Physician Suicide: A Call to Action

by Molly C. Kalmoe, MD, Matthew B. Chapman, MD, Jessica A. Gold, MD & Andrea M. Giedinghagen, MD



To create the necessary cultural shift, individuals and institutions must not only agree that physician wellness is a priority, but also make tangible changes.



Molly C. Kalmoe, MD, and Matthew Chapman, MD, are Psychiatry Residents; Jessica A. Gold, MD, MS, is Assistant Professor; and Andrea M. Giedinghagen, MD, (above) is Instructor; Department of Psychiatry, Washington University in St. Louis, Missouri. Contact: giedinghagena@wustl.edu

Abstract

Physician suicide is topic of growing professional and public health concern. Despite working to improve the health of others, physicians often sacrifice their own well-being to do so. Furthermore, there are systemic barriers in place that discourage self-care and help-seeking behaviors among physicians. This article will discuss the relevant epidemiology, risk factors, and barriers to treatment, then explore solutions to address this alarming trend.

Background

Physicians are healers. They perform life-saving surgeries, cure cancers, and conduct groundbreaking research. They also spend nights and weekends on call, documenting in the electronic medical record, and staying abreast of the latest innovations. In the service of others, physicians often forget to care for themselves—and work through illness, including mental illness. Yet, physicians are human, too, and need care like anyone else. ¹

Current literature suggests mental illness and burnout are epidemic in physicians and medical trainees. One study found 20% of medical residents met criteria for depression while 74% met criteria for burnout.^{2,3} Burnout—different from but correlated with depression—refers to the triad of emotional exhaustion, depersonalization and feelings of

inefficacy resulting from chronic work-related stress.⁴ Yet even with high rates of illness and knowledge of mental illness gleaned from their own coursework, physicians and trainees rarely seek treatment. The trend starts early: per Rotenstein et al. while 27.2% of medical students exhibited depressive symptoms, only 15.7% percent sought treatment.⁵

The consequences of this inaction are dire for both physician and patient. Residents with depression were 6.2 times more likely to make medication errors than non-depressed residents.3 For physicians, avoidance of treatment may result in worsening illness-or even death by suicide. Documentation of increased suicide risk among physicians dates to the 19th century.6 However, more recently, a 2004 metaanalysis found a modest increase in suicide rates of male physicians relative to the general population—and an even greater increase among female physicians.7

This paper will provide an overview of the state of suicide in physicians and medical trainees. More importantly, though, it will focus on solutions: emphasizing the importance of prevention and identification, as well as fostering a culture of wellness and support. The call to action is clear: "Physician, heal thyself."

Epidemiology

Suicide is the second most common cause of death for 10- to 34-year-olds in the United States.⁸

SCIENCE OF MEDICINE

The average age of matriculating medical students in 2017-2018 was 24.9 Thus, it should come as no surprise that medical students, residents, and attendings—like other Americans—are affected by suicide and mental illness.

Burnout and depression start early in medical training. At the time of matriculation, medical students have lower levels of depression and higher quality of life than age matched college graduates, but within months, their rates of burnout and suicidality exceed age-matched peers'. ^{10,11,12} There seems to be something inherent to medical school that contributes to reduced quality of life and emergence of mental health conditions. ⁵ This trend continues or even worsens in residency, fellowship, and beyond.

A 2015 meta-analysis of 54 studies examined the prevalence of depression and depressive symptoms in resident physicians across decades and around the globe.² They found a 15.8% increase in depressive symptoms during the first year of residency, across all specialties and countries of training. Over the course of training 20.9% to 43.2% of residents reported depressive symptoms, with symptoms increasing over time. This finding could be extrapolated to fellows, attendings, and other post-training physicians. Currently, the actual data for post-training programs is sparse.

No recent studies have evaluated the incidence of suicide in physicians or medical trainees, but older studies have noted increased risk among practicing physicians specifically. Male doctors have suicide rates as much as 40% higher than the general population, and female doctors up to 130% higher. As discussed above, a number of cross-sectional findings also demonstrate higher rates of depression in medical trainees compared to the general population. This is likely attributable to doctors' immense professional burden and (encouraged) neglect of their own well-being. Given the risks of continued inaction, it is essential to actively address suicide and mental illness in this population.

Risk Factors

Suicide risk is comprised of many factors, including biological, psychological, and social components. ¹³ Major risk factors for suicide include mental illness and substance use disorders: 90% of individuals who die by suicide suffer from at least one of these. ¹ Other notable risk factors include previous suicide attempts, hopelessness, access to lethal means, lack of an adequate support system, and chronic medical disorders. ¹³

In addition to general risk factors, the elevated suicide risk among physicians is likely due to population-specific factors. Physicians are trained in toxicology and have readily available access to lethal medications, and depending on specialty, may have additional expertise that can be turned to lethal use.1 Doctors are also exposed to high levels of personal and professional stress. They must make lifeor-death decisions at work and are constantly at risk of malpractice claims. They may face high-stakes conflicts with administration or colleagues, and many struggle with marital conflict or issues at home because of work demands. To make things worse, increasing oversight and regulation has diminished physicians' autonomy, which has been linked to decreased job satisfaction and burnout.4 Moreover, modern physicians are increasingly burdened by cumbersome electronic health records systems and stringent documentation requirements, which now frequently occupy more of their work hours than direct patient care.14

Substance abuse—which is itself a risk factor for attempted and completed suicide—is another occupational hazard. Female physicians have higher rates of alcohol abuse than women in the general population. Addiction is prevalent especially among emergency physicians, psychiatrists, and anesthesiologists. ¹³ Substance abuse is associated with impulsivity and worsening affective symptoms. Thus, it is hardly surprising that physicians with substance use disorders have elevated rates of suicide attempt and completion.

Additionally, medical training encourages stoicism. From medical school on, physicians are taught there is no room for error and are expected to perform to exacting standards. Physicians are trained to put patients first—often to their own detriment. Trainees may believe they will be faulted for showing vulnerability, and thus avoid asking for help. This self-imposed isolation virtually guarantees burnout. As a result, although physicians are typically better resourced than the general population, there remain significant barriers to seeking help.

Barriers for Physicians

Most people with mental illnesses are untreated or inadequately treated—and physicians are no exception. In fact, in an analysis by Gold, physicians who died by suicide were less likely to be receiving mental health treatment than non-physicians who died by suicide. ¹⁶ Many barriers impede access to mental health care across the demographic spectrum, including culture-wide stigma and a shortage of qualified providers. Physicians, though, also face a unique set of challenges. ¹⁷

Firstly, physician suicide is poorly understood. Not only is there inconsistent reporting and a paucity of

descriptive data, but investigative work in this area including prevention-based studies—has been limited.⁷ Secondly, despite extensive training, physicians often struggle to identify depression and other mental illnesses in patients, colleagues and themselves. 18 Although mental illness can impair an affected individual's insight, the culture of medicine also plays a role in this phenomenon. 1,19 Stoic training environments normalize stress and distress as inherent or even requisite components of physician identity. Sleep deprivation and long hours are viewed as badges of honor. Physicians and trainees are encouraged to see their peers as competition, instead of support. As a result, physicians may feel alone or even like imposters. This lack of social support then correlates with greater burnout.²⁰ Isolated within competitive training environments, trainees often learn to ignore signs and symptoms of burnout, depression and suicidality. Thus the medical profession sustains a dangerous "culture of silence." 21

Despite the fact that depression and suicidality are treatable, most affected physicians and trainees do not receive care. 16 Though physicians' propensity to avoid treatment is not yet entirely understood, it is likely multifactorial in nature. Stigma against mental illness remains pervasive in the medical community.^{1,17,22} Even among a sample of psychiatrists, who theoretically should be less affected by stigma, 15.7% had self-medicated for depression.²³ Trainees and physicians are also less likely to seek routine medical care when compared to age-matched peers.²⁴ Twenty-five percent or more of physicians have no primary care provider.1 This lack of regular medical care means a significant portion of the physician population will not receive routine depression screening. Physicians without primary care providers also miss opportunities for early interventions and mental health referrals that could ultimately prevent suicide.

Even with proper referrals, accessing mental health services is uniquely difficult for physicians and trainees. Many communities have a shortage of psychiatrists and therapists, and wait lists for new patient appointments are often lengthy. Physicians' work schedules often preclude attending appointments during regular office hours, and few health care providers offer extended hours such as nights or weekends. Even when they manage to obtain appointments, physicians may struggle to keep them due to emergencies or other unexpected clinical duties. Affordability is also a concern, particularly for trainees and early career physicians who carry heavy debt burdens. Money becomes an even greater barrier when doctors pay out of pocket – which they often must in order to see a particular provider (ie, to

avoid seeing work colleagues), to avoid insurance claims, or minimize wait times. Delivery of psychiatric care to physicians is also complicated, for patient and provider. Most providers have little experience treating fellow physicians, and many doctors are uncomfortable in the patient role, creating a challenging dynamic.

Confidentiality concerns are another barrier to seeking care.²⁵ Treatment requires physicians make very private disclosures to a mental health professional, who may also be a friend, colleague, or both. Given the stigma surrounding mental illness, shame is common. Physicians may also fear being outed to peers, where stigma may damage reputations and hinder career advancement. Many trainees and practicing physicians avoid care due to fears it will impact their medical licensure, and not without reason.²⁶ As of 2006, 78% of U.S. state medical boards asked about applicants' histories of mental illness. Only 33% of states focused on functional impairment due to mental illness rather than any lifetime history.²⁷ Beyond licensing concerns, physicians are also forced to consider the effects of mental health treatment on future cost and availability of professional liability insurance as well as disability, life, and health insurance policies.²⁸ As a result, some physicians forgo treatment altogether, while others attempt to self-medicate for psychiatric symptoms with potentially devastating results.

These barriers notwithstanding, there are also physician-specific protective factors for suicide that foster resilience. These include access to health care, experience in conflict resolution, family and community support, and religious or other beliefs valuing self-preservation. ^{1,15} In one 2013 study by Zwack and Schweitzer, interviews with 200 physicians revealed resilience factors including spiritual practice, physician self-awareness, gratification in work, accepting personal limitations, and learning how to better balance and prioritize. ²⁹ Understanding both the risk and resilience factors for physician impairment and suicide is essential for crafting effective solutions.

Solutions

Many potential solutions to the problem of physician suicide have been proposed. These range from interventions on the individual level to large-scale initiatives designed to effect systematic change. However, relatively few strategies have been evaluated empirically.

Ideally, physician mental health should be addressed before physicians are contemplating or attempting suicide. Practicing physicians across all specialties should be taught to recognize signs of depression as well as risk factors for

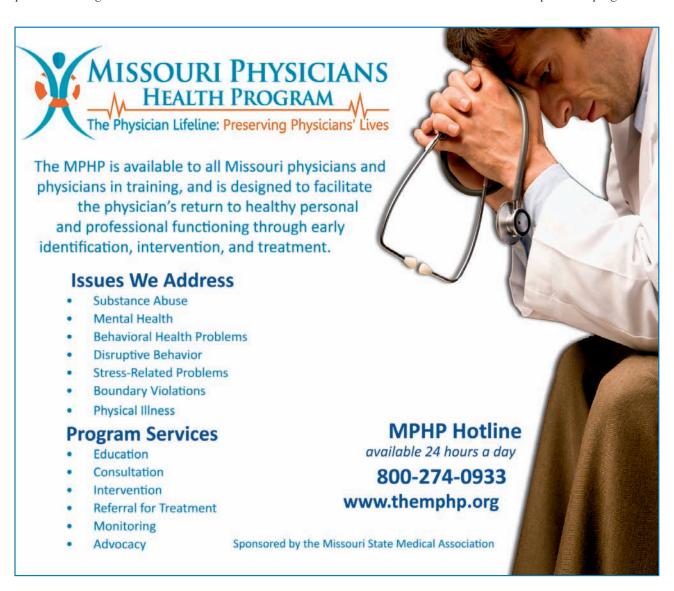
SCIENCE OF MEDICINE

suicide—both in themselves and others. ¹ This can be accomplished through formal inclusion of this information in medical school and residency training curricula, as well as through continuing medical education (CME) courses for attending physicians. The American Psychiatric Association's website provides free wellness education, self-assessment items, and resources for physicians battling burnout, depression and addiction. ³⁰ The American Medical Association also currently offers an online toolkit (Steps Forward) addressing physician distress and suicide. ¹⁷

Medical students and residents with existing mood disorders should be connected with systemic supports early on, as should any physician with newly emerging burnout or mental health problems. As time is a major barrier to accessing care, training programs should have policies allowing time off clinical duties to access mental

health services—access itself is something mandated by the most recent Accreditation Council on Graduate Medical Education (ACGME) guidelines.²⁵ Subsidized or reduced-fee services reduce the financial disincentive for seeking care, especially among trainees and early career physicians.

Training-program-specific mental health clinics and referral networks for trainees are one way of ensuring access to treatment. Clinics with integrated care models can also decrease the stigma associated with seeking help. ¹⁹ In these models, primary care doctors not only provide routine health screenings and medical care, but also screen for mental health issues. Patients can then be referred immediately to in-house mental health practitioners as needed. However, creating an entire clinic for every training program is impractical, and physicians and trainees may feel uncomfortable with school or work-sponsored programs.



In these cases, keeping a regularly updated list of external practitioners (accepting new patients, and who take the trainee insurance) is also very useful. Universal well-being assessments (allowing trainees to opt out) is another means to encourage use of available resources.³¹

Physicians should also be supported in implementing lifestyle habits to mitigate symptoms of burnout, including regular exercise, meditation and maintaining a healthy social life.³² Physical exercise is well known for its health benefits, which include reducing symptoms of burnout and depression.³³ Meditation, and more broadly, mindfulness, has gained popularity in recent years as another approach to enhance personal wellness. Mindfulness, which derives from the Zen Buddhist tradition is defined by Jon Kabat-Zinn as "paying attention in a particular way: on purpose, nonjudgmentally, and in the present moment."³⁴ Like exercise, mindfulness has been shown to reduce levels of anxiety and depression, and may contribute more generally to resilience.^{35,36,37}

Loneliness—prevalent among physicians and trainees—has also been implicated in burnout.³⁸ Few interventions have specifically targeted this risk factor; however, some residencies and hospitals have implemented planned social events with the aim of improving collegial engagement.³⁹ Others have tried Balint groups or Schwartz rounds to create space for processing stress and patient care. Impacts on wellness have been mixed.⁴⁰

Regardless of their current state of mental health, physicians and trainees should educate themselves about local legal protections for physicians, as well as the benefits and limits of physician health program in order to effectively advocate for themselves and colleagues. 1,28 Physicians should be aware of licensing requirements and the wording of mental health questions on their state licensing applications. For example, Missouri applicants no longer are asked to disclose mental illness unless it is functionally impairing. Information on the Missouri Physicians Health Program (PHP) is available at http://www.themphp.org/. Increased discussion and awareness also changes culture. Every day more physicians are disclosing their struggles—sometimes in one on one conversations, at other times in widely-read medical journals.⁴¹ Some hospitals are hiring Chief Wellness Officers, suggesting worker wellness should be measured, nurtured and considered as important as the monetary bottom line.

Unfortunately, the actions of individual physicians are insufficient to prevent burnout, depression, and suicide. Changing the stoic culture of medicine will require topdown efforts. ³⁶ These efforts should start at the level of

the individual training program or hospital, and the first step is acknowledging and assessing the problem. From there, individual hospitals and physician workplaces can implement changes to strengthen the physician community. For example, employers can implement flexible scheduling, wellness days and other strategies to help busy physicians make time for their own health needs.

Professional organizations and governing bodies are also important change agents—in terms of education and policy. Professional organizations such as the AMA are making efforts to raise awareness and broadcast the benefits of seeking help for depression and suicidality. Groups such as ACGME and the Liaison Committee on Medical Education (LCME) have mandated more extensive mental health curricula for medical students and residents. The AMA and other professional bodies should prioritize development of model policies to help hospitals, malpractice insurers and state boards better manage physicians' mental health needs—and to encourage, rather than stifle, help-seeking. In recent years, many state licensing boards have moved towards nondiscriminatory policies requiring disclosure only of impairment, misconduct or malpractice—rather than any history of mental health diagnosis or treatment.

Researchers also have a role to play in understanding and addressing the issue of physician suicide.³⁷ It is essential to investigate the evolving patterns of mental illness and substance use disorders in physicians. Research into helpseeking behaviors, barriers to treatment, risk factors and protective factors is also necessary.1 Future research must focus first on determining the incidence and correlates of physician suicide, utilizing not only psychological autopsies but other more sophisticated techniques. Development of accurate suicide-prediction algorithms is underway, and will help recognize the most at-risk physicians.⁴² Lastly, interventional investigations and outcomes research can identify and validate methods to ease the burden of physician burnout, depression and suicide. There is an urgent need for development and dissemination of these best practices.

An estimated 300 physicians die by suicide per year, and rates may be rising. 43,44 Each time, the headlines are saddening—even shocking. Rather than remain in denial, however, it is essential to call for change. To create the necessary cultural shift, individuals and institutions must not only agree that physician wellness is a priority, but also make tangible changes. Otherwise, the ranks of the medical profession will continue to be decimated—and that is a loss for everyone.

References

- 1. Center C, Davis M, Detre T, Ford D, Hansbrough W, Hendin H, Laszlo J, Litts D, Mann J, Mansky P, Michels R, Miles S, Proujansky R, Reynolds III C, Silverman M. Confronting Depression and Suicide in Physicians: A Consensus Statement. JAMA. 2003;289(23):3161-3166.
- 2. Mata D, Ramoa M, Bansal N, Khan R, Guille C, Di Angelantonio E, Sen S. Prevalence of Depression and Depressive Symptoms Among Resident Physicians: A Systematic Review and Meta-analysis. JAMA. 2015;314(22):2373-2383.
- Fahrenkopf AM, Sectish TC, Barger LK, Sharek PJ, Lewin D, Chiang VW, Edwards S, Widermann BL, and Landrigan CP. Rates of medication errors among depressed and burnt out residents: prospective cohort study. BMJ. 2008;336(7642):488-91.
- 4. Maslach C, Schaufeli WB, Leiter MP. Job Burnout. Annu Rev Psychol 2001;52:397-422.
- 5. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, Sen S, Mata DA. Prevalence of Depression, Depressive Symptoms, and Suicidal Ideation among medical students-A systematic review and meta-analysis. JAMA. 2016;316(21):2214–2236.
- 6. A Manual of Psychological Medicine, containing the Lunacy Laws, the Nosology, the Ætiology, Statistics, Description, Diagnosis, Pathology, and Treatment of Insanity. By John Charles Bucknill, M.D., F.R.S., Daniel Hack Tuke, M.D. 3rd Edition. London: J. & A. Churchill, 1874, pp. 806. (1874). Journal of Mental Science;20(89):111-120.
- 7. Schernhammer ES & Colditz GA (2004). Suicide Rates Among Physicians: A Quantitative and Gender Assessment (Meta-Analysis). Am J Psychiatry; 161:2295-2302.
- 8. Injury Prevention & Control, Ten Leading Causes of Death and Injury. Centers for Disease Control and Prevention. April 2018. Accessed 10 Dec 2018 at https://www.cdc.gov/injury/wisqars/LeadingCauses.html
- 9. Age of Applicants to U.S. Medical Schools at Anticipated Matriculation. Association of American Medical Colleges. Nov 2017. Accessed 15 Jan 2019 at https://www.aamc.org/download/321468/data/factstablea6.pdf
- Brazeau CMLR, Shanafelt T, Durning SJ, Massie FS, Eacker A, Moutier C, Satele DV, Sloan JA, Dyrbye LN. Distress Among Matriculating Medical Students Relative to the General Population. Acad Med. 2014;89(11):1520-1525.
- 11. Dyrbye LN, West CP, Satele D, et al. Burnout among US medical students, residents, and early career physicians relative to the general US population. Acad Med. 2014;89(3):443–445.
- 12. Dyrbye LN, Thomas MR, Massie FS, et al. Burnout and suicidal ideation among US medical students. Ann Intern Med. 2008;149(5):334–341.
- 13. Schernhammer ES (2005). Taking Their Own Lives The High Rate of Physician Suicide. N Eng J Med;352(24): 2473-2476.
- 14. Schulte F, Fry E. Botched Operation: Death By A Thousand Clicks. Kaiser Health News. 18 March 2019. Accessed 28 March 2019 at https://khn.org/news/death-by-a-thousand-clicks/
- 15. Drummond, D. Physician Burnout: Its Origin, Symptoms, and Five Main Causes. Fam Prac Med;2015:42-47.
- Gold K, Sen A, Schwenk T. Details on suicide among US physicians: data from the National Violent Death Reporting System. Gen Hosp Psychiatry 2013;35(1):45-49.
- Brooks E. Preventing Physician Distress and Suicide. American Medical Association 2018. Accessed 10 Dec 2018 at https://edhub.ama-assn.org/steps-forward/module/2702599#section-201978553
- 18. Cepoiu M, McCusker J, Cole M, Sewitch M, Belzile E and Ciampi A. Recognition of Depression by Non-Psychiatric Physicians A Systematic Literature Review and Meta-analysis. Journal of General Internal Medicine 2007;23(1):23-36.
- 19. Goldman M, Bernstein C and Summers R. Potential Risk and Benefits of Mental Health Screening of Physicians. JAMA 2018;320(24):2527-2528.
- 20. Kim B, Jee S, Lee J, An S, Lee SM. Relationships between social support and student burnout: A meta-analytic approach. Stress and Health 2017;34(1).
- 21. Moutier C, Norcross W, Jong P, Norman M, Kirby B, McGuire T, Zisook S. The Suicide Prevention and Depression Awareness Program at the University of California, San Diego School of Medicine. Academic Medicine 2012;87(3):320-326.
- 22. Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal

- ideation in medical students. JAMA 2010;304(11):1181-90.
- 23. Balon R. Psychiatrist Attitudes toward Self-Treatment of Their Depression. Psychother Psychosom 2007;76:306-310.
- 24. Cedfelt A, Bower E, Grady-Weliky, T, Flores C, Girard D, Choi D. A Comparison Between Physicians and Demographically Similar Peers in Accessing Personal Health Care. Academic Medicine 2012;87(3)327-331.
- 25. Givens JL, Tija J. Depressed Medical Students' Use of Mental Health Services and Barriers to Use. Academic Medicine 2002;77(9):918-921.
- 26. Hendin H, Reynolds C, Fox D, Altchuler SI, Rodgers P, Rothstein L, Rothstein M, Mansky P, Schneidman B, Sanchez L, Thompson JN. Licensing And Physician Mental Health: Problems And Possibilities. Journal of Medical Licensure and Discipline 2007;92(2):6-11.
- 27. Polfliet SJ. A National Analysis of Medical Licensure Applications. J Am Acad Psychiatry Law 2008;36:369-374.
- 28. Andrew LB, Brenner BE. Physician Suicide. Medscape 2018. Accessed 1 Jan 2019. https://emedicine.medscape.com/article/806779
- 29. Zwack J and Schweitzer J (2013). If Every Fifth Physician Is Affected by Burnout, What About the Other Four? Resilience Strategies of Experienced Physicians. Acad Med; 88(3): 382-389.
- 30. Well-being and Burnout: Take charge of your well-being. American Psychiatric Association 2018. Accessed 20 Feb 2019 at https://www.psychiatry.org/psychiatrists/practice/well-being-and-burnout
- 31. Sofka S, Grey C, Lerfald N, Davisson L, Howsare J. Implementing a Universal Well-Being Assessment to Mitigate Barriers to Resident Utilization of Mental Health Resources. Journal of Graduate Medical Education 2018;63-66.
- 32. Callahan K, Christman G, Maltby L. Battling Burnout: Strategies for Promoting Physician Wellness. Advances in Pediatrics 2018;65:1-17.
- 33. Cooney G, Dwan K, Mead G. Exercise for Depression. JAMA 2014; 311(23) : 2432 2433.
- 34. Jon Kabat-Zinn. Wherever You Go, There You Are. Hachette Books. 304ppg.
- 35. Goyal M, Singh S, SIbinga EMS, Gould NF, Rowland-Seymour A, Sharma R, Berger Z, Sleicher D, Maron DD, Shihab HM, Ranasinghe PD, Linn S, Saha S, Bass EB, Haythornthwaite JA. Meditation Programs for Psychological Stress and Well-being: A Systematic Review and Meta-analysis. JAMA Intern Med 2014;174(3):357-368.
- 36. Shanafelt TD, Noseworthy JH. Executive Leadership and Physician Wellbeing: Nine Organizational Strategies to Promote Engagement and Reduce Burnout. Mayo Clin Proc 2017;92(1):129-146.
- 37. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Intervetions to prevent and reduce physician burnout: a systematic review and meta-analysis. Lancet 2016;288:2272-2281.
- 38. Shapiro J, Zhang B, Warm EJ. Residency as a Social Network: Burnout, Loneliness, and Social Network Centrality. J Grad Med Educ 2015 Dec;617-623.
- 39. Ziegelstein RC. Creating Structured Opportunities for Social Engagement to Promote Well-Being and Avoid Burnout in Medical Students and Residents. Acad Med 2018 Apr;93(4):537-539.
- 40. Maben J, Taylor C, Dawson J, Leamy M, McCarthy I, Reynolds E, Ross S, Shuldham C, Bennett L, Foot C. A realist informed mixed-methods evaluation of Schwartz Center Rounds in England. Health Serv Deliv Res 2018;6(37):1-298.
- 41. Weinstein MS. Out of the Straightjacket. N Engl J Med 2018;278:793-795.
- 42. Belsher BE, Smolenski DJ, Pruitt LD, et al. Prediction Models for Suicide Attempts and Deaths: A Systematic Review and Simulation. JAMA Psychiatry. Published online March 13, 2019.
- 43. Facts about physician depression and suicide. American Foundation for Suicide Prevention 2018. Accessed 10 Dec 2018 at https://afsp.org/our-work/education/healthcare-professional-burnout-depression-suicide-prevention/
- 44. Rothenberger DA. Physician Burnout and Well-Being: A Systematic Review and Framework for Action. Dis Colon Rectum 2017;60:567-576.

Disclosure

None reported.

