chronically elevated troponin (0.18-0.28). Electrocardiogram revealed left ventricular hypertrophy with no evidence of acute ischemia. A chest X-ray showing patchy ground-glass opacities involving both lung bases with small pleural effusions. He was admitted to intensive care and started on vancomycin, metronidazole, and cefepime as empiric therapy.

Defined as two episodes of pneumonia in one year or 3 episodes over any time frame, etiologies of recurrent pneumonia can include anatomical abnormalities, immunodeficiencies, aspiration syndromes, other
infections, and abnormal mucous clearance. Our patient was noted to be on immunosuppressants. Next steps to elucidate etiology would include imaging to evaluate for anatomical abnormalities such as abscess formation, and cultures to evaluate for secondary or untreated infections. In the meantime, guidelines recommend using clinical criteria to start empiric therapy for the management of hospital-acquired pneumonia, based on local antibiogram. The additional use of procalcitonin or C-reactive protein is not recommended. ESRD portends an elevated cardiac risk, and although his troponin levels have not been alarming, further cardiac imaging may help to lower cardiac causes on the differential.

A CT scan demonstrated multilobulated nodular mass-like consolidative opacities in both lower lobes, trace bilateral pleural effusions, and mildly enlarged right paravascular and subcarinal lymph nodes. A transthoracic echocardiogram revealed normal cavity size, wall thickness, systolic function, and ejection fraction. The mitral valve annulus and leaflets were mildly calcified with no vegetation. There was moderate aortic valve thickening, consistent with sclerosis.

His history of throat cancer brings up the concern for recurrent, or a de novo, malignancy. Given immunosuppression, an atypical or opportunistic pneumonia should also be explored with both noninvasive and invasive testing to establish an accurate diagnosis. Bronchoscopy with endoscopic sampling would be the natural next step. However in patients with traumatic brain injury, caution is advised due to risk of raising intracranial pressure, albeit transiently. Finally, a careful review of his medications may reveal other causative agents for delirium.

Sputum cultures and galactomannan antigen were sent. Bronchoscopy was delayed due to continuing alteration in sensorium and poorly controlled blood pressure. A review of medications raised concern for possible cefepime neurotoxicity, and this was switched to piperacillin-tazobactam. An MRI of the brain was pursued to rule out recurrence of malignancy causing altered mental status and results showed no mass or midline shift, mild-to-moderate white matter ischemic disease, and no enhancing lesions. The small cerebral convexity subdural hemorrhage had not changed.

Cefepime-induced neurotoxicity most commonly presents with altered mental status, with reduced consciousness (47%), myoclonus (42%), and confusion (42%). Electroencephalography abnormalities are nonspecific, including non-convulsive status epilepticus (25%), myoclonic status epilepticus (7%), triphasic waves (40%), and focal sharp waves (39%). This adverse reaction can occur despite appropriate dosing, usually resolves with drug interruption, but may require additional interventions such as antiepileptic drug administration or dialysis.

The patient’s mentation improved by day 3 and he underwent endobronchial ultrasound (EBUS), revealing thick secretions throughout the entire bronchial tree. Preliminary studies were positive for parainfluenza virus. There was no evidence of malignancy. Microbiology reported acid fast branching filamentous rods with beaded appearance on modified Ziehl-Neelsen staining, suggesting nocardia infection. The antibiotic regimen was narrowed to renal-dosed intravenous trimethoprim-sulfamethoxazole (TMX) and amikacin. The patient’s mentation improved significantly and he was transferred to acute rehabilitation with an anticipated 6-month antibiotic regimen.

**Conclusion**

Nocardia is a pathogen in immunocompromised patients. Diagnostic accuracy is paramount since resistance to common antibiotics is high, and duration of treatment is prolonged. Our patient’s immunocompromised state put him at risk for opportunistic infections and his complex history put us on a tortuous path to his final diagnosis—Nocardia cyriacigeorgiae pneumonia. Although there was no evidence for disseminated nocardiosis, he required long term antibiotics with close follow-up.

When faced with a patient with acute delirium, a thorough review of the history, and detailed evaluation of abnormalities found, is necessary in accomplishing an accurate diagnosis.

**References**


Introduction

I have been an academic clinician-teacher-administrator at the University of Washington since 1991. My most recent role as the medical director of our health system’s accountable care programs led me to want to better understand how other countries work to improve care coordination and chronic disease management to improve the value of health care. Although I knew that barriers would abound, I started thinking about taking a first-ever sabbatical. My wife and I had always wanted to live in Europe, so we began thinking about where we could live that would provide the right professional and personal opportunities. I studied German in college and was eager to resurrect that. Some Expedia searches confirmed that almost all European capitals are less than two hours by plane from Berlin. That settled it—Berlin became our destination!

Planning

With an idea of what we wanted, we now turned our attention to how to get it. Questions at this point included how long of a sabbatical would I take and when? Would I receive any salary support? What would I actually do? Who would take care of our house and dog?

Our daughter was willing and able to house and dog sit. Her “hard stop” at the end of June 2018 defined our end date. My job responsibilities determined possible starting dates. Ultimately, we chose December 1, 2017, to June 30, 2018, as my sabbatical start and end dates. Because we decided against pursuing a work or study visa, we had the 90 days allowed for tourists to be in the Schengen zone of Europe, which includes Germany and most of Continental Europe.

Initially, my boss was supportive of the time away, though noncommittal on whether any funding would be available. My institution classifies most medical school faculty as “without tenure for reasons of funding” which means that one must find internal or external funding to have an income and benefits. The conversation about funding repeated itself several times. Over the same time, I assumed a leadership role in our health system’s work to improve the care of people with hypertension. As I dug into that, I became aware of many knowledge gaps about these patients, as well as the need to develop a series of system-wide initiatives to support this work. Ultimately, our health system leadership agreed to fund me at 20% for 7 months to do this. Fortunately, I have great clinical partners, so coverage of my patients was not difficult to arrange.

Coincident with these preparations, I began searching for collaborators in Europe. I identified leaders in medical organizations or academic institutions who were doing work that seemed likely to advance my goals. I sent many e-mails to people in Europe. Ultimately, I identified two people in Berlin (who subsequently connected me with others), two people in Heidelberg, and three people in the Netherlands. English is the common language for medical science in Europe so there were no substantive language barriers to developing collaborations.

Arrival and Early Work

Ultimately, we left Seattle on December 31 with a plan for me to examine a data set of our hypertension patients; to develop and carry out plans for quality improvement activities via participation remotely; and, a list of meetings with Europeans in the areas of hypertension, diabetes, and care management. We rented an apartment in the Friedenau district of Berlin and arrived New Year’s night with an enthusiasm for many discoveries and new experiences to come. We were not disappointed!

Within a week, I had my first meeting with an internal medicine physician who works with the Kassenärztliche Vereinigungen (KBV), also known as the National Association of Statutory Health Insurance.
Physicians. This organization manages the nationwide approach to contracts and quality assurance for work in primary care practices in Germany. Subsequently, I met with two other people working at KBV who helped me understand the German approach to organization of care and chronic disease quality improvement. The most well-developed chronic disease program is for people with type-2 diabetes, which supports quarterly visits with primary care physicians to collect standard data and manage care according to a standard practice guideline. This has existed since 2003 and has more than 4 million patients enrolled. Metrics such as HbA1c control, blood pressure control, and metformin and statin use have all improved during this time. However, I was surprised to learn that the blood pressure control rate for diabetics is lower in Germany than in the United States.

Germany has universal health insurance coverage, but significant gaps and variations in care remain. For example, there is no universal electronic medical record in Germany and information sharing is more difficult in the United States due to differences in privacy laws. Patients tend to switch doctors more often than I expected. In addition, patients have direct access to specialists, which increases the risk of communication gaps among the doctors who are taking care of a given patient. I was surprised that there is minimal development of mid-level providers in the German healthcare system and care teams tend to be very small.

Later Work
In early February, we travelled to the Netherlands. I met with a family physician who leads clinical practice guideline development for the Nederlands Huisartsen Genootschap, or the Dutch General Practitioners Association. These widely used guidelines include an approach to cardiovascular disease prevention that integrates lifestyle changes including smoking cessation, as well as control of blood pressure and lipids. In general, Dutch family practitioners are less likely to use medications and more likely to recommend lifestyle management. This makes their overall treatment approach more conservative than most of the Eurozone. The Dutch patient-physician primary care relationship is very strong, with patients valuing continuity in a way that seemed different from Germany.

In late February, we travelled to Heidelberg, Germany, where I visited a University-based health services research group. Among other things, this group has organized and evaluated several different care management models in the state of Baden Württemberg in which Heidelberg is located. In general, care management work in Germany uses practice assistants—approximately equivalent to medical assistants in the United States. In both Germany and the Netherlands, registered nurses are employed very little, if at all, for these functions.

Conclusions
I found the working groups in Germany and the Netherlands similar to the United States. There was evidence of strong collaboration, but also evidence of siloing, especially in Germany. I found some interest in creating a Europe-wide approach to some problems, such as cardiovascular risk reduction, but that had challenges as well. In the United States, large-scale approaches seem easier since most medical societies that develop clinical guidelines are national, for example, the American College of Physicians or of Cardiology. Undoubtedly, there are local variations in implementation that may impede or improve quality depending on the specifics, and that seemed to occur in both countries I visited.

From becoming much more adept in the German language to conducting a lot of work to better understand hypertension management, I accomplished all of the goals of my sabbatical. It influenced the work I had begun remotely about hypertension management in my healthcare organization. Aside from providing me a different and more global population perspective, the time away from my usual duties did allow for developing a more thoughtful, less hurried approach to change in our system. For many readers, this may be an important lesson—you do not have to leave town to have a productive sabbatical experience, although it makes it easier to do so.

Our time abroad did fulfill personal goals beyond expectations. To live in a non-tourist area of a large foreign city for a block of time and to get to know it very well were incomparable experiences. I attended several German conversation groups and through Facebook met a German rock-climbing partner who told me fascinating stories about the night the Berlin Wall “came down.” My wife and I also easily travelled to Amsterdam, Athens, Barcelona, Prague, Riga, and Warsaw.

For SGIM members who are eligible for a sabbatical (usually based on specified years of service), I urge you to strongly consider it. You may believe that there are insurmountable barriers, but ultimately, they are probably not as large as you think. It takes planning, and requires some trade-offs, but the experience is incomparable. Doing a sabbatical out of the United States will bring you even greater rewards—and offers a lot for your family, too!
to publish a primary research related article, *Forum* is not the place for it. I have even sent back manuscripts, encouraging the author to submit to a peer-reviewed journal. In the June 2018 *Forum*, Avital O’Glasser revisited Adam Gordon’s charge to submit to non-peer reviewed journals and they give ample reasons to do so.1 I like to think of *Forum* as “semi peer reviewed.” That is, the editorial board critiques articles as to their appropriateness, style, and writing clarity but not with the intent to reject them but get them in a form suitable for publication. By no means do we accept every article. As I mentioned earlier, some articles are just not suitable for *Forum*. But we work hard to get those manuscripts that would be of interest to SGIM members into publishable shape.

*Forum* is also a great publication to start submitting your early work. It reaches the very people who are interested in what you do and you can share your experiences and expertise around the good work you do in your practice, research and educational activities. It’s also a great place to try publishing innovative and different types of articles, such as perspective pieces, opinions, and creative writing. We offer a variety of article types with easy and straightforward instructions.2 I encourage both new and experienced faculty to consider *Forum* when thinking about where they want to submit something that’s a little bit out there or maybe a piece that might not seem so exciting but would be beneficial to our members.

In my current position as division chief, I am responsible for several young and not-so-young colleagues who have little experience in scholarly work and who struggle with their role as academic faculty. They are not convinced that they have anything to put out there that anyone wants to hear or read about. My job is to prove them wrong. Early on in my career, a colleague of mine gave me a book to help me and give me the confidence to unleash the inner writer inside. In her book, *Writing Down the Bones: Freeing the Writer Within*,3 Natalie Goldberg uses humor and practical suggestions to motivate and prompt those not accustomed to writing down their thoughts to successfully do so. The book is fun and easy to ready and I often reread sections of it when I hit a little writer’s block. I am also happy to offer suggestions on manuscripts at any stage of development.

The December issue is a great example of *Forum’s* value, both to the reader and to the writer. In this issue, Drs. Karches and Pomeranz explore the effect that the electronic medical record has had on the physician-patient relationship from an ethical viewpoint. In two descriptive yet informative pieces, Dr. David Dugdale shares his experience taking a sabbatical in Germany, offering some practical tips for anyone interested in doing the same and Dr. Tiffany Leung describes her experience when asked to respond to a patient in need on an international flight, also taking the opportunity to provide helpful information. All that and two intriguing cases await you.

Where else are you going to find all that?

References
1. O’Glasser A. Would you, could you...Write a non-peer-reviewed article any day? SGIM *Forum*. 2018;41(6):4-5,7.


• Develop a strategic plan with clear business and programmatic goals and measurable objectives to drive organizational activities;
• Shift the organizational structure so staff are working at the top of their scope to increase collaboration, effectiveness, and impact.

During the Council retreat in June, we set aside time to discuss these issues and recommendations. SGIM staff and Council had two discussions. The first involved separate break-out sessions in which each individual recorded his/her answers to specific questions on a flip chart. The staff session was held the week before the retreat and Council’s session was held on Sunday night. Individuals in each group responded to the following questions/statements:

• Describe the relationship between Council and Staff.
• How can Council and Staff work more effectively together in the strategic planning process, considering both Council Member and Council Liaison roles?

In our second discussion, we jointly reviewed all responses. Together, staff members and Council prioritized a draft set of commitments for our joint work and decided these guidelines should be used across the organization to bolster the shared understanding of the importance of our partnership. A smaller work group—Kay Ovington, Shelly-Ann Fluker, Luci Leykum, Erika Baker, and me—refined the prioritized items into a draft set of specific actions in four areas to improve the effectiveness of our collaborative work.

Draft Staff and Leadership Engagement Commitments:

1. How We Work Together as a Team
• Staff members and Council Liaisons partner and collaborate in all discussions related to the groups or activities on which they work across the lifespan of their activities.
• Staff members and Council Liaisons regularly check in before committee meetings to assure a coordinated message and united approach to any known issues or obstacles.
• Staff members are involved from the beginning, at Council and committee levels, in the planning, discussion, and decision-making regarding operationalizing the work of the organization.

2. How We Run Effective Meetings
• We collaboratively set goals that are Specific, Measurable, Attainable, Relevant, and Timely (SMART).
• We use effective facilitation skills to ensure our meetings are productive and engaging.
• We create action items, assign accountability, and communicate assignments following meetings in accordance with staff, council, and member roles and responsibilities.
  a. We proactively plan for and execute regular communication and information exchange throughout the year.

3. How I Do My Job Most Effectively
• We participate in the development and revision of guidelines for engagement among SGIM staff members, Council, and committee/group leaders.
• We participate in orientation activities and/or review orientation materials to ensure we understand our roles, responsibilities, and protocols for our position(s).

4. How We Get Better at What We Do
• We regularly seek feedback from each other on our roles and on the processes and systems that support our work.
• We are open to and readily identify and adopt more efficient ways of doing business.

These are still in draft form. We recognize more work and supporting documentation needs to be added to ensure the ideals noted here can be realized to support an authentic, collaborative, and productive working relationship. I wanted to share this draft document to inform how you, as SGIM members and leaders, work with our SGIM staff. In SGIM, we are lucky to have an incredibly talented staff and dedicated passionate members who are excited and committed to the work we do as an organization. We offer these commitments as a supporting structure for our work together.

We hope you will reach out to Kay Ovington or me to provide feedback on how we can improve or add to these commitments to move us forward and strengthen our collaborative working relationship.