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Ischemic Hepatitis and Acute Kidney Injury Following Cardioversion

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INTRODUCTION

Ischemic hepatitis often is defined as a marked and reversible elevation in serum aminotransferase levels in the absence of other causes.¹ It is thought to be a result of an acute episode of hypoperfusion. This may occur with an acute drop in systolic blood pressure or episodes of transient subclinical falls in perfusion. Patients with chronic heart failure are particularly susceptible to even transient falls in pressure due to underlying hepatic congestion.¹,² Such a fall in pressure can be seen following cardioversion and may lead to hypoperfusion of the liver.³ The event is observed in one third of cardioversions and can lead to significant consequences.

The report described a patient with a history of diastolic heart failure and severe tricuspid regurgitation who underwent cardioversion and subsequently developed ischemic hepatitis. A review of the literature led us to believe there was only one other study documenting cardioversion induced ischemic hepatitis and our case was rare with the patient having concurrent tricuspid regurgitation.⁴

CASE REPORT

A 58-year-old male with a past medical history of paroxysmal atrial fibrillation/flutter, diastolic heart failure, severe tricuspid (TR) and mitral (MR) regurgitation, coronary artery disease status post coronary artery bypass graft, and substance abuse presented to the emergency department with shortness of breath, chest tightness, nausea, and lower extremity swelling for one to two weeks. The patient had not been compliant with his medications. His heart rate (HR) was irregular with a documented rate of 95 bpm, blood pressure was 132/81 mmHg, and oxygen saturation was 97% on room air. His weight was 209 pounds, up from a baseline of approximately 185 pounds.

Chest x-ray showed cardiomegaly and pulmonary vascular congestion. B-type Natriuretic Peptide (BNP) and troponin were elevated. Prothrombin time, international normalized ratio, liver enzymes, electrolytes, blood urine nitrogen, and creatine (Cr) were within normal limits.

The urine drug screen was negative. Electrocardiogram (ECG) showed atrial flutter with a 3:1 AV conduction and a rate of 85 bpm. He was admitted for heart failure exacerbation and home medications were resumed including metoprolol, aspirin, apixaban, and atorvastatin. Diuresis was initiated with intravenous furosemide and oral metolazone.

Troponin peaked at 0.185 ng/mL during the event before trending down back to 0.033 ng/mL. The trend in troponin was attributed to demand ischemia. The patient tolerated diuresis well and his weight returned to baseline after four days. Heart rate was variable during this time, ranging from 67 to 126 bpm, with most readings being over 100. Blood pressure was stable with systolic at 120-135 mmHg and diastolic at 70-90 mmHg. HR remained elevated despite medical treatment; thus, it was decided to attempt cardioversion. In preparation, a transesophageal echocardiogram (TEE) showed no atrial thrombus, but rather severe mitral and tricuspid insufficiency. The morning of the TEE, vital signs remained stable and labs were unremarkable.

The following morning Cr increased to 1.88 mg/dL and Blood Urea Nitrogen (BUN) 40 mg/dL. The patient underwent successful cardioversion and oral Amiodarone was initiated. Following the procedure blood pressure was 87/61 mmHg. Pressures remained suboptimal throughout the morning: systolic 90-93 mmHg and diastolic 60-73 mmHg. HR was 58-80 bpm. Blood pressure medications were held. Labs later that day showed an increase in serum Cr increased to 2.52 mg/dL, potassium (K+) to 6.4 mEq/L, and bicarbonate decreased from 29 to 19 mEq/L. Aspartate aminotransferase (AST) was 101 U/L, and alanine aminotransferase (ALT) was 79 U/L, an increase from AST 31 and ALT 24 one week prior. Total bilirubin (T Bil) also increased from 0.8 to 1.7 mg/dL.

The patient began complaining of right upper quadrant (RUQ) abdominal pain. Abdominal x-ray showed constipation but was otherwise unremarkable. Computed tomography of the abdomen and pelvis without contrast was unremarkable. Repeat labs revealed rising serum Cr up to 3.37 mg/dL, AST of 263 U/L, ALT of 203 U/L, and T bil of 19 mg/dL. Lactic acid was 5.0 mmol/L. Electrocardiogram (ECG) showed sinus rhythm with a rate of 60 bpm. Urinalysis was unremarkable. Creatine phosphokinase was within normal limits. The patient’s hypotension progressed, and a norepinephrine drip was started. The patient continued to be in sinus rhythm with heart rate ranging between 60-80 bpm. Blood and urine cultures were obtained, and broad-spectrum antibiotics were initiated.

The morning after cardioversion, labs showed AST of 6694 U/L, ALT of 3254 U/L, T bil of 21.1 mg/dL, and direct bilirubin 1.3 mg/dL. Cr and K also continued to rise, and a plan to start hemodialysis was initiated. Repeat echocardiogram showed similar findings as before, with ejection fraction of 50-55%, severe MR, moderate to severe TR with no evidence of cardiogenic shock. Blood pressures stabilized and the patient was weaned off pressor support, requiring less than 24 hours. Due to evidence of acute renal failure, urgent hemodialysis was started.

Amiodarone was held due to elevated liver enzymes; he received a total of 200 mg of oral amiodarone. The next morning, labs were AST 2928 U/L and ALT 2524 U/L, T bil 1.6 mg/dL, and INR 2.3. The viral hepatitis panel was negative. The patient tolerated dialysis well and kidney function and liver function improved. Cultures showed no growth at the 48-hour mark and hence antibiotics were stopped. Metoprolol and furosemide were slowly re-started, and patient tolerated them well.

DISCUSSION

The liver receives 25% of the total cardiac output, two-thirds of which is through portal venous blood, rich in basic nutrients, but lacking in oxygen, and one-third is by the hepatic artery carrying oxygen-rich...
The liver’s complex vascular supply and high metabolic activity makes it prone to circulatory disturbances. The risk of ischemic injury is increased in patients with preexisting portal hypertension or passive hepatic congestion.2,5 Passive hepatic congestion can be seen in congestive heart failure, as well as cases of tricuspid regurgitation. Right heart failure in particular leads to increased pressure in the venous system, which affects the hepatic vein indirectly. If the tricuspid valve is also insufficient, then pressures from the right heart are transmitted directly to the hepatic vein and sinusoids.5

Cardioversion typically leads to an increase in cardiac output, however, in approximately one third of cases there is a transient decrease in output.3,6 Upshaw3 revealed 35% of patients had a reduction in cardiac output at 10 minutes following cardioversion and 39% at 30 minutes. This decrease most often was corrected within 24 hours of cardioversion but lasted up to a week in some patients.3,6 The reduced cardiac performance post-cardioversion most likely occurred from the combination of heart disease, atrial/ventricular stunning, and cardiac depressant effects of anesthetic drugs used.3

This patient had an increase of liver enzymes more than 20 times the upper limit of normal and other causes, such as rhabdomyolysis and viral hepatitis, were ruled out as a cause of injury. The liver enzymes initially increased just hours after cardioversion and prior to sustained low blood pressure readings, leading us to believe there was a transient decrease in cardiac output immediately following cardioversion causing hypoperfusion to the liver and subsequent damage. Progressive hypotension within the 24 hours following cardioversion caused further damage.

To our knowledge, this event is rare and only one case report of cardioversion-induced ischemic hepatitis was found in the literature.4 Although this may be a rare cause of hepatocellular injury, it is an important risk to consider when a patient undergoes cardioversion, especially in the setting of progressive hypotension.

REFERENCES

Keywords: hepatitis, cardioversion, hypotension, tricuspid regurgitation, liver
Not Just a Rash: Herpes Zoster-induced Progressive Cardiac Block

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INTRODUCTION

Varicella-zoster virus (VZV) is a neurotropic virus that causes primary infection as chickenpox, which typically occurs in childhood, followed by a latent phase that can reactivate as shingles later in life.1,2 After the primary infection, the virus spreads from epidermal and mucosal lesions to local sensory nerves. It stays latent afterwards in the dorsal ganglion cells of sensory nerves. However, viral reactivation can occur due to stress or immune deficiency which results in shingles.3-5 Upon reactivation, it replicates in neuronal cell bodies, resulting in virions to shed from their carrier cells through the nerve to the skin area that is innervated by its ganglion. In the skin, it results in localized inflammation and blistering. The resulting pain is due to inflammation of the nerves affected by the virus.6

While VZV primarily affects the skin and nervous system, it has been implicated in cardiovascular complications such as heart block. Varicella-zoster virus (VZV)-related heart block is an infrequent but potentially serious complication of VZV infection.7 The incidence of VZV-related heart block was estimated to be less than 1% of all VZV infections. However, the risk of developing this complication is increased in immunocompromised patients, such as those with HIV or undergoing chemotherapy, as well as in elderly individuals. Symptoms of heart block can include dizziness, fainting, shortness of breath, and chest pain, and anyone experiencing these symptoms should seek medical care immediately.8

This case is a report of a patient that presented with a progressive conduction abnormality in the setting of shingles reactivation.

CASE REPORT

A 59-year-old male with a past medical history of hypertension, dyslipidemia, chronic kidney disease, gastroesophageal reflux, and childhood infection with chickenpox presented to the emergency department for esophageal pain. The patient reported burning pain in his esophagus and chest. The pain began five days prior to presentation and radiated directly beneath his left breast. The patient’s symptom onset was accompanied by shortness of breath with exertion. He denied palpitations, dizziness, or lightheadedness. The pain was associated with a reported red, itchy, burning rash without blisters over the left chest. He had not received the shingles vaccine and denied a history of shingles. Social history was unremarkable. There was no family history of premature sudden cardiac death.

On admission, the patient’s heart rate was 38 bpm, blood pressure was 132/61 mmHg, respiration rate was 22 breaths/min, and oxygen saturation was 95% on room air. On physical examination, the patient had a left-sided thoracic vesicular rash on an erythematosus base (Figure 1). Otherwise, his lungs were clear on auscultation, no cardiac murmur was detected, and no mucosal or skin lesions were found. Chest x-ray was unremarkable. He was given 2 mg of intravenous morphine, then 0.4 mg of sublingual nitroglycerine for his worsening chest pain. He was started on valacyclovir and placed under contact precautions. He was placed on telemetry.

High sensitivity troponin was negative twice during trending (49 ng/mL and 42 ng/mL, respectively). An electrocardiogram showed a second-degree heart block with 2:1 conduction and intermittent left bundle branch block (LBBB) with no signs of acute ischemia (Figure 2). During his stay, an echocardiogram showed normal ejection fraction of 65-70% with moderate concentric hypertrophy, moderate aortic stenosis, mildly dilated left atrium and grade 2 diastolic dysfunction.

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Figure 1. Vesicular rash was noted on an erythematous base in a dermatomal distribution.

Figure 2. EKG revealed Type II Mobitz II AV Block with 2:1 conduction and intermittent LBBB with no signs of acute ischemia.

The patient had intermittent but frequent LBBBs during his hospitalization suggestive of progressive conduction system disease. Hence, he underwent a Micra™ pacemaker placement without any complications. The rest of the hospital stay was uneventful, and the patient was later discharged to follow-up as outpatient with his cardiologist.

DISCUSSION

The diagnosis of VZV-related heart block is based on a combination of clinical evaluation, electrocardiogram (ECG), and laboratory testing. Clinical evaluation may include a thorough physical examination to assess for symptoms of heart block, such as syncope, dizziness, palpitations, and shortness of breath.7 The most common type of heart block seen in VZV-related heart block is the Mobitz type II or third-degree...
AV block, which is characterized by a complete blockage of electrical impulses between the atria and ventricles. Other ECG findings may include bundle branch block, premature ventricular contractions, and ventricular tachycardia.9

Laboratory testing may include serological tests to detect the presence of VZV antibodies or polymerase chain reaction (PCR) assays to confirm the presence of VZV DNA in the blood or cerebrospinal fluid. Elevated levels of inflammatory markers, such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR), also may suggest an active VZV infection.10 In some cases, additional testing may be necessary to confirm the diagnosis and guide management. This may include a Holter monitor to assess for the presence of blockages.11

Mobitz type II second degree atrioventricular (AV) blocks are caused by a disease of the conduction system distal to the AV node (Bundles of His and Purkinje fibers).12 Cells do not fatigue progressively, but rather unpredictably and abruptly fail to conduct the supraventricular impulse. The cause can be functional or anatomical.13,14 Increased parasympathetic tone or disruption of the sodium channels can precipitate the block.12

VZV myocarditis could lead to cardiac conduction disturbances and supraventricular, later ventricular, arrhythmias.15 Progressive decrease in inotropy after the beginning of zoster pain can culminate in bradycardia secondary to complete heart block.16 A possible and coincident VZV reactivation may occur at both the dorsal root ganglion and the cardiac sympathetic ganglia although no direct neural or vascular connections exist between the two. The progression of conduction abnormality preservation of chronotropic response in our patient may reflect a partial/complete block of the cardiac sympathetic ganglion, or a weakening of resting sympathetic tone.8 Since there are neither direct neural nor vascular connections between the dorsal root ganglia and the cardiac parasympathetic/sympathetic ganglia, VZV reactivation can occur at the dorsal root ganglion as well as the cardiac sympathetic ganglia. However, VZV-induced conduction pathologies may be reversible if the underlying condition is managed properly.17

Treatment for VZV-related heart block typically involves antiviral medications to treat the underlying VZV infection, as well as medication or procedures to manage the abnormal heart rhythm. Acyclovir is the most used antiviral drug, although valacyclovir and famciclovir also may be effective.18 If the heart block is severe, a temporary or permanent pacemaker may be necessary to regulate the heart’s electrical activity.19

Ma et al.20 reported a case of complete heart block induced by VZV reactivation. The suggestive etiology was a persistent elevation of anti-varicella zoster virus IgM antibodies. This led to a progressive slowing of the heart rate following the onset of zoster pain resulting in bradycardia then complete heart block. The patient subsequently had a pacemaker placement. Our patient’s VZV-related conduction abnormality may have manifested due to a similar pathophysiology.

CONCLUSIONS

VZV-related heart block is a rare but serious complication of VZV infection that can lead to an abnormal heart rhythm and potentially life-threatening complications. Diagnosis is based on a combination of clinical evaluation, ECG, and laboratory testing, and treatment involves antiviral medications and management of the abnormal heart rhythm.

Early diagnosis and treatment are crucial to prevent serious complications and improve outcomes.

REFERENCES

Acute Pancreatitis Secondary to Hypertriglyceridemia Presenting as Sepsis Without Abdominal Pain

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INTRODUCTION

Acute pancreatitis is a common emergency room diagnosis that often can lead to inpatient admission. In the U.S., acute pancreatitis accounts for 7% of yearly emergency department (ED) visits and 200,000 hospital admissions annually with an average hospital stay of 6.1 days. While it often can be seen as a benign disease, it boasts a mortality rate of 10-30%.

Diagnosis is made by establishing two of three main criteria that are composed of both subjective and objective findings: epigastric abdominal pain, elevated serum amylase/lipase greater than three times the upper limit of normal, and imaging consistent with the diagnosis. It is possible to see lipase elevation in the setting of acute renal failure, small bowel obstruction/perforation, acute cholecystitis, and diabetic ketoacidosis; however, the diagnosis of acute pancreatitis is considered most often in the context of acute abdominal pain and estimated to be present in up to 90% of cases.

The following case is an example of acute pancreatitis secondary to hypertriglyceridemia without abdominal pain in a patient presenting with sepsis who was subsequently found to be in diabetic ketoacidosis.

CASE REPORT

A 32-year-old male patient with a past medical history of newly diagnosed diabetes mellitus, recently diagnosed hyperlipidemia, hypertension, mood disorders, and methamphetamine use in remission presented to the ED with palpitations and constant right-sided chest wall pain for two days. He denied any abdominal pain and his physical exam showed no abdominal tenderness, distension, guarding, or rigidity. The patient did not appear to have any triggering medications that could have precipitated the event.

Initial cardiac workup showed an electrocardiogram with normal sinus rhythm, troponin < 0.01 ng/mL, and an unremarkable chest x-ray. The patient was tachycardic and tachypneic with a white blood cell count of 16.4 x 103/μL, anion gap 24 mEq/L, bicarbonate 7 mEq/L, pH 7.17, 2+ ketones on urinalysis, and hemoglobin A1c 14 mg/dL. Subsequently, a lipase test was found to be elevated at 472 U/L. Computed tomography (CT) without contrast of the abdomen revealed diffuse peri-pancreatic edema compatible with acute pancreatitis without a well-defined fluid collection. On nil-per-os status and an insulin drip, triglycerides decreased to < 500 mg/dL over the course of two days at which point the insulin was discontinued. The patient was started on fenofibrate and a statin prior to discharge.

DISCUSSION

Acute pancreatitis is a disease where prompt diagnosis and treatment are essential to avoid poor outcomes. While the quality and radiation of abdominal pain can vary, it is important to note how frequently this physical exam finding is used as a basis for diagnosis. This means that a lack of abdominal pain inadvertently may preclude some physicians from considering further acute pancreatitis workup with labs and imaging.

When considering a diagnosis of acute pancreatitis, it is important to evaluate the entire clinical picture rather than anchoring to the presence of abdominal pain. Although there is a prevalence of abdominal pain at presentation, the level of pain poorly correlates with disease severity or specific etiology of pancreatitis due to the subjective nature of pain perception.

Nair et al.2 showed that DKA may mask coexisting acute pancreatitis occurring in at least 10-15% of cases. Based on that study, the severity index based on CT findings has been shown to better correlate with outcome. Out of the eleven patients included in the study, two did not have abdominal pain on admission, like our case. Additionally, an estimated 10% of patients presenting with chronic pancreatitis reported no abdominal pain.3 Pancreatic nociception primarily is mediated by chemo-sensitive mechanisms stimulated by inflammatory mediators and mechanosensitive mechanisms on parenchymal blood vessels that are stimulated by ischemia, stretching, and necrosis. This cascade of pain stimulus begins with the release of pro-inflammatory mediators and continues down primary, secondary, and tertiary sensory neurons in the central nervous system. Eventually, neurotransmitters are released at both the dorsal horn of the spinal cord and primary nerve endings on the pancreas where they act as inflammatory mediators.

Poorly or uncontrolled diabetes can have unfortunate consequences that affect multiple organ systems.4-5 This commonly manifests in the gastrointestinal system as gastroparesis, esophageal dysmotility, and intestinal dysmotility. The mechanism of autonomic dysregulation and visceral neuropathy in a diabetic is multifactorial; however, neuronal damage and a decrease in sensory neuropeptides are thought to contribute heavily to decreased organ nociception. It has been proposed that insulin lowers the serum triglycerides (TG) levels by increasing the enzymatic activity of lipoprotein lipase which metabolizes chylomicrons and VLDLs into the free fatty acids and glycerol ultimately decreasing the serum TG levels.

In our patient, possible explanations for his lack of abdominal pain in the acute setting includes poorly controlled diabetes causing pancreatic nociceptive dysfunction that masked acute pancreatitis or undiagnosed painless chronic pancreatitis masked by diabetic nociceptive dysfunction that was potentiated by chronic inflammatory neuronal destruction. In the setting of acute pancreatitis, indirect laboratory findings combined with pertinent medical history are important when evaluating a patient who is presenting with atypical physical exam findings such...
as a lack of abdominal pain. Unfortunately, there is a paucity of literature highlighting the importance of seeing beyond abdominal pain as an initial indicator of acute pancreatitis.

REFERENCES

Keywords: abdominal pain, diabetes mellitus, hypertriglyceridemia, insulin, pancreatitis
Locked-In Presentation of Guillain-Barre Syndrome Following SARS-COVID-19 Infection

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INTRODUCTION

Guillain-Barre Syndrome (GBS) is an autoimmune-mediated polyneuropathy that is typically characterized by ascending flaccid weakness and loss of deep tendon reflexes. This condition is triggered by a preceding infection, often viral, in two-thirds of cases. GBS is the most common acute paralytic neuropathy, with almost 100,000 cases worldwide each year. However, a wide range of symptoms exist, many of which overlap with other critical illnesses. This creates a challenge in diagnosis, as other disorders must be ruled out, which may cause a delay in appropriate treatment.

Although the relative novelty of the SARS-COVID-19 virus limited the amount of data available, neurologic sequelae resulting from this virus are appearing in the literature. The majority of reported cases of COVID-associated GBS have presented with the classic features and response to standard treatment. The median onset of GBS symptoms is about two weeks following the start of COVID symptoms, which coincides with the phase of the illness where respiratory failure and multiorgan dysfunction typically peak. Thus, in critically ill COVID patients, the weakness from GBS may be attributed to critical illness neuropathy and left undiagnosed, leading to worsening disease and difficulty weaning from mechanical ventilation.

This case report described a rare presentation of GBS following COVID-19 infection.

CASE REPORT

A 56-year-old male with a past medical history of asthma on daily steroid inhaler, hypertension, hyperlipidemia, gastroesophageal reflux disease, and diet-controlled type II diabetes mellitus was admitted for severe hypoxic respiratory failure secondary to COVID-19 infection. He ultimately required a tracheostomy for ventilator dependence. He received a long course of steroids, given both intravenously and via gastrostomy tube, in addition to antibiotics for ventilator associated pneumonia.

Initially, the patient was alert, followed commands, and communicated while on the ventilator via nonverbal mouthing and gesturing. He gradually became less responsive and a magnetic resonance image (MRI) of the brain revealed small multifocal acute on subacute non-hemorrhagic infarcts, attributed to COVID-related coagulopathy. One week later, he had two episodes of seizure-like activity without electroencephalogram evidence of true seizures. A computed tomography of the head was obtained, showing substantial adverse change with diffuse bilateral hypodensities.

The patient was transferred to the Neurocritical Care Unit, where standard stroke workup was unremarkable. Follow-up non-contrast MRI brain showed multifocal T2 hyperintensities, suggesting leukoencephalopathy (Figure 1). Cerebral spinal fluid (CSF) studies were negative for infectious process but showed albuminocytologic dissociation typical of GBS. The CSF protein content was four times the upper limit of normal at 419 mg/dL, and although the white blood cell count was elevated (18 x 10^9/L) marginally, the lymphocyte count was extremely low (3%).

At that time the patient could open his eyes, exhibiting visual tracking and blinking for communication, but otherwise could not move. He was awake and followed simple commands in the form of eye motion, with extraocular movements intact to vertical and lateral gaze. Additional neurologic exam findings included pupils equal and reactive to light, intact blink response to visual threat, bulbar weakness with no palatal elevation or gag reflex, 0/5 motor strength in all extremities, absent deep tendon reflexes in all extremities, and negative Babinski reflex.

Figure 1. Magnetic resonance imaging of the brain without contrast showed development of extensive predominance of supratentorial and deep white matter T2 hyperintensities with a pattern distribution suggestive of leukoencephalopathy.

With this progressive weakness and preserved consciousness leading to “locked-in” presentation, there was suspicion for demyelinating disease. He had a contrast-enhanced MRI of his brain and lumbar spine that provided no definitive results. The decision was made to proceed with intravenous immune globulin (IVIG) therapy to treat suspected GBS. The patient showed mild improvements in alertness, nonverbal communication, and strength in his extremities following IVIG treatment (0.4g/kg daily for five days).

Although he remained very weak, he regained enough oral-bulbar strength to mouth words for communication, move his tongue on command, and swallow, along with return of his gag reflex. He exhibited 2/5 motor strength bilateral lower extremities, 2/5 strength in proximal upper extremities with improvement to 3/5 strength in hand grip and wrist extension bilaterally. After treatment, he was stable for discharge to a long-term acute care facility for continued rehabilitation.
DISCUSSION

Although GBS is considered a clinical diagnosis, useful ancillary tests include cerebrospinal fluid studies, electromyography, nerve conduction studies, and MRI. Albuminocytologic dissociation (increased total protein concentration with a normal total nucleated cell count) in the CSF is a hallmark finding of GBS and was the first clue to our patient’s diagnosis. Nerve conduction studies and needle myography are useful in distinguishing acute demyelinating neuropathy from axonal injury or neuromuscular junction disorders. While testing could have contributed to the diagnosis, our patient did not undergo neuromuscular studies due to logistical challenges as well as an already high suspicion for demyelinating disease. Finally, the classic MRI finding of GBS is marked enhancement of spinal nerve roots on a contrast-enhanced study, especially seen in the conus medullaris and cauda equina. Our patient did not exhibit these characteristic findings on MRI, however, normal imaging cannot rule out GBS, particularly in COVID-related cases.

Given this patient’s prolonged and complex hospitalization, other diagnoses were considered for his profound weakness, including critical illness myopathy or corticosteroid-induced myopathy. With the initial decrease in mental status and non-contrast MRI findings suggestive of leukoencephalopathy, the differential also included COVID-19-associated encephalopathy or atypical presentation of posterior reversible encephalopathy syndrome. These latter conditions became less likely as the patient’s mental status improved with worsening motor strength and reflexes. The additional workup continued while enhancing his nutritional support and providing rehabilitative therapies. Although the development of his presentation was multifactorial, there were enough findings to support an autoimmune component, further substantiated by his improvement in strength directly following immunotherapy.

Treatment goals for GBS emphasize early initiation of IVIG or plasmapheresis to prevent permanent nerve damage and decrease overall severity of the disease. Traditionally, these therapies have been considered equally efficacious. However, more recent studies suggested that IVIG may have better outcomes, most notably in mechanically ventilated adult patients. This patient received IVIG due to concerns that his fragile hemodynamic state would not tolerate the rapid fluid shifts associated with plasmapheresis.

Respiratory failure is a widely recognized complication of GBS, occurring in 20-30% of cases. COVID patients are already at increased risk of respiratory compromise, thus GBS is an important etiology to consider in the differentials for weakness to avoid delays in treatment and prevent the need for further ventilatory support. Lumbar puncture for CSF studies is the first step in diagnosis, and this basic test can be done early in the work-up to facilitate prompt diagnosis and treatment, especially for patients with severe manifestations of GBS.

Additionally, patients without an otherwise identifiable cause for GBS should be screened for COVID, as the autoimmune reaction can occur even in the absence of infectious symptoms. The prevalence of COVID-associated GBS has declined since the introduction of COVID vaccines, however, cases are still being reported. Furthermore, investigations are underway to determine the risk of GBS resulting from the COVID vaccine itself. Preliminary data indicated a potential increased risk of GBS following the Janssen vaccination but no difference in risk for the mRNA vaccines.

The case described above occurred in the very early months of the COVID pandemic, prior to vaccinations or much knowledge of neurologic sequelae related to this virus. Now that GBS is a better-known complication of COVID, future patients who present in a similar manner can be evaluated more deliberately with this disease on the differential.

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Keywords: Guillain-Barré Syndrome, COVID-19, demyelinating disease.

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INTRODUCTION
For many people who study or work in physical and organizational spaces in and around healthcare, the events of recent years have placed incredible additional stressors in an already taxing environment. Political upheaval, COVID-19, demonstrations for racial justice, and economic turmoil have exacerbated the tensions many learners, physicians, allied health providers, researchers, and leaders have felt for some time. The capacity to handle complex personal and workplace issues has become diminished.1-3 While every situation is unique and should be addressed with a thoughtful, individualized response, clarity about where to begin to address complex issues often is lacking. Recognizing that there are no succinct, evidence-based resources for individuals and leaders to reference, we set out to bring together expert authors from all facets of our academic community to develop this resource.

In this series of three manuscripts, real-life scenarios encountered by clinicians, learners, and researchers in healthcare are explored, which challenge traditional assumptions and understanding of how to navigate issues as diverse as mental health, racial diversity, gender discrimination, impostor syndrome, and substance use disorder. Although the issues need not be organized by specialty, as they clearly cross disciplines, for ease of organization, the scenarios were arranged based on the career type or learning stage of the protagonist in the scenario.

Stories are powerful vehicles for learning and connecting. Stories help us understand, connect with others, and remember things. In stories, relatable characters and situations are found. Stories inspire and often teach valuable lessons that are easier to relate to and are more memorable than abstract concepts. Stories are how we understand the world. Readers can find themselves either as the character or the supporting crew and find practical ways to cope or support through the complex and difficult real-life scenarios that are likely to be encountered in their careers.

Part 1: Core Medical Disciplines (Cases 1-6)
In the first of three manuscripts, cases are explored with the central character based in a core medical specialty: Internal Medicine, Pediatrics, Psychiatry, Obstetrics/Gynecology, Emergency Medicine, and Family Medicine. However, the issues to be examined are not unique to the specialty of the physician. Here, the delicate issues of physician aging, child abuse reporting, leadership insecurity, the loss of a patient, physician substance use disorder, and an overwhelming work burden are considered. The authors of each scenario provided thoughtful, evidence-based responses to the real-world situations and reveal the underlying fear, anxiety, and stress emotions that drive the character into their current predicament.

Case 1 (Author: Tracy Gunter, M.D.)

Internal Medicine: A 67-year-old male who has been in the same practice for decades, has a loyal panel of patients, and a long history of great patient rapport. However, in compliance and outcomes, he recently has been noted by his younger colleagues to be a little “off”. He has repeatedly told the same stories to his staff at lunch time and his nurse has noticed on two occasions that he has written prescriptions for the wrong medications for a patient.

Contextual Features: His wife, who often comes to the office to see him, has made a few comments to the staff, with whom she has long-standing friendships, that she is a little worried about his memory.

Solutions/Suggestions for Handling the Current Crisis: This scenario outlines two near-miss errors in an aging physician who is well-established in an outpatient private practice, against a background of non-specific compliance and outcome concerns and off-putting interpersonal behavior with staff members (telling the same stories repeatedly). There were no patient complaints and no errors that led to patient harm in the scenario. There was supplemental, informal information from the physician’s wife to staff to suggest that there may be additional concerns outside the office setting.

In this scenario, the physician’s behavior was more persistent than a single incident and the scenario included information of concern from the physician’s wife. An intervention might best begin with a private conversation initiated by a peer of this physician at a neutral location. The conversation would be about the compliance and outcome concerns and incorrect prescriptions. The tone could reflect concern as opposed to judgment. At this point, the goal of the intervention is to raise the physician’s awareness of the concerns of his peers and office staff members and give him the opportunity to reflect on how the events might have happened, solicit feedback, and engage in self-reflection and self-correction.

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While most physicians welcome feedback and the opportunity to improve, it is not uncommon for some physicians to respond negatively. Negative responses may include denial, irritability, and changing the subject or blaming others. Regardless of the reaction, the total interaction should be brief and end with an expression of gratitude to the physician for making the time for the conversation. This informal peer discussion may be documented with follow-up correspondence, depending upon applicable policies and procedures, contextual factors, and whether following up with the physician of concern is anticipated by the person performing the intervention.

If the emerging pattern escalates or remains unaddressed by the physician, then a more concerted intervention by an authority figure would be indicated with formal documentation to the physician following the authority intervention. When physicians practice in healthcare systems or hospitals, the authority figure may be a medical director, chief medical officer, or risk management officer. In the free-standing private practice, the authority figure may be more difficult to identify. Absent a designated supervisor or clinic director designated to address the concerns, the physician peers may encourage the physician to consider an evaluation related to the observed performance concerns or, depending on local policies and practices, a self-referral to a physician wellness program. While a pattern has not emerged yet, and it is important to give the physician the opportunity to identify factors leading to the current concerns and remediate them, it is also important to keep in mind that increasing age has been associated with poorer knowledge base, poorer clinical outcomes, poorer prescribing practices, and lack of benefit from remediation, particularly when health issues are present.

Case 2 (Authors: Kyra Reed, M.D., Heather Kelker, M.D., Julie Welch, M.D.)

Pediatrics: A 29-year-old female who just finished residency and has joined a thriving practice is seeing a six-year-old child with bruises and marks and is concerned about child abuse. The parent of the child is a longtime family friend of this physician. She is upset about having to make a report about suspected child abuse and seems visibly shaken by the whole incident.

Contextual Features: As a teenager, the physician was a volunteer at a shelter for abused women and children. Though she thought that experience would help her navigate situations such as these, she feels ill-prepared to have to handle this particular case.

Solutions/Suggestions for Handling the Current Crisis: The provider was experiencing stress related to an encounter of suspected child abuse and the perceived conflict of interest in reporting the case in the face of a close personal relationship with the family. Her prior experience caring for abused women and children placed her at risk of secondary traumatic stress (STS), the symptoms of which mimic post-traumatic stress disorder even though the traumatic events are experienced indirectly. STS is prevalent in providers who care for victims of child abuse and neglect and can lead to burnout and attrition. STS risk factors include prior personal trauma, repeated exposure to emotionally disturbing cases, increased empathy, and insufficient training. STS may be diminished by having high compassion satisfaction (CS) and professional fulfillment from helping others.

The combination of high STS and low CS may contribute to a psychological barrier to reporting cases of child abuse. The provider in this case had an additional barrier to reporting, which was her close personal relationship with the parent. Front line providers are required by the court to report suspected abuses and being colleagues or friends with the family involved in a case of suspected child abuse can contribute to additional psychological dissonance.

In the moment, it is important to support the provider by acknowledging the challenging situation and by providing encouragement that reporting is in the child’s best interest and required by law. This can be accomplished by informal peer support from a colleague, especially one who has encountered a similar experience. Trauma-informed pediatric care with protocols in place that include consultation with specially trained child abuse pediatricians and social workers can mitigate the stress of these encounters. Additionally, allowing time for recovery and debriefing after a stressful incident may counteract STS. Other potential methods to address STS can include individual counseling, peer support groups, and improved communication with child protection services and social work that would provide feedback on the course of the patient’s care. Standardizing an approach for reporting suspected abuse results in depersonalizing the scenario for the provider and the caregiver, helping to alleviate guilt and decision making. Using scripted language can help providers feel more prepared in talking with families. For example, stating that “in every situation where we see certain bruises, it is our clinic/hospital policy to have social work involved and look for other injuries”. Practicing the scripting of these difficult conversations can help providers feel more prepared when an especially stressful encounter occurs, such as in the case above.

Case 3 (Authors: Kristine Olson, M.D., Elizabeth Harry, M.D.)

Psychiatry: A 35-year-old female psychiatrist recently was hired from an outside institution as a medical director of the consultation liaison service providing care for both emergency department and floor consults. She joined an existing team of seven colleagues including rotating social workers, psychologists, and psychiatrists. Unfortunately, she felt that she was struggling to be accepted as a leader. One of her female colleagues often will ask a male psychiatrist for his opinion or recommendations, even when off service, despite having discussed the case and received the recommendations from her. In meetings, this same colleague made inappropriate comments and generalizations about this physician’s cultural background. When these interactions or behaviors were witnessed by others, colleagues did not comment on them or support the medical director, taking what seemed to be a collective approach of “minding your own business”.

Contextual Features: The physician had a one-year history of leadership experience and had graduated from various prestigious international institutions with the highest accolades from medical school, residency, and fellowship training, and had a master’s in business administration.

Solutions/Suggestions for Handling the Current Crisis: This 35-year-old physician leader felt she was struggling to be accepted as a leader, having her recommendations second guessed, and was subject to inappropriate comments and generalizations which were witnessed.
by her team but went unacknowledged.

Her first reaction might be to think she is disrespected and ineffective as the vignette mentions her concern, she is “struggling to be accepted’. This mindset may lead to feelings of self-doubt, discrimination, isolation, irritability, frustration, and defeat. This is important because it may lead her to be terse or punitive, shy away and withdraw, and unable to manage these thoughts and feelings. While totally normal, these reactions may be self-defeating. She may feel she needs to conceal her authentic self and conform to conventional expectations, whether gender, ethnic, or racial expectations. These “norms” perpetuate discriminatory power structures and a hidden pecking order of who and what is acceptable, reinforces bias, and undermines the ideals of diversity, equity, and inclusion. The inclusion of diverse people and ideas is known to improve organizational performance and better patient care.10

The physician’s reaction and her response could be an opportunity to pause, notice her thoughts and subsequent feelings, and give herself the opportunity to reframe how she chooses to show up as the leader she desires to be. When she senses self-doubt and disrespect, she might notice all the evidence that she is well prepared and well trained for this role. She can choose to lead as a confident, authentic leader who demonstrates compassion for herself and others as they all learn.

To garner support, guidance, and combat isolation and loneliness, this physician leader might consider seeking executive sponsors to help her to remove obstacles and support her decisions, experienced mentors who can help her to grow as a leader, role-models who have overcome similar obstacles, and allies who have chosen her for the job. Similarly, she might recognize the value of maintaining her close relationships with family and friends and her identity outside of work. These actions are designed to help her thrive and succeed in a sub-optimal climate, recognizing she first must support herself to lead others in a way that helps them grow as a high functioning and healthy team.

The dysfunction on her team presented an opportunity to build a team that allows each member to be vulnerable, grow, and develop the safety to learn from one another. The new medical director had an opportunity to raise awareness about unconscious bias and the danger of perpetuating stereotypes and discriminatory norms. There are resources for raising consciousness about one’s own implicit bias and for teaching individuals and teams how to recognize microaggressions, discrimination, and disrespect and be effective “bystanders”, “upstanders”, and “allies” in skillfully calling out and combating unconscious bias that can take some of the educational burden off of the medical director.11-13 In the process of this growth, the medical director will need to rely heavily on the support network she has built to cope and manage the bumpy learning curve.

**Case 4 (Author: Samantha Meltzer-Brody, M.D.)**

**Obstetrics/Gynecology:** A 57-year-old female had been involved in the care of a high-risk pregnancy involving a multifetal gestation. The mother had extraordinary and unexpected complications in the post-partum period and died. The physician had a lot of experience caring for high-risk patients and experienced the loss of a patients in the past, but this case affected her deeply. She worried that her rapid decision making in the most critical aspects of this patient’s care could have been to blame for the poor outcome, despite assurances by colleagues to the contrary. She canceled clinic days and asked her partners to cover her operative days.

**Contextual Features:** The physician recently found out that her own daughter was pregnant with twins, which heightened her identification with this patient.

**Solutions/Suggestions for Handling the Current Crisis:** The death of a patient, particularly when unexpected, is one of the most catastrophic experiences that a physician can experience. An unexpected maternal death during childbirth is a traumatic event and associated with psychiatric experiences that a physician can experience. An unexpected maternal death during childbirth is a traumatic event and associated with psychiatric experiences that a physician can experience. An unexpected maternal death during childbirth is a traumatic event and associated with psychiatric experiences that a physician can experience. An unexpected maternal death during childbirth is a traumatic event and associated with psychiatric experiences that a physician can experience. An unexpected maternal death during childbirth is a traumatic event and associated with psychiatric experiences that a physician can experience.14,15 This consequence has been under-studied, and the literature was sparse regarding the experience of the second victim phenomenon, which can have significant physical, psychological, and psychosocial consequences negatively impacting the health care provider’s personal and professional life.16

The physician’s personal life experience can play an important role in how the event is processed and how “close to home” it can feel. Examination of psychological transference/countertransference is an important part of understanding the intensity of emotions that a physician experiences and that may drive treatment decisions.17 There is a great need to support health care providers who are second victims due to adverse patient outcomes. In maternity care settings, there often is an unspoken expectation that maternal mortality should be a “never event”, thus, there is significant shame experienced by health care providers when maternal death occurs. Further, the process of investigating adverse patient events can lead to isolation due to concerns of medicolegal consequences.

The practice of medicine often has a narrow focus on medico-legal and patient safety perspectives that needs to be augmented with moral and philosophical perspectives that promote non-judgmental recognition and acknowledgement of shame and guilt in health care providers regarding the inherently fallible nature of the practice of medicine.18 There is an imperative to ensure that health care providers who are second victims receive confidential care that is protected and de-stigmatized. Full disclosure of the adverse events to the patient and family, coupled with a heartfelt apology has been shown to help in the healing of healthcare providers who suffer as second victims and reduce medicolegal concerns.19 Physician and clinician mental health programs are vital in addressing the complex issues associated with the second victim phenomenon and help to ensure best short and long-term outcomes. Peer support programs have been developed and shown to be the preferred first line intervention for adverse patient deaths, including in the Obstetrics/Gynecology setting.20 However, there is also a need for referral to formal mental health treatment if symptoms persist to prevent long-term suffering from post-traumatic stress disorder. Formal mental health interventions should help to address symptoms of acute stress reaction, post-traumatic stress disorder, and depression.
Case 5 (Author: Mariah Quinn, M.D.)

Emergency Medicine: A 37-year-old male Emergency Medicine physician working in a large, busy emergency department frequently went to a bar on the way home to “relax and unwind”. He recently was cited for Driving Under the Influence and must disclose this to his hospital employer. He was afraid for his job and the potential impact on his career. Throughout his teens and early twenties, he struggled with depression and anxiety but did well with counseling and treatment with a selective serotonin reuptake inhibitor (SSRI) medication. However, since entering medical school, he avoided professional help and has been off the SSRI medication due to concerns about disclosure on medical license and hospital credentialing applications.

Contextual Features: He and his wife of ten years are going through a divorce and navigating a nasty shared custody battle of their two young children.

Solutions/Suggestions for Handling the Current Crisis: Physicians abuse substances at a rate similar to the general population, with alcohol being the most commonly abused substance. Substance Use Disorders (SUDs) frequently co-occur with other mental health concerns, particularly mood disorders, and occupational burnout. While physicians abuse substances for the same reasons as the general population, occupational stress, access to substances and the culture of medicine or “physician personality” may contribute. Many physicians with SUDs practice without occupational impairment for an extended period of time. Therefore, SUD is often referred to as a “potentially-impairing condition”.

As highlighted in this case, licensing and credentialing bodies influence the likelihood that a physician will seek care for mental health and SUDs. Many physicians avoid help-seeking, citing concerns about licensure or credentialing. Avoiding care increases suicide risk, which is higher when mental illness is not treated; among physicians who have died by suicide, the rate of receiving mental health care was lower than among non-physicians who died by suicide. Additionally, physicians self-medicate for mental health symptoms more than the general population.

Worry about required disclosure on licensing forms impact physician help-seeking significantly. In a study of women physicians, 46% did not know whether their license application queried current mental health diagnoses or treatment. In the same study, the vast majority (94%) reported not disclosing diagnoses because they felt their condition did not affect care or pose a safety risk for patients, while approximately a quarter to half of women worried about licensure, follow-up paperwork, referral to a Physician Health Program, or privacy. Nearly half of the women in the study reported not seeking treatment to avoid having to report to their care to medical boards. This result also was found in a large study of U.S. surgeons in which 60% of respondents reported not seeking care due to concerns about licensure. This is an important area of advocacy, given that asking questions extending beyond current impairment impedes physicians from seeking help for potentially impairing conditions. Seeking care before impairment develops, can minimize risks for physicians and their patients.

Based upon the experience of Physician Health Programs, physicians who undergo monitoring and treatment for SUD have a high rate of sustained remission and resumption of practice. The physician in this case required support for his personal and occupational stressors, to manage comorbid anxiety and/or depression, if present, as well as careful assessment and treatment of SUD. Treatment planning must take into account both occupational impairment and severity of SUD. If there is evidence of occupational impairment, the physician should withdraw from clinical practice until they are able to resume safe practice.

If the physician did not show evidence of occupational impairment, and if he did not meet criteria for moderate to severe SUD, outpatient treatment for SUD, peer support, and psychotherapy may be most appropriate. Co-occurring mental illness increases the chances of relapse. If he shows signs of moderate to severe SUD, he may need supervised withdrawal and residential treatment before consideration of return to practice. If a pause is needed in practice, resumption should be assessed on an individualized basis, considering a physician’s ability to care safely and effectively for patients. There should be time for treatment and monitoring during the workday, and a staged return to work might be considered.

Case 6 (Authors: Jennifer Ferrand, Psy.D., Sharon Kiely, M.D.)

Family Medicine: A 32-year-old male recently joined a family medicine practice with two other partners in a small town. The senior partner, shortly after his arrival, announced he would be retiring, and his only other partner decided to take an extended maternity leave and would not return for six months. This new physician felt overwhelmed but responsible to care for all of the patients in the practice, despite the physical and emotional toll it is taking on him.

Contextual Features: This physician and his wife were caring for her ailing grandmother and recently learned they were expecting their first baby.

Solutions/Suggestions for Handling the Current Crisis: Work-life balance is a cyclic, and evolving, relationship between work and other pursuits that is unique at the person level. Many physicians value work-life balance and well-being but may lack the skills and experience to negotiate these challenges in their professional lives. Nevertheless, addressing work-life balance issues early and often is important, as the solutions and lessons learned will set the tone for the remainder of one’s career.

Here, an early career physician felt overwhelmed in the face of changed circumstances including a new job and increased personal responsibilities. One cause of this feeling was likely his belief that he was responsible to take on more professional responsibility than was reasonable for one person. Should he act on this feeling by overworking, despite the physical and emotional toll he was experiencing, he risked much in the process. The risks included errors, decreased quality of care, burnout, physical and mental health problems, family strife, and departure from the practice. The error in his thinking was that he alone was responsible for all the patients in the practice, and he might not possess the confidence yet to assert himself to his senior colleagues.
and set appropriate boundaries around his time. In this case, there were both short and longer-term solutions that required the investment of resources, time, and attention at both the individual and practice levels.

First, the overwhelmed physician must have a conversation with his two partners, establishing boundaries around his time and clarifying expectations for workload and panel size. To retain this physician and meet their own changing professional needs, the partners are likely to collaborate with him to arrive at a mutually agreeable solution. This could include options such as closing the practice to new patients during the partner’s maternity leave, evaluating which patients could be postponed, hiring a recruiting firm to identify another partner for the practice, or having the senior partner delay his retirement for six more months.

The three partners could agree on other changes to streamline day-to-day operations and improve the overall efficiency of the practice. Research models showed that when portions of preventive and chronic care services were delegated to non-physician team members, practices effectively can provide comprehensive primary care services with achievable panel sizes.36

Hiring nursing staff to manage more of the medication refills, blood pressure checks, and inbox communication frees up the physician’s time. Ensuring the practice manager is skilled and accountable for improving efficiency, optimizing technology solutions, and fielding patient concerns can help to keep the team running smoothly. Innovative solutions including collaborating with community partners, investing in an onsite behavioral health consultant, providing a teaching opportunity for residents, developing a telemedicine option for after-hours care, and nurturing a team-based approach could help to distribute responsibility further, reduce the likelihood of physician burnout and improve the satisfaction of all in the practice.

The physician should seek personal support in addition to collaborating with his partners to invest in practice-level changes. As a Family Medicine physician, he is equipped to analyze problems and seek consultation when needed, although like many early career physicians he may fail to recognize those needs at a personal level, underestimate their importance, or not know how to ask for help. Recognizing his distress and seeking help can allow him to access a supportive response, validate and normalize his experience, and help him to recognize that he is not alone in his struggles.

External resources for advice and ideas include his former Program Director, informal and formal mentors and peers now in practice, as well as the Senior Partner and the colleague on maternity leave. Mentorship and coaching could help the physician to identify those aspects of his job that he found most meaningful and identify resources to aid him in accomplishing the less-meaningful tasks. Shanafelt recommended that physicians spend at least 20% of their time on meaningful work, but most early career physicians would benefit from support and encouragement to identify what is meaningful, clarify their values, and contribute to the creation of a desired work environment. This doctor chose Family Medicine for specific reasons, and coaching could help him to focus on strengths, reset expectations, and reframe risks and opportunities. The one-to-one, supportive relationship with a physician coach or mentor can help him identify personal strategies to improve work-life balance (i.e., time management, prioritization), identify opportunities to address professional isolation, and ensure that both his personal and professional decisions are aligned with his values.

Focusing on skill-building through mentorship and peer support is important but building a practice culture where self-care is valued, and collaboration is modeled by leadership is a more permanent solution for the physician to craft his future. The physician’s engagement in building this practice culture is key. Willard-Grace and colleagues found that 30% of primary care physicians were no longer working in the same practice after two to three years, and that both burnout and low engagement were predictors for clinician turnover. Shanafelt noted that engagement characterized by vigor, dedication and absorption in work, was the “positive antithesis of burnout”.27 Attaining a realistic work-life balance and this physician’s engagement in the practice is a shared responsibility between himself, the practice and the community.

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REFERENCES


Keywords: work-life balance, psychological well-being, patient safety, academic medicine.

Wellness in Academic Medicine.
Navigating Minority and Gender Discrimination, Substance Use Disorder, Financial Distress, and Workplace Politics: Lessons for Work-Life Wellness in Academic Medicine: Part 2 of 3

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Lessons for Work-Life Wellness in Academic Medicine: Part 2 of 3

In this second installment of the three-part series of manuscripts addressing a range of complex work and personal issues, the authors explored case scenarios with clinicians who work in the fields of general surgery, orthopedic surgery, anesthesiology, neurology, radiology, and otolaryngology. The medical specialty identifiers informed baseline evaluations, which were typically stellar, also reflected her recent lack of enthusiasm and engagement.

Contextual Features: The surgeon was known to be a compassionate surgeon with an impeccable service record who recently had been named in a lawsuit after a patient succumbed to multi-system organ failure following an emergent bowel resection.

Solutions/Suggestions for Handling the Current Crisis: The surgeon was experiencing a range of emotions in response to the lawsuit including shame, guilt, self-doubt, fear, and uncertainty. She did not feel safe opening up to colleagues about her situation (and, in fact, she ay not be clear on what she can share legally with her colleagues). Ideally, someone this surgeon trusts would assess her openness to seeking help and receiving support. For example, an opening could be “I see something’s going on, and I know this isn’t normal for you. I really care about you. Would you like to share what’s on your mind? I don’t have to be the person you open up to, but I can connect you with resources to help.”

If the trusted colleague knows that the lawsuit is part of the problem, there are many support options for this surgeon. Shame can be a barrier to seeking help. Normalize her experience by letting the surgeon know that this is a common experience for over 60% of surgeons; and that she is not alone. Using language such as “I have been through something similar. There are some great resources to help navigate this extremely stressful time” can open the door for the surgeon. Her institution’s wellness program or risk management department may be able to facilitate finding another surgeon to talk to (not necessarily about the details of the case, but about managing the inevitable toll that it takes on the physician). Connecting the surgeon with a mental health professional who can assist her in coping with and processing the emotional impact of the case can be very beneficial. Online resources such as articles, videos, message boards, and podcasts also can be helpful ways of getting support and information in a confidential fashion.

Much of the stress of a lawsuit stems from fear of the unknown. The first thing that malpractice attorneys often advise anyone served with a lawsuit is “Don’t talk to anyone about it.” That may prevent the surgeon from seeking the support she needs. The surgeon should be encouraged to talk to her legal team about exactly what to expect (and the timeframe) of the lawsuit, as well as to clarify exactly what it is permissible to discuss and with whom. Many attorneys recognize that it is acceptable and encouraged to discuss the emotional ramifications (but not the case details) with trusted sources. The surgeon’s legal/risk management team can reassure her that they have extensive experience with this scenario and communicate a “We’ve got this!” attitude. Fear of losing a career (and an identity) also can come with a lawsuit. The surgeon should be encouraged to discuss with human resources personnel and/or her legal team how facing a lawsuit might impact licensure and employment. She may be encouraged to hear that most physicians continue to have a successful career after facing or even losing a lawsuit. Preparation returns agency and control to the physician and empowers them to work through not only the legal aspects of the case, but also the emotional response?

Negativity bias will tend to make the surgeon focus on the lawsuit on her charts. The surgeon had been approached by several colleagues who stated that she seemed “not herself” lately. Student and resident evaluations, which were typically stellar, also reflected her recent lack of enthusiasm and engagement.

Case 7 (Authors: Heather Farley, M.D., Julia MacRae, M.D.)

Surgery: A 48-year-old female general surgeon was exhibiting several signs of burnout including irritability, fatigue, and interpersonal conflicts with her colleagues. She was demonstrating atypical behaviors (for her) such as arriving to work late and becoming delinquent

Part 2: Medical/Surgical Specialties (Cases 7-12)

In this second installment of the three-part series of manuscripts...
as a reflection on her competency, while disregarding her many years of successfully treating patients and teaching students. A healthy strategy involves avoiding isolation and seeking the support and counsel of colleagues and experts who can affirm the physicians’ worth and value to her medical community. Coaching and simulation exercises may help boost her clinical confidence.

Finally, the surgeon’s colleagues could recognize that it may be difficult to juggle a full clinical and teaching schedule along with the added work and stress of the lawsuit. Discussing with leadership or human resources personnel ways to shift responsibilities temporarily can lessen the feelings of being overwhelmed.

**Case 8 (Author: David Rogers, M.D.)**

Orthopedics: A 50-year-old male orthopedic surgeon was an experienced and well-respected joint replacement specialist who was unable to perform surgery for several months during the COVID-19 pandemic and was eager to get back to work. He requested weekend and evening operating room (OR) time to address his backlog of cases. He was becoming increasingly irritable at work and even was written up for disruptive behavior in the OR. He stated his duty was to his patients who needed their operations completed and he would not quit until he had provided the best and most timely care to all of them. The OR staff was struggling to provide extra OR time to him given obligations to his colleagues, and was exhausted by excessive overtime for OR nurses, and they voiced their concerns to hospital administration.

**Contextual Features:** The surgeon had four children, two who graduated from college, but one was in college now and one was a junior in high school. He lost a great deal of revenue during the pandemic and was concerned about paying for college tuition for his children.

**Solutions/Suggestions for Handling the Current Crisis:** One conceptual model of well-being represented this state as being one of balance between challenges and resources. This surgeon’s situation was a result of an increase in financial demands related to his goal of providing a college education for his children and a lack of staff support for him to do the clinical work that would alleviate his financial shortfall. Resolving the situation will require a combination of approaches, deployed in the short and long term, that would restore balance between challenges and resources.

A first step in addressing the situation might include meeting with the operating room administrative leadership to explore options that would increase the availability of staff. While the financial benefit to the surgeon is obvious, it is also likely important to system leadership given the importance of procedurally derived revenue for academic medical center programs. During this meeting, the surgeon could be put on notice that his disruptive behavior must stop given its negative consequences to the staff and his own career. Ultimately, having staff resign due to his behavior only compounds his problem. However, this notice should be combined with an acknowledgement that there are systems contributions to these behaviors that will be addressed as the modifies his behavior.

This would be a good time to introduce coaching, counseling, or peer mentorship and other stress management approaches. Ultimately, the surgeon’s individual well-being was his greatest asset in meeting his families’ financial needs and may be a powerful motivation for a surgeon to seek wellness help.

The need for clinical revenue has caused some centers to develop highly production-oriented compensation programs for proceduralist physicians. To maximize this source of revenue, proceduralists are incentivized to be clinically busy and are substantially penalized when they are not, even if through no fault of their own.

**Systems leaders need to strike the right balance where clinically generated revenues are used to maximize efficiency in addition to subsidizing research and education. Finally, the chronic under-resourcing of operating rooms in academic centers combined with highly individualized compensation programs can create a competitive culture that pits surgeons against each other vying for the limited access to the operating room. The loss of collegiality that results from this combination places surgeons at risk of burnout.**

Another long-term solution is for the surgeon to consider his priorities and approach to helping his children. Surgeons are well compensated and so it likely would be surprising to anyone that a surgeon is experiencing stress that is due to financial concerns. Starting a career in adult mid-life means that surgeons sacrifice many years where savings can accrue through compounding interest. This surgeon would be well-advised to gain a fundamental understanding of personal finance that addresses the unique opportunities and challenges for surgeons.

**Case 9 (Author: Elizabeth Lawrence, M.D.)**

Anesthesia: A 38-year-old male anesthesiologist (Dr. P) who worked primarily in an out-patient surgery center, enjoyed a successful career with significant control over his job and personal life. The chief of anesthesiology received a cryptic text message: “Fentanyl missing, Dr. P. missing.” Recovery room nurses had noted that Dr. P’s patients seemed to be waking in excessive pain, although much more fentanyl was ordered for his cases compared with others.

**Contextual Features:** The anesthesiologist recently moved out of his family home and had defaulted on his mortgage and car loans. He stopped responding to messages from his partners and his wife had declined his requests to see his children because she did not want them to “see their father like that”.

**Solutions/Suggestions for Handling the Current Crisis:** The description of Dr. P indicated that he was impaired. Impairment is a functional classification that depends on whether a physician can safely and effectively care for his patients. Illness, in contrast, is simply the presence of a disease. A physician can be acutely ill, being recovering from an acute illness, or have a chronic illness without being impaired.

Several major professional societies have published guidelines and considerations on caring for the impaired physician, recognizing...
that, in addition to the duty to care for the physician-patient, there is a duty to prevent harm to patients.\textsuperscript{16-18} These guidelines highlight the distinction between impairment and illness to ensure that care of a physician-patient focuses on therapeutic responses rather than disciplinary interventions.

The prevalence of substance use disorders (SUD) in U.S. physicians is 10 to 15% and is comparable to that of nonphysicians.\textsuperscript{19} Physicians traditionally have been thought to misuse alcohol and prescription medications such as opiates and benzodiazepines more commonly than non-physicians, but more recent data suggested that alcohol is the most commonly abused substance.\textsuperscript{20}

Almost all states have physician health programs (PHPs) to respond to physician mental and physical illness, including SUD. These PHPs serve the dual purpose of protecting the public from harm while offering confidential support to impaired physicians. The aim of these programs is to enable the physician to resume the safe practice of medicine. PHPs help to coordinate diagnosis and evaluation, the creation of a personalized treatment plan, treatment, drug and alcohol testing, connection to groups of other physicians in recovery, and ongoing monitoring and support.\textsuperscript{21}

PHPs serve as an alternative to disciplinary action for physicians and other health professionals.\textsuperscript{22} PHPs have a “safe harbor” provision and generally do not require reporting of the names of enrolled physicians to the medical board. The safe harbor provision stipulates that so long as the physician follows a signed PHP contract for treatment and monitoring, licensing sanctions will be deferred. A recent narrative review\textsuperscript{23} and a recent meta analysis\textsuperscript{24} concluded that as many as 75% of physicians enrolled in PHPs achieve and sustain remission, a success rate much higher than that in the general population.

The American Medical Association Code of Medical Ethics makes clear that colleagues of an impaired physician have an ethical obligation to intervene to help the physician and to protect the physician’s patients.\textsuperscript{17} The American College of Physicians position paper on the impaired physician provides a stepwise plan on how colleagues can and should intervene.\textsuperscript{26} When a physician is ill but not impaired, and when there is no risk of a patient being harmed, colleagues can encourage the physician to contact the local PHP and to explore other resources for evaluation and support. When there is the possibility of imminent harm to a patient or harm is known to have occurred, colleagues need to report the physician to clinical supervisors and medical licensing boards. Finally, if a colleague is undecided about whether a physician is impaired, consulting a clinical supervisor or perhaps someone from the local PHP is suggested.\textsuperscript{16,21}

Dr. P’s substance use disorder already reached the stage of impairment as his patients were waking up in pain and he was not meeting his professional responsibility to respond to messages. The Chief of Anesthesiology should speak with Dr. P, share her concern, and require Dr. P to contact their local PHP. Had Dr. P’s illness been identified while he still was caring for patients safely, the Chief would have discharged her duty by taking those steps. Given that harm already was occurring, however, the Chief must inform her supervisors and the medical licensing board of Dr. P’s situation. The most positive outcome would be for Dr. P to receive the care he needs through his PHP without sanctions as long as he commits to and follows his treatment contract with the PHP, and that over time he regains the ability to practice medicine safely and effectively.

Case 10 (Author: Chantal Brazeau, M.D.)

Neurology: A 37-year-old gender non-binary neurologist has a thriving practice in an academic setting caring for a wide variety of patients in their outpatient office. The teaching hospital where they have privileges recently had had a falling out with the other group of neurologists providing the majority of the call coverage for the busy stroke service. The hospital was looking to this physician’s group practice to provide this medical coverage but the Medical School chairman and clinical group were unwilling to scale back the physicians’ time at the outpatient practice to accommodate this request. This left the physician facing several days per month of long office days, nights answering pages, and occasionally having to come into the hospital, followed by another long office day. They loved their work and did not want to leave the practice, but felt unhappy with their work environment and know this was not a sustainable situation.

Contextual Features: The private neurology practice recently was acquired by the health system, requiring a re-work of contracts, the same process by which the other neurology group became displeased and ended negotiations with the health system.

Solutions/Suggestions for Handling the Current Crisis: In this situation, there were several competing issues: The hospital leadership and the departmental chair both wanted to maintain the same level of patient services in their respective clinical areas competing with how much realistically can be expected of fewer physicians and the impact on each physician; the academic physician balanced this increased clinical load, related sleep deprivation and duty to patients with teaching, scholarly and other academic responsibilities while maintaining their personal health.

The physician could begin to address this unsustainable situation by considering how to navigate the competing demands at the systems level and the personal level. What argument could the physician make to get the attention of the hospital leadership and department chair? What are the risks to the organization by continuing to expect the same level of clinical service with fewer physicians? Are there motivating factors or compelling arguments (the “burning platform”)?\textsuperscript{24} that would motivate the hospital to find physicians (e.g., locums) to cover the added on-call load, or the chair to allow a reduction in the outpatient practice?

One argument is quality of care. Burnout has been linked to increased medical errors, decreased quality of patient experience and other measures of quality.\textsuperscript{25} Sleep impairment has been linked to increased burnout and increase in clinically significant medical errors.\textsuperscript{26} Quality of care could be impacted in both the hospital service and the outpatient practice if the physician experience burnout or has insufficient sleep. In addition, various people (stakeholders) who are impacted by the work environment may be supportive of physician well-being. The physician could seek key stakeholders who could
relaying the message to hospital and department leadership that this is an unsustainable and risky situation. These stakeholders could include chairs of other departments, leaders in graduate medical education or of various health professions (e.g., nursing), or quality, patient experience and operations.

While approaching hospital and departmental leadership, the physician should consider that change is difficult; in this case, a change toward incorporating physician well-being in decisions about clinical operations. It would be helpful to speak to the hospital and department leadership at the same time and acknowledge their uneasiness, show data to support compelling arguments rather than express direct opposition, and note discrepancies between organizational values and real risk of negative impact of this situation. This can set the tone for constructive problem solving.

During this time of increased clinical demand, the physician was navigating a variety of teaching and scholarly responsibilities. Despite doing their best to uphold professional duties, there is a point when the physician may reach their emotional and physical limit. To prevent getting to that point, the physician may need to review and delegate and/or postpone less time sensitive work or home responsibilities. The goal is to free time for self-care, and basic needs including nutrition, sleep, exercise, and spending time with their loved ones. Self-care will be crucial, and ultimately, organizational systems changes will be essential in solving this situation.

**Case 11 (Author: David Rogers, M.D.)**

Radiology: A 49-year-old male radiologist worked in a large hospital and was the Program Director for a small radiology residency program. His love of clinical work was balanced by his love of teaching and publishing a series of highly cited papers in high impact journals. He and his husband, an internal medicine physician at the same hospital, have been married for 10 years and have adopted three young children. They are well respected physicians and teachers in their institution and are involved community members. Recently, a few office staff members have been overheard making insensitive comments about the couple, including offensive remarks about their involvement in the LGBTQ groups on campus. They are both deeply hurt but feel loyal to their workplace.

**Contextual Features:** The couple’s school-age son was the target of inflammatory remarks by a classmate’s father, a local dentist, at a recent school event.

**Solutions/Suggestions for Handling the Current Crisis:** This is a complex social situation that involves multiple parties. At the individual level, this physician educator was being subjected to negative comments by members of the work group related to the physician’s identity. The physician’s son has been subjected to offensive remarks by another health care professional in a social setting which surely would be a source of distress. To address this complex situation will involve efforts that are both proactive and protective and occur at multiple levels.

A proactive approach for the workplace would include involvement in national organizations that are promoting diversity in the workplace. In this case, the challenge of diversifying radiology has included a review of discrimination faced by LGBTQ radiologists with some suggestions for overcoming barriers to change.27,28 This information is important, and it also may be helpful to join national groups focused on issues of diversity and inclusion for both practical wisdom and the social support from people facing similar challenges.

The effort to effect changes at the local organizational level could begin by helping the leader understand the importance of diversity and inclusion. It is well established that diversity of perspective amongst the physician workforce is fundamental to excellence in the academic medical mission and efforts to create a climate of safety for everyone will be critically important in recruiting talented individuals and allowing them to be engaged fully in their work.29 Effective change in the individual work group would best be accomplished in collaboration with human resources to achieve a balanced approach. The physician is entitled to work in an environment that is free from discrimination. However, there is a power hierarchy that must be minded so that a physician’s actions toward the staff are not seen to be retaliatory. A human resources specialist may be an ally in efforts to effect change in the work group through training that promotes inclusivity and provides information about behaviors that are illegal in the workplace. Individuals who persist in these activities should be advised that they would face sanction or termination if they persist in unacceptable behaviors which is part of the protective aspect of this overall approach.

As a physician-educator, this individual has an opportunity to affect the needed culture change in academic medicine and this is a significant opportunity given the lack of attention given to the LGBTQ physician experience or specific LGBTQ patient concerns in medical education.30 Such a curriculum can focus on the concept of intersectionality in better understanding and appreciating other individuals, to include those who identify as LGBTQ.31 It also would contain information about the corrosive effects of microaggressions faced by many groups including those that identify as LGBTQ.32 In addition to helping advance the culture, this kind of open discussion also may help LGBTQ medical students who are reporting discrimination at a time where they are extremely vulnerable in the learning continuum.33

While the physician educator would be helping others, it might be helpful for him if his son could see his efforts to help and also that healthcare providers who identify as LGBTQ deserve respect and support and have much to offer medicine and the communities that they serve. This physician parent needs to reach out to his son’s school leadership to offer support for positive change while putting him or her on notice that bullying by a parent at a school function cannot be tolerated.

**Case 12 (Authors: Eliza M Park, M.D., Anna Cassidy)**

Otorhinolaryngology: A 48-year-old female has a busy academic practice. She had National Institutes of Health (NIH) funding and was an admired teacher to the students and residents at her prestigious institution. She recently had been diagnosed with breast cancer. She will need to take time off for treatment and was worried about the progress of her research and her upcoming promotion to Professor. She felt as if her entire world was crashing down.

**Contextual Features:** Her husband of 22 years recently died after a recent school event.
a long battle with colon cancer. She remained the sole breadwinner for the family and had two children in college, one in high school, and another in grade school.

Solutions/Suggestions for Handling the Current Crisis: What does work-life balance look like when faced with life’s most important existential challenges? The physician in this case had cultivated the rare balance of clinical, research, and educational success. How does this individual hold on to her multi-faceted and rewarding life when it is challenged in every direction? She cannot be expected to continue at her prior pace, but how does one adapt to life when life happens? The culture of academic medicine offers few easy answers.

Nearly every physician will find themselves wondering whether it is possible to be invested in both their career and their family or home life. Time, energy, and attention are finite resources that everyone must use judiciously. Sometimes, personal and professional priorities conflict and there is inadequate institutional support for resolving them. This tension becomes particularly acute for junior and mid-career faculty when they have (and cherish) family caregiving roles. A career in academic medicine can be deeply meaningful and fulfilling work. It also can be stressful, time-consuming, and challenge psychological and physical health. The truth is that balance is difficult, and it is unique for every individual and family. Yet, the risk for physicians is to prioritize professional life at the expense of other life priorities. When individuals make choices misaligned with their core values, they risk personal unhappiness and burnout.

Academic institutions fare no better. Withholding support for dual personal and professional roles means further perpetuating existing gender disparities among men and women in academic promotion, limiting the diversity and breadth of the physician-scientist workforce, and more broadly, promoting the unrealistic pursuit of work at great personal cost. Women currently represent less than a quarter of all academic medicine offers few easy answers.

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Keywords: work-life balance, psychological well-being, patient safety, academic medical center


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Part 3: Non-Physician/Medical Education (Cases 13-18)

In this final manuscript of the three-part series, the authors address a range of professionalism issues of imposter syndrome, pregnancy and parental leave, second victim phenomenon, sexual harassment, response to a suicide, and managing a budget while advancing diversity, equity, and inclusion. The case scenarios have learners and non-clinicians as their main character, bringing attention to the challenges in effectively addressing the cross-cutting nature of the complex issues we see both in and around a career in medicine.

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Case 13 (Author: Gaurava Agarwal, M.D.)

Medical Student: A 24-year-old male always had excelled academically and athletically. He graduated valedictorian of his high school class, magna cum laude from college, and performed very well on the MCAT examination. He played NCAA Division 1 football and continued to play in local intramural leagues for graduate students. He performed well in school and had a long-term relationship with his girlfriend whom he was planning to propose marriage. Despite the appearance of being incredibly successful, he struggled with feeling discontent and had a significant fear of failure.

Contextual Features: His father was a CEO of a Fortune 500 company, and his mother was an award-winning children’s book author.

Solutions/Suggestions for Handling the Current Crisis: Imposter phenomenon (IP) refers to feelings of inadequacy and self-doubt due to an inability to internalize evident success and skill. Instead, individuals with high IP, tend to attribute success to external causes such as luck, needing to work harder than others, a mistake, fortuitous timing, or knowing the right individuals. They also have a feeling that they have tricked others into believing they are more capable than they really are.1-4 There has been ongoing interest in IP because of the correlations to personal and professional outcomes including limiting career potential, worsening well-being, lower self-esteem, anxiety, depression, and lower job satisfaction.5

IP is measured most frequently using the Clance Impostor Phenomenon Scale (CIPS) named after the researcher who first described the phenomena in detail.2,3,5 The prevalence of IP in medical students showed rates ranging from 22% to 60%. Transition periods are high risk times as there is a gap between what learners know and what they need to know, thus medical training may be a particularly fertile time for IP to flare.6 While initially thought to be more prevalent in women, a growing body of literature suggests IP is common in both men and women. There is thought to be a connection between IP and individuals with high achieving parents. This could be due to the sense that one’s success is due to their parents’ connections and privileges rather than one’s own merit, or that one is valued only by their parents for high achievement.4

The manifestations of IP can have some interesting paradoxes. People most often think that it represents a fear of failure, but it actually often entails a fear of both success and failure.4,5 People have the fear of failure due to the self-doubt they experience about their actual abilities. In addition, when self-worth is derived from achievement of a task that often is not completely in one’s control, anxiety can occur. However, people with IP also experienced fear of success because any additional successes likely will lead to additional pressure from the increased opportunities and expectations that will follow their success. People also reported procrastination due to fear of failure, workaholism due to the impostor feelings that compel them to work harder than others, and maladaptive perfectionism.

IP within medicine should be addressed both individually and systematically.7 The first step in improving anything is recognition and awareness. Measurement scales such as the CIPS can be used to self-assess if, and how significantly, IP may be impacting someone’s wellbeing. Individual strategies can include collecting feedback from trusted mentors and advisors about one’s actual abilities and strengths.
One also can collect evidence about past accomplishments and evaluate how the accomplishments were achieved. Addressing cognitive distortions that foster IP such as catastrophizing can be helpful. Therapy, counseling, and coaching can help deal with IP and some of its associated comorbidities such as perfectionism, procrastination, anxiety, and depression.3,5

Given the high prevalence in medical training, programs should introduce the concept of IP to trainees proactively. Workshops can facilitate reflection and provide a safe space where trainees can recognize they are not alone in experiencing IP. Mentorship and coaching programs can help people be on the lookout for behaviors such as procrastination, avoidance, perfectionism, and poor work-life integration that suggest IP may be present. Fostering a culture that does not punish mistakes and instead provides effective feedback can create a growth mindset culture. Also, increasing praise for effort and process rather than achievement and outcome can normalize failure appropriately. For example, having meetings where people are praised for applying for a grant and not just receiving one can lead to reinforcing the importance of taking risks and trying to challenge oneself.

Personal Health and Well-Being during Pregnancy

Case 14 (Authors: Kimberly Chernoby, M.D., J.D., M.A., Julie Welch, M.D.)

Resident: A 29-year-old female surgical resident was 32 weeks pregnant. So far, she had no pregnancy complications; however, at a recent routine appointment, she mentioned to her obstetrician that she was noticing an increase in contractions and having a hard time staying well hydrated during long operating room (OR) cases. She was concerned about the demands of her call schedule and how her male colleagues will view her competency and professionalism if she cannot manage her demanding obligations. She was unsure of graduate medical education (GME) policies that address pregnancy and maternity leave and was worried about graduating on time.

Contextual Features: She has performed satisfactorily, but not exceptionally throughout her residency. Prior to this pregnancy, she miscarried twice. She was worried about the perception of asking for accommodations but also about the health of herself and her baby.

Solutions/Suggestions for Handling the Current Crisis: Accommodating personal health and well-being is critically important during residency training. Program directors should be knowledgeable about work-life policies and laws, while clearly communicating expectations with resident trainees to cultivate an environment of wellness around their personal and professional needs. There are several laws and policies that set the floor for the GME program's response to this case study involving a pregnant resident. While some policies may constrain the program's options, such as how much time off can be given without delaying graduation, other policies merely set the minimum requirements and the program may, and should, exceed those requirements.

The Pregnancy Discrimination Act is a federal law that requires employers to make the same reasonable accommodations for temporary disability that stems from pregnancy as they would for a temporary disability that stems from a cause other than pregnancy. The Equal Employment Opportunity Commission suggested that some temporary accommodations may be required for pregnancy including permission to sit or take water breaks or lifting restrictions.6 In this case, the resident's GME program may consider accommodations such as providing the resident with a stool to sit during operative cases, allowing her to scrub out at regular intervals to take a water break, or changing her clinical rotation to one with shorter procedures or more time in outpatient clinic. Additionally, they may consider taking the resident off the overnight call schedule or 28-hour shifts during pregnancy given the evidence that these types of shifts increase pregnancy complications including preterm labor.7,10 Beyond the federal requirements of the Pregnancy Discrimination Act, many states have laws that require workplace accommodations during pregnancy without regard to temporary disability status.11 Reviewing and applying these laws and policy to support residency trainees should be a priority of all GME program directors to remove barriers and misperceptions and support resident's needs.

The amount of family leave (e.g., maternity or parental leave) the GME program provides the pregnant resident depends on a combination of federal and state laws, national Accreditation Council for Graduate Medical Education (ACGME) policy, board certification requirements, and hospital policy.12,13 The Family and Medical Leave Act (FMLA) is a federal law that requires employers to provide twelve weeks (unpaid) leave to employees who have been employed for more than 12 months. Given this resident is not an intern, she would be eligible to take 12 weeks of FMLA leave.14 The caveat is that this leave does not need to be paid, and the effect on graduation is determined by the national specialty board.

In July 2020, the American Board of Medical Specialties (ABMS) announced that all AMBS Member Boards would be required to allow residents a six-week period of parental, caregiver, or medical leave without requiring an extension in training, and without exhausting sick leave or pre-existing vacation.15 Their motivation was to “offer residents and fellows more flexibility, reduce stress, and increase autonomy in making life decisions, especially with regard to family and parental leave”.

Different specialty boards have responded to the AMBS Policy on Parental, Caregiver and Family Leave with different solutions. The relevant policy in this case is the American Board of Surgery’s policy which allows four weeks of leave every academic year plus an additional two weeks off for parental leave once during the first three years of residency and once during the last two years of residency, for a total of six weeks of leave in a year without delaying graduation.16 Whether this leave is paid is ultimately a decision made by the resident’s hospital system, unless the state requires paid parental leave. Hospital policies on paid parental leave vary widely from no paid leave, paid leave in the amount of annual vacation with no additional paid parental leave, paid parental leave for a period of less than 12 weeks, or 12 weeks of paid parental leave.17 Some hospitals also provide paid leave in the form of short-term disability. It is again important to remember that requirements to pay leave are a floor, and there is nothing prohibiting hospitals from paying for 12 weeks
of parental leave. In fact, the American Academy of Pediatrics recommends a minimum of twelve weeks of paid leave. Some states require paid parental leave for state employees.

As more women enter the physician workforce, pregnancy is becoming a routine event for GME programs. As seen in this case, the lack of standard policies to protect pregnant residents leaves the burden on the residents to ask for reasonable accommodations. Given the power differential and hierarchical nature of medical training, some pregnant residents may not feel comfortable asking for accommodations and can suffer harm to their pregnancy as a result. This partially may explain why women in medicine have twice the rate of miscarriages as the general public. Instead, programs should adopt evidenced-based best practices such as eliminating night shifts and call during the first and third trimester to reduce the risk of harm to pregnant residents. Additionally, GME programs should adopt 12 weeks of paid parental leave for all new parents as longer leave has been shown to improve both parent and infant health. Finally, these policies should be made leave for all new parents as longer leave has been shown to improve both parent and infant health. Finally, these policies should be made

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Case 15 (Author: Christine Hein, M.D.)

Fellow: A 31-year-old critical care fellow was in the final months of her training. In preparation for graduation, all senior critical care fellows take two months of junior attending call. She was called one night to care for a critically ill patient with severe pancreatitis. Ultimately, after several hours at the bedside, the patient acutely decompensated, had a cardiopulmonary arrest and died. Upon review of the case, it was discovered that the fellow missed the diagnosis of intra-abdominal hypertension which was believed by her attendings to be a proximate cause of death. She was devastated by her clinical mistake.

Contextual Features: The fellow felt guilty about the death of her patient, worried this case will result in a lawsuit, and was ashamed to have to face this as a new attending. She already had accepted a new job in another state, had her new medical license, and had been approved for credentialing.

Solutions/Suggestions for Handling the Current Situation: “There are two sets of victims after a system failure or human error has led to injury, and no one has done a good job of helping either. The first group of victims is patients and their families; the second is the health care workers involved in the incident.”

In November of 1999, the Institute for Healthcare Improvement released a seminal report, “To Err is Human: Building a Safer Health System”, which sparked public awareness about medical errors and initiated a national discourse on the incidence of and reaction to medical errors. Despite this landmark publication, a void persisted in the culture of medicine regarding coping with medical errors. Unrealistic standards of perfection are modeled during education and training, which are passed on to each new generation of physicians. This culture of infallibility directly opposes compassion and forgiveness for physicians and contributes to the shame physicians feel following an error. Healthcare organizations also exacerbate the impact of errors by failing to provide assistance, resources, or counseling for physicians, hampering the recovery from medical errors.

While patients and their families are the primary victims of medical errors, physicians and other members of the health care team are second victims. Second victim syndrome is defined as “those who suffer emotionally when the care they provide leads to patient harm”. It is recognized widely that medical errors have many negative consequences which lead to emotional and occupational distress for physicians. Physicians suffering from second victim syndrome experience guilt, shame, anxiety, and fear immediately after an error occurs. Without proper support longer-lasting reactions may develop, including decreased clinical confidence, burnout, post-traumatic stress disorder, and depression.

After errors, physicians are commonly susceptible to feeling shame due to the medical culture of infallibility combined with personal characteristics of perfectionism. Shame has been correlated with negative coping strategies such as hiding and avoidance, which further can contribute to isolation and secrecy following a medical error. A national survey of U.S. and Canadian physicians examined the impact of errors on various work and life domains. After an error, physicians reported increased anxiety about future errors (61%), loss of confidence (44%), sleeping difficulties (42%), reduced job satisfaction (42%), fear of harm to their reputations (13%), and increased overall occupational stress (81%). A minority (10%) of survey respondents believed that their organization adequately supported them in coping with errors. Error severity and impact on patients, dissatisfaction with the process of error disclosure, and concern over future legal implications were all factors that influence the magnitude of distress physicians describe.

In the past two decades, much has been written about error disclosure in the medical profession. Once the exception, error disclosure is a foundational component of healthcare organizations’ quality and safety programs. Apologies are a powerful tool in recovery from medical errors and benefit both patients and physicians in the error disclosure and healing process. Apologies may restore trust in the physician-patient relationship, minimize the emotional impact, and facilitate recovery for both parties following an error. In a 2007 study, 89% of physicians reported disclosing a medical error to patients, but only 18% had received formal training in this process. While appropriate disclosure protocols are beyond the scope of this article, there is a clear need for specific training to ensure psychological safety for both the patient and the physician during error disclosure.

There is a growing body of evidence that has demonstrated an association between error disclosure and reduced litigation. Studies of patients pursuing litigation reported that many believed they would have been less likely to sue if they had received an apology. The University of Michigan Health System reported that both the cost and frequency of litigation decreased in the five years following implementation of their formal error disclosure program. As the culture
of medicine embraces error disclosure and apologizes as the evolving norm, many states are adopting “apology laws” that protect specific information shared in these conversations from being used in lawsuits against the physician.

In this scenario, the physician’s guilt, shame, and anxiety should be addressed with a comprehensive approach. The healthcare system should offer support and counseling as needed. The physician should participate in the review process, error disclosure, and apology with organizational support, and contributing system factors should be identified and remedied. Throughout the process, the physician should be encouraged to focus on personal wellness concepts and positive coping strategies to minimize the impact of second victim syndrome.34

**Case 16 (Authors: Tanya Anand, M.D., Bellal Joseph, M.D.)**

**Graduate Student:** A 27-year-old female M.D./Ph.D. student had been working in the lab of a well-respected and well-funded researcher for the past seven months. Her work was exemplary, and she had made significant contributions to the lab. However, over the past three months, working towards a deadline for a national meeting and a grant application, the lab head asked all to work late into the evenings and on most weekends. On several occasions, the lab lead insisted the student complete additional tasks before leaving for the night, placing her in the position of being the last student in the lab with him. He repeatedly has initiated hugging and kissed her several times against her wishes. He insisted his advances are playful and harmless, but she felt uncomfortable and was unsure what to do.

**Contextual Features:** In high school, the student’s parents divorced after her mother discovered her father’s affair with his office administrator.

**Solutions/Suggestions for Handling the Current Crisis:** Late nights and multiple deadlines are common for an M.D./Ph.D. student. Training is extended. Additional years are spent learning important techniques and publishing new data with the purpose of creating a foundation for a research-oriented career focus. The goal is to establish one’s own lab and perform independent research. Despite the hard work inherent in this path, there are troubling aspects in this scenario that must be addressed.

Several problematic issues existed. The first involved the expectation that all lab employees/students must work late in the evenings and on most weekends over the course of several months. Second, the lab lead singled out this student to stay and complete additional tasks before leaving for the night. Third, the sexual advances from the lab lead placed the student in the difficult position of refusing the unwanted attention from an individual supervising her.

The following paragraphs briefly discuss the dilemma and potential solutions for the lab employees and the M.D./Ph.D. student. Burnout is a notable concern for these students and employees. It is a state of mental and physical exhaustion related to work or care-giving activities.35 As many as half of all U.S. medical students are affected by burnout with prevalence rates as high as 71%.

In this scenario, the long hours and weekend commitments were not sustainable for the well-being of the staff and allowed little time for recuperation. Useful strategies, such as restructuring the schedule and duties with the lab head to alternate tasks and weekends could be utilized. Strategy sessions with narrative appreciative inquiry methods detailing what works and expanding upon those practices may help as well.36,37 In addition, incorporating wellness activities during the long days and weekends, such as group lunches, yoga, and time to attend to personal needs may allow for much needed breaks and promote improved mental health for the lab members.38

As to the vulnerability of the medical student and sexual harassment by the lab lead, unfortunately the circumstances are not unique to this student. In this lab, as in many areas of medicine, a dependent relationship exists between faculty and trainees. Faculty and department heads play a vital role in promoting trainees as they navigate academia. A detailed report published by The National Academies of Science, Engineering, and Medicine indicated that hierarchical and dependent relationships, isolating environs, and a male dominated environment such as those in academic medicine, create higher risk for the occurrence of sexual harassment.39

Current policies do not incentivize the prevention of sexual harassment.39 For this student, the worrisome dilemma lies in the consequences to her future in the lab, her mental and physical well-being, as well as her safety, when refusing and reporting the lab lead’s unwelcome advances. A written record should be kept of each occurrence. If possible, these incidents should be documented and discussed with the head researcher and the lab led to end the advances and the situations where the two individuals are alone together. Safe reporting channels exist in many medical schools, and these should be utilized to report the documented incidents at her school of medicine.39 Examples include an ombudsman office on many campuses as a place to report sexual harassment confidentially. If she has an advisor, then this individual may be able to guide her through the reporting process as well. The expectation of bringing the incidents to light is that the student can work in a healthier environment that facilitates her continued growth and development.

**Case 17 (Author: Donald Rosenberg, M.D.)**

**Medical School Dean’s Office:** A 42-year-old new Assistant Dean has been asked to coordinate a memorial service for a medical student who has died by suicide. He never had to address such a sensitive topic and was relatively new to his role and knew that he would be scrutinized for his management of this situation. Personally, he never struggled with mental health concerns and felt inadequate to lead this effort.

**Contextual Features:** The Assistant Dean recently moved from another state and was unfamiliar with the resources available at this new institution. He had a few contentious meetings with the Dean of the medical school and saw this situation as potentially leaving a devastating mark on his developing reputation at the school.

**Solutions/Suggestions for Handling the Current Crisis:** The death of a medical student from suicide was a tragedy for that student’s family, friends, and larger health care community. As highlighted in the case, it also can precipitate a leadership crisis for the Dean’s Office in the medical school. In this scenario, coordinating a memorial service for the student was assigned to a new Assistant Dean who felt “inadequate to
lead this effort”. If the Assistant Dean were to mismanage this delicate task, it would reflect poorly on his leadership competence. Nonetheless, this moment was not about the Assistant Dean and his emerging reputation. Instead, his attention needed to remain focused on how to honor the student’s life respectfully and serve the needs of the medical school. The history of contentious interactions between the Dean and Assistant Dean was relevant only to the extent that the Dean needed to be consulted and informed about planning the memorial service since the Assistant Dean worked for and represented both the Dean’s office and the medical school.

Unfortunately, there was limited literature regarding suicide among medical students and guidance for memorial services. It may be helpful for the Assistant Dean to remember that the memorial service did not have to happen immediately. He can send out an announcement that there will be a memorial service and take the necessary time to plan the service carefully. Communications related to the student’s death, and the medical school’s response to it, should be crafted thoughtfully and reviewed with the Dean. With respect to the painful topic of suicide, language is critical. For anyone who has survived a loved one’s death from suicide, the phrases “successful suicide” and “committed suicide” can be deeply hurtful and should be avoided.

The service should be viewed as one key component of a more comprehensive institutional response to this impactful event. Students should be reminded of existing mental health support services and wellness programs. Model programs to identify and intervene with medical students at risk for suicide are promising and suggest a need for wider implementation. The aftermath of an event of this magnitude presents an opportunity to reflect on organizational changes that are needed to lessen the risks of future suicides among students.

There are several specific considerations that can help the Assistant Dean coordinate an appropriate memorial service. He needs to be actively engaged and attentive to process issues in planning the service (e.g., speaking with key stakeholders and communicating with the student’s family, if they are willing and able, to learn about relevant familial and cultural customs and preferences). This is a leadership challenge. The Assistant Dean does not need to have professional or personal experience with mental illness, suicide, grief or mourning rituals. In fact, having the self-awareness that he feels inadequate in these matters can be turned into a strength; he should enlist a mental health professional and others to work closely with him to plan the memorial service.

A thoughtful and sensitive memorial service can help a community process a terrible event like a suicide. The Assistant Dean was asked to coordinate the service. He was not obligated to lead the entire service. After welcoming the attendees and providing brief introductory comments, he can turn over the proceedings to someone more comfortable with this role (e.g., a chaplain, a faculty member who knew the student well, or perhaps even the Dean). At a minimum, messages shared during the service should include the following: an acknowledgement of the magnitude of the loss for family, friends, and medical community (this should not in any way feel like a morbidity and mortality conference as it is not the place to explore precipitating causes for the suicide or the specific circumstances of this student’s experience prior to death), and that help is available for all students who are suffering.

There may be understandable concerns on the part of the medical school’s leadership about assigning blame, possible litigation, reputation damage to the institution, or fear of additional suicides. None of these concerns belong in the service. Instead, the faculty and leadership need to focus on the student who died and convey a genuine commitment to student health and well-being moving forward.

A student’s death from suicide in any educational setting is profoundly unsettling. If carried out with compassion, humility, and authenticity, the response of administrators can make a major positive impact. If the new Assistant Dean can remember that no one manages a crisis like this by oneself, he can demonstrate effective leadership by enlisting the help and expertise necessary to honor the student and advance a culture of recognizing and responding to at-risk students.

Case 18 (Author: Sylk Sotto-Santiago, Ed.D., MBA, MPS)

Basic Science Faculty: A 52-year-old tenured professor of pharmacology had been informed that major budget cuts will be announced across the university. As such, faculty members had been asked to identify how to eliminate 10% of spending originating from departmental funds without disrupting the excellent research work. She was worried they will have to let staff members go, many of whom she has worked with for years. The university has been clear that decisions about staff must be made in alignment with the institution's commitment to diversity, equity, and inclusion (DEI). She was struggling to navigate the complexities of funding, research excellence, and honoring the years of dedication to the lab many made while being sensitive to the institution's and their personal commitment to DEI.

Contextual Features: Ten years prior, similar cuts were announced, and the department eliminated positions of three beloved staff members. She has felt guilty for that decision ever since.

Solutions/Suggestions for Handling the Current Crisis: The traditional basic scientists in academia support curiosity-driven research and a long-term vision of scientific progress. Nearly half of basic scientists surveyed had been forced by economic pressures to abandon an area of investigation they thought “central to their lab’s mission”. More than three-quarters had been forced by economic pressures to abandon an area of investigation they thought “central to their lab’s mission”. More than three-quarters had been forced by economic pressures to abandon an area of investigation they thought “central to their lab’s mission”. More than three-quarters had been forced by economic pressures to abandon an area of investigation they thought “central to their lab’s mission”. More than three-quarters had been forced by economic pressures to abandon an area of investigation they thought “central to their lab’s mission”.

Because of this professor’s previous experiences with similar cuts, a very intentional approach could be used this time. She should outline the problem with transparency and truthfulness, calling the research team together. There are many benefits of having diverse teams. Diverse teams demonstrate the ability to digest information needed to make key decisions effectively and examine facts while remaining objective. Inclusive teams make better business decisions two times faster with half the meeting time. Well-functioning diverse teams value the ability to guide their approach and trust to solve problems when they know the ultimate outcome is a challenge. The team also may identify actions that would lead to the greater
REFERENCES


WELLNESS IN ACADEMIC MEDICINE
continued.


Keywords: work-life balance, psychological well-being, patient safety, academic medical center