



# Covid-19 and Increased Risk of Physician Suicide: A Call to Detoxify the U.S. Medical System

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Suicide among physicians is a longstanding problem, with risk factors exacerbated by the coronavirus disease 2019 (COVID-19) pandemic. In this article, we explore suicidal thoughts and behaviors among physicians and risk factors created or intensified by the work environment, such as overwork and loss of autonomy. We discuss the ways in which the COVID-19 pandemic has made the medical work environment more stressful (e.g. greater exposure to traumatic experiences and employment insecurity) and, consequently, elevated physician suicide risk. We also review evidence that the medical system in the United States has not adequately protected physicians' mental health. Lack of confidentiality, stigma, cost, and time, as well as intrusive medical licensing applications, remain barriers to physicians seeking help. Work pressures imposed by insurance companies and financial incentives to increase revenue while cutting costs compound physicians' work stress. We conclude that system-wide changes to the practice of medicine and policies regarding healthcare delivery are needed to improve physicians' work environments, as is research addressing the impact of the interventions to reduce their suicidal risk. The proposed changes, and greater access to timely and confidential mental health services amid and in the aftermath of the pandemic, may prove promising approaches to reduce physicians' suicide risk.

**Keywords:** physician suicide, COVID-19, physician burnout, Post-Traumatic Stress Disorder, medical licensing, physician mental health

## INTRODUCTION

The longstanding problem of physician suicide has drawn renewed attention during and in the wake of the COVID-19 pandemic. Popular belief has long held that physicians die by suicide more often than the general population, at a rate up to twice as high (1). An analysis of violent deaths in the United States (U.S.) between 2012 and 2016 contradicts this (2), but is consistent with prior studies which find that work stressors are more often linked to suicide in physicians (3). There is, thus, both opportunity and urgent need to address aspects of the work environment that influence physician suicide risk. Reform is particularly pressing in the wake of a pandemic that has seen physicians and other medical workers exposed to greater levels of danger, including provision of care to patients who have not yet received COVID-19 vaccines (4), upheaval (5), and immense suffering (6), as well as, in some cases, workplace closures and job instability, which itself poses elevated suicide risk. The American system of privatized medicine has made its hospitals and practices uniquely vulnerable to the economic vicissitudes of the pandemic (7). In this article, we

discuss how the work environment in the U.S. and the COVID-19 pandemic together have posed alarming threats to the mental health and increase the suicide risk of practicing physicians.

This article will focus on the suicide risk factors experienced by physicians in the U.S., who, according to one 2019 meta-analysis, were more than 1.3 times as likely than physicians anywhere else in the world to kill themselves (8). It is our aim to note the factors that exacerbate suicide risk among physicians and point to potentially promising ways to reduce this risk. Physician mental health is a pressing concern globally (8), and we by no means wish to suggest that the U.S. is exceptional in the pressures placed on medical workers. However, many risk factors and barriers to care are modifiable only on a country-by-country basis. We focus attention on the salient, and possibly modifiable, suicide risks to physicians posed by their workplace environment and exacerbated by the corporatization of healthcare (9). We argue that systemic reform is needed to prioritize physicians' mental health and, thereby, reduce their risk of suicide.

## SYSTEMIC RISK FACTORS AMONG U.S. PHYSICIANS

The prevalence of job-related stress among physicians who die by suicide accords with robust research showing that a medical career can create or exacerbate mental health problems. While certain personality traits, such as maladaptive perfectionism, are associated with physicians developing mental health problems (10), the conditions of medical training appear to cultivate psychological distress among many physicians. An erosion of trainee's mental health begins within months of starting medical school (11). The often extreme deprivations and stresses of medical training, including emotional abuse (12) and unhealthy long shifts (13), erode mental health and inculcate self-blame, which heighten suicide risk (14).

Graduating medical students enter an increasingly corporatized work environment (9). Simultaneously, mental ill-health linked, or potentially linked, to work is on the rise among physicians. One international meta-analysis found that self-reported depression among medical residents increased between 2006 and 2015, with between 20.9 and 43.2% experiencing depression or depressive symptoms (15). Burnout, an occupational problem comprising exhaustion, cynicism, detachment and feelings of ineffectiveness (16), also rose among U.S. physicians between 2011 and 2014 (17). The problem of physician burnout is global, with physicians worldwide working in increasingly unforgiving conditions (18). Though some studies find it is not directly linked to suicide (19), burnout has symptomatic and conceptual overlaps with depression (2, 20), and is associated with medical error (19), itself a physician suicide risk factor (21).

In particular, burnout rates are elevated among physicians in emergency, family, and general internal medicine (17) – specialties in which physicians are seeing increasing patient volume due to misaligned financial incentives (22). Dissatisfaction with work-life balance among U.S. physicians is also increasing (17). Documentation burden, which has grown

with Medicare, insurance, and hospital reporting requirements, is also a strong predictor of burnout (23). According to one study of psychiatry residents, documentation burden was a greater factor in burnout than clinical rotation, sleep, or other lifestyle factors (24). Further, declining professional autonomy (9), often a byproduct of healthcare consolidation in the U.S. (25), undermines a sense of control over one's own schedule and practice environment, which has been found to be the single strongest predictor of physicians' job satisfaction (26). A study of physicians working in the U.K.'s National Health System supported the connection between lack of autonomy and high levels of burnout, with emotional exhaustion and depersonalization mediating the relationships between autonomy and psychological symptoms (27). It is concerning, therefore, that in recent decades, U.S. physicians have experienced a loss of autonomy, combined with increasing time pressure and a comparatively heavy clerical burden (28, 29).

Physicians' increasing exposure to risk factors for burnout and other work-related syndromes is disconcerting in light of the need to reduce suicide risk. According to Joiner's interpersonal theory of suicidality, a suicide attempt results from three aspects: lack of belonging, perceived burdensomeness, and the acquired capability for suicide (30). These align with the primary aspects of burnout, including depersonalization (resulting in withdrawal) and a reduced sense of personal accomplishment (16), which may well precede social alienation and perceived burdensomeness. (31) validated the link between work dissatisfaction and feelings of ineffectiveness and physician suicidality, as mediated by anhedonia. These conditions may be exacerbated by modern trends in healthcare, such as the lack of autonomy discussed above (9) and the increased use of impersonal quality metrics (32) to evaluate physicians' performance.

## MENTAL HEALTH RISKS POSED BY THE PANDEMIC

Existing suicide risk factors for physicians are compounded by the COVID-19 pandemic. A 2015 study of suicidality in physicians found that experiencing traumatic medical events predicted the acquired capability for suicide (33), supporting the theory that physicians' exposure to pain and horror meets one of Joiner's pre-conditions for suicide (30, 34). The effect may be especially stark for physicians who are not accustomed to treating critically ill patients, such as those redeployed to critical care settings from non-acute specialties during the COVID-19 pandemic. In addition, exposure to dangerous working conditions and the emotional impact of providing futile care (35) may fuel feelings of cynicism and detachment, possible precursors to the thwarted belonging and self-perceived inefficacy that complete the triad of pre-conditions posing risk for suicide (30). Indeed, one international study found that depressive symptoms were elevated among healthcare workers who were redeployed to the ICU (36). Other proven psychiatric risk factors during the pandemic include inadequate personal protective equipment (PPE), which was shown to be associated with both depression and anxiety (36, 37); and being a healthcare

worker in the U.S. or U.K., which was also associated with depression (36). Symptoms of Post-Traumatic Stress Disorder (PTSD) were common among healthcare workers who treated COVID-19 patients in China and Italy (38, 39), and a survey at one New York City institution in April 2020 classified 57% of staff as suffering acute stress (40), a prodrome to PTSD, which itself is a risk factor for suicide (41).

Early data have not shown an increase in overall suicide deaths due to the COVID-19 pandemic (42). However, data are not yet available on suicide rates for physicians, some of whom have worked in crisis conditions since the beginning of the pandemic and continue to do so with emergence of new COVID-19 variants (43). Moreover, both the mental health consequences and practical changes wrought by the pandemic will persist. For example, medical workers who treated SARS patients during a 2003 outbreak in Beijing reported elevated depressive symptoms up to 3 years later (44). In practical terms, COVID-19 intensified financial pressure on U.S. rural and independent hospitals and practices (45) and accelerated the vertical consolidation of healthcare practices by corporations (46). The employment-related fallout of COVID-19 was evident in a September 2020 poll in which 30% of 2,334 physicians surveyed reported feeling hopeless due to the pandemic's effects on their employment (47) – an effect specific to the vulnerabilities of privatized medicine.

## BARRIERS TO ACCESS AND ATTEMPTS TO OVERCOME THEM

The stigma of mental illness in the medical profession (48) is reinforced by medical license, job, and malpractice insurance applications (49), which may scrutinize a physician's entire psychiatric history. Physicians who report a past or present mental illness risk being subjected to monitoring of their behavior or barred from practicing altogether (50). The effect of invasive applications is profound. Half of physician respondents to one survey believed that they had met criteria for a mental illness but had not sought help; 44% of those cited fear of reporting to a licensing or hospital board (50). Despite increased attention to physician mental health during the pandemic, a national poll of emergency physicians in October of 2020 found that 57% would fear for their jobs if they sought mental healthcare, and 73% agreed there was stigma around doing so (51). Physicians are forced into circuitous tactics, such as seeking treatment in a different city, self-prescribing, or paying cash to avoid insurance claim records (50). These tactics may be prohibitively expensive for medical students and residents (52). Finally, and significantly, scheduling constraints may make it difficult to get timely or regular treatment (53). Barriers to help-seeking combine with tragic results: physicians who die by suicide are half as likely as suicide victims in the general population to have been receiving mental health care prior to their deaths (3).

Suicide prevention programs at medical schools and hospitals have tried, with varying success, to address privacy, time, and cost barriers to therapy. Proven approaches include recruiting outside providers to provide free or discounted therapy sessions without filing insurance claims (54) and storing users' records outside

of the hospital's electronic health record (55). The Interactive Screening Program (ISP), designed by the American Foundation for Suicide Prevention, encrypts user's identities to allow them to correspond anonymously with counselors (56). A program at the University of California, San Diego's medical school based on the ISP has proven successful at identifying and referring at-risk persons (57). However, response and referral uptake from large-scale screening can be low (57), highlighting the need for multiple avenues to treatment. Significantly, although time to pursue and receive help has been found to be the greatest barrier to physician help-seeking (53), we did not find a single hospital that has provided protected time for physicians to access mental health care.

## FUTURE RESEARCH DIRECTIONS

While privatized medicine is frequently discussed in terms of its impact on medical spending (58) and patient access (59), rarely is it examined with relation to physician mental health or suicide risk. There is a need for research to compare physician suicide risk in the U.S. with that in other healthcare systems to identify ways that these systems affect the mental health of medical care providers. For example, physician burnout rates may be more than three times higher in the U.S. than in Europe (18). While many papers recommend organizational fixes to reduce burnout by improving the working environment (60), before-and-after studies of such organizations are rare.

Further, despite a long history of interest in physician suicide in the medical literature, data are still lacking and some subgroups of U.S. physicians who face unique challenges to their mental wellbeing remain overlooked. As one example, female physicians have a relatively high suicide rate (61), but little is known about why this gender disparity exists. Future research is needed to elucidate the roots of sex differences in the rates of physician suicide. The fact that physicians more often complete suicide when they attempt it (62) suggests a need for safeguards against access to lethal means such as fire-arms and self-prescribed medications. In addition, non-white physicians report experiencing racism from patients and colleagues (63). These work conditions may undermine feelings of self-worth and pose risks that should be explored in future research. And, because physicians who are immigrants from another country experience unique stressors—including a visa process that restricts their employment options, xenophobia, and having their professional qualifications questioned (63), immigration status should be included in studies on physician mental health. Future research should focus on the ways in which physicians' work environment affects their mental health in general and their risk of taking their lives, more specifically.

Workplace circumstances that undermine autonomy and control over one's work conditions and restrict personal time to care for parents, children, or spouses; long shifts; substantial administrative or clerical load; and parental burden (64) may heighten physician suicide risk. The COVID-19 pandemic further highlighted the importance of working conditions and workplace culture to healthcare workers' wellbeing. Many

healthcare workers reported both inadequate PPE and threats of retribution for calling out unsafe working conditions (65); the aftereffects of these conditions on job satisfaction and feelings of belonging should be examined. Healthcare workers may also have been troubled by the feeling that they were providing futile care, which is associated with burnout (35) and evocative of the helplessness symptomatic of PTSD (66). Given that healthcare workers who were redeployed to the ICU during COVID-19 and who perceived their training as inadequate have been found to be at higher risk of depression (36), the relationships between secondary traumatization, self-perceived medical errors, moral distress (67) and suicide risk factors should be examined. In addition, examining job-related suicide risk factors among physicians whose practices were financially damaged during COVID-19 and those in workplaces that were consolidated is warranted. Such studies could make use of the Beck Depression Inventory to measure perceived burdensomeness and thwarted belonging among a wide sample of physicians (31) to determine the mediating and/or moderating role of burdensomeness and belonging on physician suicide risk. Given high rates of burnout and quitting among medical workers (68), studies should make a special effort to include those who retired or changed jobs after experiencing the pandemic and explore their reasons for leaving the workforce.

## DISCUSSION

Research on physician suicide is hampered by the impossibility of knowing the events that led up to any one death, and the danger of tritely attributing suicides to a specific cause. Nevertheless, some facts are clear: COVID-19 has intensified a wide range of stressors for medical workers; physicians' mental health problems go undertreated; and systemic changes to the medical workplace over the past few decades are adversely affecting physicians' mental health. Female physicians (61), those who work in rural areas (51), and those in under-resourced practices or hospitals (45) may be at particularly elevated risk.

Employment circumstances that create stress and burnout, which already contribute to physicians' suicide risk (69), must be addressed to prevent their lethal combination with the stressors of the pandemic. Physician wellbeing experts recommend the use of clinician float pools to allow adequate time-off, supporting the careers of part-time physicians, and including physician wellbeing in institutional metrics (70). Mental health screening or counseling programs must eliminate privacy concerns and cost barriers (55). Changes to working conditions should reduce documentation requirements (71), lengthen the time spent with patients (72); bolster physicians' independence (26, 70, 73, 74) and reduce overscheduling, which may be the greatest barrier to accessing mental health care (53).

Such measures, on the surface, run contrary to the profit motives that drive healthcare (9). Hospitals and other employers tend to lean instead on generic "wellness" programs that target individual health behaviors without concomitant organizational change (75, 76). Given this pattern – and the shift of many physicians' roles to employee (9), intensified by mergers and acquisitions in the wake of the pandemic (46)–physicians might benefit from joining unions (77, 78), which are shown to improve employees' health and control over working conditions (79). Membership in a union or physicians' advocacy organization may also counteract feelings of isolation or alienation, one of the conditions of suicidality according to Joiner's theory (30). The legislation needed to ban licensing applications from including questions that deter help-seeking (80, 81) may be attainable only through collective self-advocacy. So too may restorative changes to physicians' working lives.

Occupational health research frequently presents physician mental illness as a detriment to profit or productivity (82, 83). Solutions focused on treatment or wellness put the onus on workers to adapt themselves to the changing demands of the workplace. We suggest that the U.S. healthcare system should adapt its model for the practice of medicine so that it prioritizes and supports physician's wellbeing. A return to the pre-pandemic status quo, in which mental illness risk factors for physicians were high (73), could be catastrophic. COVID-19 has laid bare a longstanding problem: the U.S. medical system undermines physicians' needs (84) while restricting their autonomy and options for self-help. It is tragic that those who spend years training to care for others are so often themselves neglected when it comes to their mental health. In the turmoil resulting from the pandemic, there exists a rare opportunity to raise awareness of, advocate for, and implement policies that promote physicians' occupational and mental health. Doing so may be the best medicine to reduce the risk of physician suicide.

## DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

## AUTHOR CONTRIBUTIONS

SK researched and wrote the manuscript. HP conceived of the manuscript, edited it, and contributed writing. Both authors contributed to the article and approved the submitted version.

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