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Keeping the Flame Alive: Medical Student Mental Health Support Protects Public Wellbeing

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ABSTRACT

The rising rate of physician burnout is contributing to an urgent public health crisis. Burnout devastates physicians, undermines patient care, and robs society of high-quality care and health care resources. This growing crisis has been tremendously exacerbated by the COVID-19 pandemic, which has placed enormous strain on health care providers in the face of uncertainty. Solutions are urgently needed, but to minimize the impacts to individual patient and overall public health, as well as to address physician well-being. This thesis utilized bioethical frameworks to identify and examine a partial solution to physician burnout by targeting medical students as future professionals. Specifically, utilitarianism and ethics of care are utilized to assess educational and professional culture interventions, based on a review of existing literature, which identified a particularly promising, novel approach to managing medical student well-being that can be carried forward into practice.

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ACKNOWLEDGEMENTS

I want to dedicate this thesis to all past, current, and future physicians and healthcare workers. The immense efforts of physicians during the pandemic have inspired me to become a physician and work towards a more ethical future, which will help in alleviating physician burnout and all its consequences.

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Chapter 1

Introduction

A 2019 pre-COVID pandemic study by the American Medical Association (AMA) found burnout impacted 44% of physicians (Berg, 2019). In September 2021, the *Medical Economics Journal* reported that four out of five physicians were burned out, although the pandemic continues to ebb and flow (Medical Economics, 2021). Burnout is defined as "a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed" (World Health Organization, 2019, para. 3). This extraordinary increase can be attributed to the COVID-19 pandemic, which has created another public health crisis in its wake: an unparalleled level of physician burnout. But, even before the current pandemic, physician burnout was a public health emergency, costing the U.S. health care system an average of $4.6 billion annually. This pre-pandemic figure does not account for nurses and other health care workers who also experience burnout at alarming rates. Today, the already-serious problem has been dramatically exacerbated by the COVID-19 pandemic as health care provider burnout affects everyone—from providers to patients to health care systems to the entirety of society.

Physician burnout, in particular, is of notable concern because physicians, as the health professionals with the broadest scope of practice, are looked to by the public as the experts tasked with improving the well-being of the citizenry. Physician burnout is not only a tragedy for the physicians experiencing this condition and a cost to the health care system, but it also has negative effects on patient outcomes, patient satisfaction, and overall safety and quality of care (Grow et al., 2019).

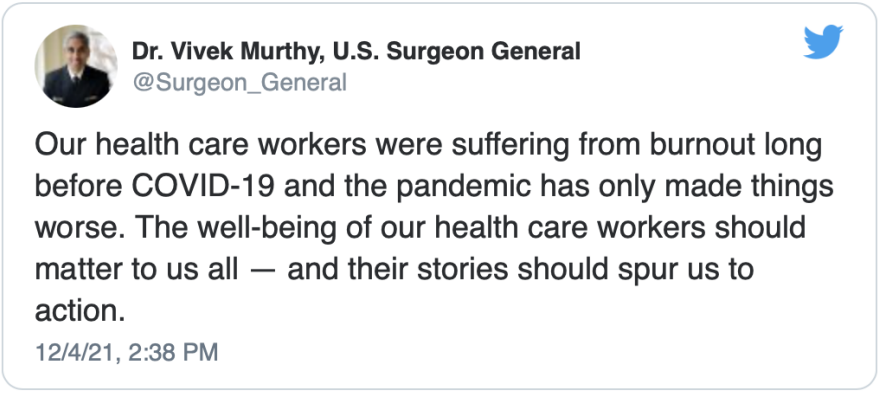

Figure 1. Surgeon General Tweet on Burnout

Therefore, it is imperative to identify the primary causes of physician burnout. It is also critical to prepare current and future medical professionals to recognize and act on this phenomenon when identified. To achieve these goals, systemic changes must be instituted to prepare and support physicians in avoiding, managing, and recovering from burnout. These efforts are especially important in the training of physicians because bolstering medical student mental health can help prevent and lessen future burnout—thereby enhancing patient outcomes and protecting public investment in critical medical resources. In this thesis, an ethical argument is made in support of innovating medical student education to proactively address provider mental health and well-being before professional burnout manifests.

Bolstering medical student mental health prevents future burnout, enhancing patient outcomes and protecting public investment in critical medical resources—thus raising overall population well-being. To reduce burnout, three main issues are examined. First, defining and exploring the primary causes of physician and medical student burnout are essential. Second, the economic and societal costs of burnout are examined to understand the various effects on

different populations. Finally, ethical solutions are discussed to alleviate this problem at a medical school level, where educational innovation can occur.

Chapter 2

Defining Physician Burnout

Burnout has become the ubiquitous term for chronic professional fatigue. In 1974, physician burnout was first described by psychologist, Herbert Freudenberg, who defined it as a type of exhaustion that resulted from "excessive demands on energy, strength, or resources" in the workplace with symptoms that included malaise, fatigue, frustration, cynicism, and inefficacy (Reith, 2018, p. 1). A decade later, Christina Maslach, a social psychologist, expounded on Freudenberg's definition and "develop[ed] a model of burnout consisting of three dimensions: emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment" (Reith, 2018, p. 2). She also created the Maslach Burnout Inventory (MBI) to measure the extent of burnout based on these three subscales (Reith, 2018).

Many researchers continue to use Maslach's approach when analyzing physician burnout and related trends. A review of the factors related to physician burnout found the condition, characterized by "emotional exhaustion, depersonalization, and a feeling of low personal accomplishment," present in health care systems across the world (Patel et al., 2018, p. 1). In this review, Patel and colleagues describe how physicians experience emotional exhaustion, explaining the phenomenon as "the feeling of being overextended and the depletion of one's emotional and physical resources, making [physicians] feel drained" (Patel et al., 2018, p. 1). Patel and colleagues also identified the presence of reduced personal accomplishment, including negative self-appraisal and feelings of incapableness/inefficiency in daily work (Patel et al., 2018). A cross-sectional study on this topic further explains that reduced personal accomplishment occurs "in response to chronic stress in jobs where individuals work with people" (Vercambre et al., 2009, p. 2). Furthermore, it was concluded that emotional depletion

and reduced accomplishment can give rise to negativity, which often leads to patient detachment (Patel et al., 2018). Such detachment results in depersonalization, which is characterized by treating patients as objects and assigning them a reduced moral status (Patel et al., 2018). Depersonalization in such an interactive, care-based relationship that depends on communication, trust, and empathy, has far-reaching and detrimental consequences for both providers as caregivers and patients as care receivers.

Chapter 3

Exploring the Factors Contributing to Physician Burnout

The review by Patel et al. provides a critical groundwork upon which other studies on physician burnout are built. Patel et al. found that 54.4% of U.S. physicians reported at least 1 symptom of burnout, and these symptoms usually originated from various risk factors (Patel et al., 2018). Patel and associates divide these risk factors into three categories: (1) personal characteristics, (2) work factors, and (3) organizational factors (Patel et al., 2018, p. 2). These categories are commonly adopted in other studies.

Personal Characteristics

Personal characteristics are defined by the Merriam-Webster dictionary as "special quality[ies] or trait[s] that make[] a person, thing or group different from others" (Merriam-Webster, 2021, ln. 1). In the context of physician burnout, Patel et al. denote that these traits include negative thoughts, harmful behaviors, and unrealistic expectations of the workplace and life (2018). In addition, medicine's culture emphasizes perfectionism and associated traits (Patel et al., 2018). These characteristics typically arise and persist due to an insufficient support system (Patel et al., 2018).

In a separate study, Moutier further discusses the notion of perfectionism and denotes that fear is a key factor underlying perfectionism (2018). Specifically, the fear at issue is "fear of punitive consequences or loss of colleagues' esteem as a result of acknowledging mental health struggles" (Moutier et al., 2018, p. 2).

Interestingly, Moutier and Patel et al. both allude to a bigger problem—mental health self-stigma. The perception that doctors are perfect is pervasive and extends to include their mental health. Although evolving, the social stigma associated with the need for mental health care still exists (Moutier, 2018). As a result, even physicians view the need for mental health interventions as a sign of personal weakness. This then feeds into the cycle of self-criticism and perfectionist behaviors, exacerbating emotional exhaustion (Moutier, 2018). Given the stigma, equating mental health needs with weakness, many physicians refrain from seeking mental health support. Moreover, internalized stigma and social stigma can combine with institutional stigmas. The American Psychiatric Association defines institutional stigma as "involving policies of government and private organizations that intentionally or unintentionally limit opportunities for people with mental illness" (American Psychiatric Association, 2020, para. 4). This confounding of stigma leads to increased rates of depression coupled with a chilling effect on help-seeking behaviors (Moutier, 2018). The result contributes to the high rate of suicide among physicians, one that is three times higher than that of the general populous (Moutier, 2018).

Burnout can also be impacted by various background variables. Utilizing a secondary analysis of a large epidemiological survey on public school teacher burnout, Vercambre et al. found that gender, age, and marital status are potential risk factors for burnout (2009). While more research is needed specific to physicians, this study provides insight into the personal characteristics that can influence burnout. For example, the study by Patel and colleagues demonstrates that gender is not a primary predictive factor but it does appear to influence physician burnout with females experiencing greater levels of burnout (Patel et al., 2019). In

addition, research has indicated that certain personality conditions, as such neurotic personality disorders, predict higher risk of burnout (Moss et al., 2016).

Work Factors

Patel et al. also discuss the role of work factors, including "excessive workloads, long working hours, specialty choice, frequent call duties (night call or weekend call), comprehensive documentation in electronic medical records, time spent at home on work-related factors, risk of malpractice suits, and methods physicians use to deal with patient death and illness" (2018, p. 2). In health care, especially for physicians, the work environment is often characterized by long, stressful hours. The COVID-19 pandemic has magnified these workplace factors, as nearly every hospital has been operating at excess capacity, under short-staffing conditions, and without the necessary resources (i.e., personal protective equipment for providers, sufficient medications to treat COVID-19, and the like). Dr. Eileen Barrett, deputy chief of medicine at the Indian Health Service's Gallup Indian Medical Center and advocate for clinician wellness, highlighted the work-related role of uncertainty during COVID, after losing a colleague to suicide. Is there enough personal protective equipment? Will I get infected? Will I infect my family? How many people will die? Particularly now, during the pandemic, this heightened role of work-related stress lays bare a systemic failing that can be addressed in terms of both systemic infrastructure and leadership, and it opens the door to begin addressing the issue through the provision of peer support groups, mental health support services for providers, and the like (Abbasi, 2020).

Organizational Factors

Finally, the third risk category for physician burnout stems from the organizations in which they work and includes “negative leadership behaviors, workload expectations, insufficient rewards, limited interpersonal collaboration, and limited opportunities for advancement and social support for physicians” (Patel et al., 2018, p. 3). As part of this organizational landscape, physicians experience difficulty asking colleagues for mental health support as they are faced with organizational stigma that discourages help-seeking for mental health needs (Moutier, 2018). For example, the provider culture discourages open conversations about and assistance addressing emotional and psychological problems (Knaak et al., 2017). Furthermore, Knaak et al. identified that, in the health care workplace, providers known to have mental illness are viewed as less competent, dangerous, and unpredictable (2017). Therefore, organizational culture can significantly contribute to the risk of physician burnout by fostering unhealthy, unrealistic expectations and standards that undermine the likelihood that those needing mental health support will seek it.

Chapter 4

Prevalence of Medical School Burnout

Having established an understanding of physician burnout and its significant contributing factors, it is important to examine the prevalence of burnout among medical students. Burnout must be tackled at the medical student level to help ensure more resilient future physicians. It is in medical school where mental health stigma can be reduced and self-assessment skills can be instilled.

A study by Eckleberry-Hunt et al. determined that medical school burnout typically entails stress, distress, or emotional exhaustion from course curriculum (2017). This diverges from physician burnout, which relates to the practice of medicine and attendant factors. Medical students do not have significant patient interaction until their third year; while this is slowly changing, even then, students are not fully immersed in the physician work environment. Nonetheless, the prevalence of burnout among medical students ranges from 28-55%, closely mirroring pre-pandemic physician burnout rates (Lapinski et al., 2016; Eckleberry-Hunt et al., 2017). Compared to four-year college graduates, medical students exhibited significantly higher rates of emotional exhaustion and depersonalization, indicating that burnout begins and worsens during medical school (Eckleberry-Hunt et al., 2017). However, misinterpretation of measurements in years one and two have led to inaccurate conclusions, as burnout is not related to patient care in years one and two of medical school because clinical care typically does not occur until years three and four (Eckleberry-Hunt et al., 2017). “[I]ncreases in burnout related to patient care measures would be expected to increase in years 3 and 4 given that these are the years when medical students actually see patients” (Eckleberry-Hunt et al., 2017, p. 8). This

indicates that additional research is needed to develop more accurate conclusions about the underlying factors of burnout in the first years of medical school.

The study by Eckleberry-Hunt et al. does correlate burnout among medical students to the learning and work environments found within medical schools (2017). The identified environmental causes include: exposure to patient suffering and death; the experience of mistreatment by and poor relationships with professors, supervisors, and colleagues; and hospital rotations with overnight calls and sleep deprivation (Eckleberry-Hunt et al., 2017). When considering the Patel et al. study in light of these findings by Eckleberry-Hunt et al., the practice and organizational factors that contribute to physician burnout factors clearly creep into medical education as students prepare to enter the profession. It also becomes apparent that burnout is aggregative, beginning in medical school. These insights are crucial because, although the specifics of physician burnout factors differ in significant ways from those impacting medical student burnout, the overarching categorizations of burnout (i.e., personal, work, and organization factors) are present and become increasingly similar throughout medical school.

With regard to medical school culture, which sets the stage for professional peer relations, medical student mentoring and treatment by elders in the profession have an important impact. Eckleberry-Hunt et al. (2017) reference a national 2009 study of medical student burnout, which found that there was burnout variability among pre-clinical and clinical students. For example, Year 1 and Year 2 students' dissatisfaction resulted from the learning environment and perceived level of support; in contrast, Year 3 and Year 4 students' dissatisfaction stemmed from poor faculty and staff relations (Dyrbye et al., 2009). This study provides support for optimizing learning environments and changing culture (Dyrbye et al., 2009).

A somewhat related relational source of burnout includes educational mistreatment, with 83% of participating students reporting having had at least 1 experience of ill-treatment by a superior (Cook et al., 2014; Eckleberry-Hunt et al., 2017). Mistreatment includes public humiliation, physical and/or verbal harassment, and other types of abuse (Mavis et al., 2014; Eckleberry-Hunt et al., 2017). In a study by Daniel George and Michael Green, a creative expression experiment was utilized to better understand the emotions and clinical experiences of medical students. They found that nearly 50% of medical students drew mentors and professors with horror-genre imagery (George & Green, 2015). Usually, students represented themselves as the victims, which is not surprising given high rates of mistreatment (George & Green, 2015). Offering unique insights into the thoughts of medical students, the comics-style drawings that resulted "make a strong argument that the medical profession should do more to help students develop into the kinds of physicians they want to become" (George & Green, 2015, p. 2345).

Work-life balance issues also begin in medical school, and such factors also contribute to burnout for both medical students and practicing physicians (Glasheen et al., 2011; Eckleberry-Hunt et al., 2017). In medical school, high stress levels were associated with long study hours, examinations, high student debt load, and relationship difficulties (Eckleberry-Hunt et al., 2017). In a study by Lapinski et al., medical student behavioral and personal variables were linked with burnout (2016). Examples of behavioral and personal variables include lack of sleep, intensive study, physical activity, social support, resilience, and interpersonal relationships (Lapinski et al., 2016; Wolf & Rosenstock, 2016). These variables can influence both medical student and physician burnout (Patel et al., 2018). The overlapping variables of influence demonstrate the necessity of work-life balance interventions.

The burnout phenomenon is not the sole province of practicing medical providers, as a high prevalence of burnout exists among medical students. And, although burnout causes differ between first- and second-year medical students and third- and fourth-year medical students, medical student burnout is closely linked to physician burnout. Moreover, as students progress through medical school in preparation to enter the profession, organizational factors begin to reflect those present in practice and start taking a toll.

Chapter 5

The Consequences of Burnout

The consequences of burnout are far reaching—extending beyond the individual. They include economic and societal costs borne by all. A pre-pandemic study determined that physician burnout costs the U.S. health care industry $4.6 billion a year (Han et al., 2019). This figure only captures the costs associated with physician burnout; it does not consider the costs affiliated with the burnout of nurses and other health care workers. Thus, the true economic cost of health care professional burnout is much greater. Nonetheless, the tremendous economic cost of physician burnout, itself, is deeply concerning. But this dollar figure, alone, fails to capture non-monetized consequences that extend to individuals, including physicians, patients, family members, and society.

Patient-Level Costs

Physician burnout negatively impacts the quality of patient care and overall patient experience. For example, the widespread effects of physician burnout include "decreased patient satisfaction with care in both hospital, and outpatient settings, worse attitudes toward and poorer communication with patients, and increased medical errors" (Grow et al., 2019, p. 1). From increased medical errors to poorer patient outcomes, physicians suffering from burnout are professional hazards (Patel et al., 2018). Patel (2018), Grow (2019), and their respective colleagues demonstrate physician burnout is directly linked to significant decreases in patient care and overall health care quality. Given the pervasiveness of physician burnout, these reductions in care quality are not *de minimus*.

At present, with four out of five physicians experiencing burnout (Medical Economics, 2021), a patient is nearly certain to be cared for by an impaired physician. Prior to the pandemic, nearly 100,000 people died each year in the United States due to medical error, which costs health care systems more than $20 billion per annum (Rodziewicz et al., 2022). With pandemic-induced burnout nearly pervasive, even health care professions are sounding the alarm about the impact on patient care (Institute for Safe Medication Practices, 2020). The extent of patient error during these pandemic days may never be known, as "few medication errors involving COVID-19 patients were being reported, given a significant and understandable lack of time, as well as a fear of retribution" (Institute for Safe Medication Practices, 2020, para. 1).

Physician-Level Costs

The impacts of physician burnout extend beyond patients and the quality of care provided. It goes without saying that physicians are greatly impacted by burnout as they are the ones who must grapple with experiences of emotional exhaustion, depersonalization in their professional relationships, and a decreased sense of personal accomplishment. In the pre-pandemic study by Patel et al., physicians self-reported an emotional exhaustion rate of up to 60% (2018). Burnout impacts "cognitive performance and contributes to increased medical errors; this in turn can lead to a downward spiral of decreased satisfaction, increase suffering, and lower performance. Burnout is also associated with increased drug and alcohol use," as well as "higher fast-food consumption, less exercise, and more frequent use of medications for pain. Residents with burnout have also reported higher rates of motor vehicle crashes" (Grow et al., 2019, p. 3).

Burnout also has serious ramifications for home life, personal relationships, and the loved ones of physicians. Spouses of burnout victims experienced increased isolation and less emotional satisfaction (American Medical Association, 2018). These consequences of burnout can significantly strain marriages and parent-child relationships (American Medical Association, 2018).

Because burnout can also severely impact the physician in the workplace, the physician may be subject to investigation by peer review committees, lawsuits, and even licensure actions (Grow et al., 2019). These sequelae trigger medical malpractice stress syndrome (MMSS), which is described as the "traumatic experience that physicians go through after being sued for malpractice" (Reyes & Reyes, 2017, p .19). Those "with MMSS experience feelings of isolation, negative self-image, feelings of helplessness and hopelessness, and depression" (Reyes & Reyes, 2017, p. 19).

Economic Costs

Prior to the pandemic, physician burnout cost the U.S. health care industry nearly $4.6 billion a year (Han et al., 2019). For example, the average estimated cost of replacing a single physician ranges from $500,000 to $1 million, and this does not account for expenses relating to medical malpractice, care needed to remediate poor patient outcomes, or patient defection due to dissatisfaction (Grow et al., 2019). Expanding the time horizon beyond a year, Eckleberry-Hunt et al. calculated "a future loss of $185.2 million due to early retirement and $27.9 million due to reduced patient care" (2017, p. 19; Dewa et al., 2014). In late 2021, a Medical Group Management Association (MGMA) poll found that 33% of medical practices experienced early

physician retirements, as well as attrition specifically due to burnout (Medical Group Management Association, 2021). Moreover, the same poll reported that nearly half (i.e., 46%) of physicians considered leaving their current role or retiring early (Medical Group Management Association, 2021). Therefore, the economic costs of physician burnout will not be alleviated in the near future, and a solution must be found to mitigate burnout.

Chapter 6

Medical Student Burnout

According to the Association of American Medical Colleges (AAMC), nearly 15-20% of students drop out of medical programs (AAMC, 2021a). Medical student burnout leading to dropout has significant economic impacts at the personal and societal levels. In fiscal year 2020, support for the 142 fully accredited U.S. medical schools totaled $155.3 billion (AAMC, 2021b). This funding is provided through a mix of federal appropriations, state and local subsidies, and parent-university support. If even a small portion of such funding is utilized by students who ultimately dropout, these funds do not go toward meeting their purpose of minting new physicians to serve the public need.

Between 1993 and 2013, more medical students left medical school for nonacademic reasons than academic reasons (AAMC, 2021a). A 10-year, retrospective study analyzing factors associated with medical student burnout found that, in general, the dropout phenomena is multifactorial and includes: academic struggles; absenteeism; leaves of absence; social isolation; depression and psychological morbidity—a main indicator of emotional exhaustion; and decreased empathy (Brazeau et al., 2010; Maher et al., 2013; Eckleberry-Hunt et al., 2017). Decreased empathy is a personal consequence of burnout and is associated with the key indicator of depersonalization. Depersonalization, in turn, can manifest in poor patient outcomes and malpractice (Eckleberry-Hunt et al., 2017).

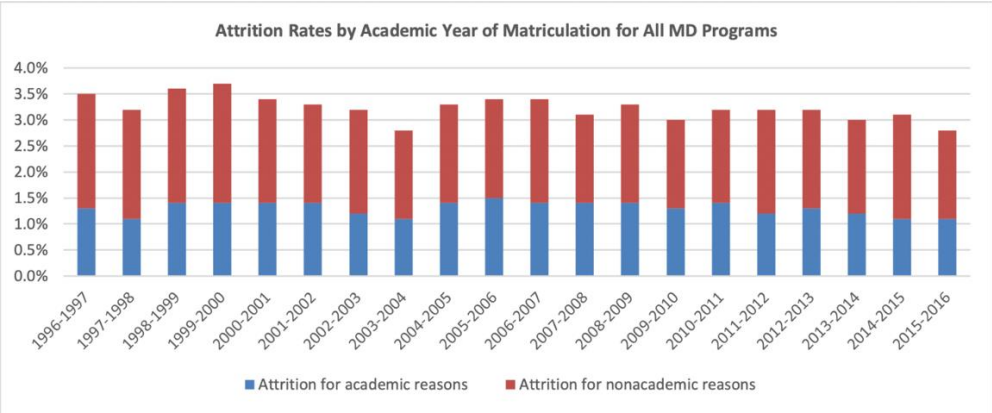

Figure 2. Attrition Rates by Academic Year

Graph obtained from (AAMC, 2021a)

To address the phenomena, Maher et al. recommend that medical schools' student welfare services institute and promote early identification and early intervention protocols to ensure students receive needed supports (2013). Part and parcel of these protocols requires altering attitudes toward mental health conditions and care. As with practicing physicians, medical students experiencing burnout symptoms similarly fail to seek help due to fear of discrimination (Dyrbye et al., 2015; Eckleberry-Hunt et al., 2017). Such maladaptive coping strategies can, in turn, lead to a higher prevalence of future burnout and/or dropout.

Comparing Medical Student and Physician Burnout

Medical student burnout and physician burnout differ, with physician burnout posing serious and durational impacts on patients, the health care system, the economy, and society—as well as on the physician and their loved ones. Nevertheless, medical student burnout can be a precursor of and contribute to future physician burnout. As a result, burnout must be identified

and addressed at the student level while in medical school. In the process, attitudes toward mental health must be altered, medical culture and organizational factors must be changed, and assistance must be made easily available. Moreover, the medical school curriculum must be adapted to: make students aware of the dangers and prevalence of professional burnout and its causal factors, help students self-identify burnout early on, empower students to seek assistance, and aid students in developing both mechanisms for coping and for creating change in the professional culture and organizations in which they will practice.

Chapter 7

Ethical Arguments

The origins of physician burnout, first manifesting in medical school, offer an ideal target for addressing the costly and dangerous phenomenon. Medical student mental health and empowerment can be bolstered by alleviating burnout in medical school and providing medical students with the resources and tools to self-monitor, seek assistance, cope, and create change. This enables professionals to enter the stressful field of medicine in a strong position. This should not only normalize physicians seeking needed support and care throughout their careers, but also enhance physician retention and performance in terms of quality of care and patient satisfaction. These results would enhance public well-being by reducing costs through decreased medical error and improved patient outcomes. Moreover, public investment would be protected and health care expenditures would be curtailed by reducing costs connected with physician attrition. Overall efficiencies would be achieved by preserving physician human resources and reducing systemic waste. Such outcomes make clear that tackling burnout at the medical school level offers great potential for raising overall utility.

Implementation will require time, money, and effort to overcome the status quo, change entrenched attitudes, and create true change in the current medical school system. Traditionally, people are not receptive to change, as they are comfortable with the way that things have always been done because it is a known commodity. Yet, burnout is a chronic and urgent public health crisis, and the status quo is unethical. Two ethical theories will be used to justify and support the needed changes: utilitarianism and ethics of care.

Utilitarianism

Utilitarianism is the most prominent consequentialist ethical theory, which "concentrates on the value of well-being" (Beauchamp & Childress, 2019, p. 354). As such, it assesses the morality of action "according to the balance of good and bad consequences" (Beauchamp & Childress, 2019, p. 354). Utilitarianism emphasizes one basic principle of ethics: maximizing net utility (Beauchamp & Childress, 2019). Utility is measured in terms of pleasure, happiness, welfare, and preference satisfaction (Beauchamp & Childress, 2019). Thus, maximizing net utility requires "that we ought always to produce the maximal balance of positive value over disvalue – or the least possible disvalue" (Beauchamp & Childress, 2019, p. 355). In other words, this means achieving the greatest good.

Nonetheless, a discussion of higher and lower order happiness is necessary in order to further understand and quantify how to achieve the greatest good and maximize net utility. Benjamin Gibbs explains higher order pleasures as "intellect, the feelings and imagination, and the moral sentiments" (Gibbs, 1986, p. 31). Comparatively, lower order pleasures are physical, such as sex or food (Gibbs, 1986). Gibbs argues that higher order pleasure is superior and more desirable than lower order pleasure (Gibbs, 1986). Thus, higher order pleasures should always be sought over lower order pleasures, as they provide longer lasting satisfaction (Gibbs, 1986).

With regard to burnout, the significance of higher order pain and mental distress is concerning based on Gibb's work on pleasure and pain. Burnout is characterized by emotional exhaustion and decreased personal accomplishment. In other words, burnout constitutes higher order pain—indicating complete lack of balance and utility.

There are two accepted approaches to maximizing net utility under this theory: rule utilitarian and act utilitarian. Under rule utilitarianism, "particular acts and judgments are

morally justified by impartially formulated rules that maximize value in a society that adopts them" (Beauchamp & Childress, 2019, p. 357). On the other hand, act utilitarian is rule-less and "justifies actions by appealing directly to the principle of utility" (Beauchamp & Childress, 2019, p. 357). Both approaches, at their core, have the ultimate goal of achieving the greater good.

Utilitarianism and Burnout

From an ethical standpoint, utilitarianism is the proper tool for considering the need to address physician burnout because it impacts health care in terms of access to physicians, quality of care, and the costs of care. While medical school is beginning to scratch the surface of public health, contemporary health challenges, such as pandemics, provide strong support for a greater medical education emphasis on public well-being.

In 1910, the *Flexner Report* upended medical education in the United States (Duffy, 2011). By enacting higher standards for admissions and limiting the number of medical schools, the report set a precedent for slow medical education growth throughout the United States (Duffy, 2011). This approach to improving the quality of both physicians and the care they provide, over the long term, has resulted in too few physicians. Thus, with a limited quantity of trained physicians, the implications of burnout have an even greater effect on the health care system and the public.

In 2033, the AAMC predicts that the United States will face a physician shortage of between 54,100 and 139,000 (Doyle, 2020). AAMC President and CEO David J. Skorton says that "the increasing physician shortage over the last two decades, and now the COVID-19 pandemic . . . demonstrate[s] that we need to increase the number of physicians to ensure we can

care for patients in the near-term and in the future" (Doyle, 2020, para. 3). Doyle states an aging population and an increase in retiring physicians are two leading contributors to the shortage (Doyle, 2020). With increasing early retirement (Doyle, 2020), the second factor will only intensify the shortage, especially as an aging population heightens the demand for care. Furthermore, one can extrapolate how these shortages will be exacerbated by increases in physician burnout following the pandemic—especially when faced with growing demands for their time and attention. Thus, addressing physician burnout is essential to maximizing net utility at the physician level and beyond.

Ethics of Care

The ethics of care originated in the feminist writings of Psychologist Carol Gilligan (Beauchamp & Childress, 2019). In her studies, she found that women "display an ethic of care, by contrast to men, who predominantly exhibit an ethics of rights" (Beauchamp & Childress, 2019, p. 35). Gilligan attributed the empathetic orientation of women to a strong sense of responsibility to and for others (Beauchamp & Childress, 2019). She defined the ethics of care as "a responsiveness in an interconnected network of needs, care, and prevention of harm" (Beauchamp & Childress, 2019, p. 35). Care ethicist Mercer Gary adds to the field of care ethics, explaining that "[c]are ethics begins with actual caring practices and offers a normative analysis of the values emerging from them[,] . . . recogniz[ing] emotional and affective capacities as ethically relevant" (Gary, 2020, p. 16). As such, the ethics of care is a theory that applies to health care workers and their relationships with patients.

Ethics of Care and Burnout

Specifically, “the ethics of care emphasizes what physicians do and how they perform those actions, which motives and feelings underlie them, and whether their actions promote or thwart positive relationships” (Beauchamp & Childress, 2019, p. 35). As many health care relationships involve vulnerable and ill individuals seeking mental and emotional support in their role as the patient, physician empathy is a “vital aspect of a moral relationship with [such patients]” (Beauchamp & Childress, 2019, p. 36). Beauchamp and Childress further argue that providing empathetic care is non-negotiable and embedded in professional ethics codes, including the Hippocratic Oath, for that reason (Beauchamp & Childress, 2019). Empathy is defined as “the ability to understand another individual’s mental state in terms of emotions, feelings and thoughts” (Guadagni et al., 2020, p. 2). Thus, empathy and depersonalization cannot co-exist.

In burnout, depersonalization supplants empathy in the physician-patient relationship and leads to moral detachment by the physician with regard to the patient. This, in turn, gives rise to a lack of care (Beauchamp & Childress, 2019). Thus, the “social attachment that fosters good care” (Gary, 2020, p. 8) is absent, and care, satisfaction, and connection all suffer.

Chapter 8

Proposed Solutions and Ethics

It is essential to empower medical students with the tools to recognize burnout and associated behaviors in themselves and in their peers. This promotes assistance seeking. It also creates strategies for managing and avoiding burnout and its associated costs to individual physicians, patients, the health care system, and society. Thus, burnout's harms can be minimized, and positive net value can be maximized. This, however, requires alteration of the medical education system and changes in how mental health is viewed in the profession—including in training.

The first steps are eradicating the stigma of mental health concerns among medical students and ensuring that seeking help is normalized (Dyrbye et al., 2015; Eckleberry-Hunt et al., 2017). Absent these changes, the stigma, fear, reticence, and maladaptive coping mechanisms adopted in lieu of psychological care will follow medical students as physicians into practice. The next step must be instilling personal wellness and self-care tools in the medical school curriculum. Research indicates that wellness education, mindfulness programs, and small group, facilitated discussions can mitigate burnout (Eckleberry-Hunt et al., 2017; Jackson et al., 2016).

Currently, mental health and well-being are approached in two ways at medical schools: (1) post hoc, therapy-oriented services for students who develop disorders or distress; or (2) wellness activities to counteract the medical school environment (Slavin et al., 2014). Slavin et al. argue that the current approach does not create resilient physicians (2014). As an effective alternative, Slavin and colleagues highlight a case study of Saint Louis University College of Medicine, which focuses on a novel and integrated program for improving medical student mental health (2014). In reviewing this program, the team found:

[s]ignificant but efficient changes to course content, contact hours, scheduling, grading, electives, learning communities, and required resilience/mindfulness experiences were associated with significantly lower levels of depression symptoms, anxiety symptoms, and stress, and significantly higher levels of community cohesion, in medical students who participated in the expanded wellness program compared with those who preceded its implementation (2014, p. 1).

	MS-1 orientation			MS-1 end of year				MS-2 end of year			
Class	Depress, %	Anx, %	Stress, M (SD)	Depress, %	Anx, %	Stress, M (SD)	Coh, M (SD)	Depress, %	Anx, %	Stress, M (SD)	Coh, M (SD)
2011 and 2012	6	30	10.2 (5.2)	27	55	16.3 (7.4)	7.9 (2.1)	32	60	16.9 (7.3)	7.7 (2.0)
2013	4	26	9.8 (5.7)	21	45	14.9 (6.7)	8.1 (1.7)	17[b]	61	14.4 (5.8)[b]	8.2 (1.6)[b]
2014	6	28	11.0 (5.8)	18	31[b]	13.0 (6.8)[b]	8.5 (2.1)[b]	18[b]	39[b]	13.9 (6.4)[b]	8.5 (2.2)[b]
2015	5	22	10.2 (5.5)	11[b]	31[b]	12.1 (6.1)[b]	8.8 (1.8)[b]	16[b]	46[b]	13.5 (6.8)[b]	8.1 (2.0)[b]
P value	.67	.30	.20	.001	< .001	< .001	< .001	< .001	< .001	< .001	.002
Effect size	.04[c]	.07[c]	.01[d]	.16[c]	.23[c]	.06[d]	.03[d]	.18[c]	.18[c]	.05[d]	.02[d]

Abbreviations: MS-1 indicates medical school year 1; MS-2, medical school year 2; Depress, moderate to severe depression symptoms; Anx, moderate to high anxiety symptoms; Stress, stress score; M, mean; SD, standard deviation; Coh, cohesion score.
[a]The authors carried out a multiyear, quasi-experimental study at one medical school comparing depression, anxiety, stress, and cohesion scores between multiple medical school classes before a curricular change initiative and after the curricular change initiative.
[b]Value (percentage or mean) is significantly different ($P < .05$; standardized residual for percentages; Tukey for means) from prechange classes value.
[c]Effect size for percentages (chi-square test of association) is Cramer *V*, which is interpreted as a correlation coefficient.
[d]Effect size for means (ANOVA) is partial eta-squared, which is a percentage of variance indicator.

Figure 3. Comparison of Medical Student Stress Scores from the St. Louis University College of Medicine

Graph obtained from (Slavin et al., 2014)

In the table above by Slavin et al., it is clear that, at the end of years one and two, the new curriculum demonstrated lower rates of moderate-to-severe depression symptoms among students (2014). Anxiety and stress followed the same pattern of improvement (Slavin et al., 2014). Group-cohesion scores also increased compared to group cohesion under the previous curriculum (Slavin et al., 2014). Finally, the new program resulted in increased respect for students, development of student well-being, and a genuine change in culture regarding mental health (Slavin et al., 2014). These outcomes establish that intentional integration of mental health

wellness into the medical education curriculum is effective at reducing the early onset of emotional exhaustion among medical students. These results also point to an evidence-based solution that has proven effective, at least in the short-term, at a cost of less than $10,000 (Slavin et al., 2014).

A subsequent study of students exposed to this intervention is needed. Specifically, graduates of the revised curriculum should be studied longitudinally throughout their careers as practicing physicians to determine the long-term effectiveness of the curriculum in reducing physician burnout. While a longitudinal study is conducted, however, the program should be widely adopted by medical schools based on the substantial wellness benefits—even if only short term—that inured to exposed students due to the minimal cost of the interventions. Any long-term reductions in burnout would further support such broad adoption and may provide insights into how the program could be altered or augmented to further maximize net utility.

The AMA has also analyzed medical student well-being, and, as a result, has set forth the following eight "STEPS" to minimize burnout and improve mental health among medical students:

1. Recognize shared responsibility
2. Measure student well-being
3. Optimize the curriculum
4. Help control medical student debt
5. Optimize the learning environment and cultivate community
6. Promote self-care and resiliency
7. Provide adequate services for those already affected
8. Fund organizational science around well-being (Dyrbye, 2019)

These “STEPS” validate and dovetail with the research of Slavin et al. as there are numerous overlaps. Therefore, Dyrbye’s STEPS bolster support for implementation of the Saint Louis University College of Medicine program in medical schools, nationwide.

Chapter 9

Net Utility of Proposed Solutions

Given the widespread impacts of physician burnout, there are three primary stakeholder aspects to contemplate when considering net utility on a long-term basis: (1) patient-level utility, (2) physician-level utility, and (3) economic/organization/societal-level utility. Thus, it is necessary to evaluate and compare these positions and their costs and benefits in order to establish an accurate measurement of overall net utility.

Physician-Level Utility

Slavin et al. demonstrated the positive mental health and well-being effects that the curriculum change instituted by Saint Louis University College of Medicine had on students by halving depression, anxiety, and stress levels (2014). This curricular revision is supported by other research finding that medicine's professional culture must be altered to mitigate burnout and promote physician wellness (Reis, 2018). The development of new medical school curriculum that meaningfully incorporates resilience skills for coping with stress, emphasizes team-based learning and support, and focuses on student well-being is critical to changing the overarching culture of medicine at the point where students are first exposed to and indoctrinated in their profession's value system and operation (Slavin et al., 2014). As a result, there is significant utility experienced at the medical-student level, and this utility can be expected, at the very least, to inure to students once they enter the professional ranks as residents, becoming physicians with more reserves. Moreover, these medical students will become physicians who have, at least, been exposed to healthy coping strategies to counteract emotional exhaustion.

There is, however, one tradeoff inherent in this scenario: victim blaming. The push for resilience and training is comparable to victim blaming; in other words, saying the physician is at fault. Individual-based interventions can help to promote positive attitudes and decrease depersonalization (Carrau & Janis, 2021). Yet, individual-based interventions can be characterized as misguided and victim-blaming (Carrau & Janis, 2021). Research shows that burnout is a result of the environment, not the physician, so the emphasis of organization-directed interventions must be used in conjunction (Carrau & Janis, 2021).

The proposed curriculum change would take minimal time to incorporate, as a template has already been designed and tested, and it would not significantly decrease other aspects of the academic curriculum. Curriculum change is organization-based, so this approach avoids blaming the victim; however, individual-based support is still foundational to the approach in the short-term to alleviate and prevent burnout symptoms.

Patient-Level Utility

Like physicians, patients have the potential to gain substantially from increases in net utility emanating from medical school interventions oriented toward well-being. Entering practice with greater reserves, these newly minted resident physicians promise to provide higher quality, safer care, at least in the short term (Eckleberry-Hunt et al., 2017; Sikka et al., 2015). They also have the capacity to engage with patients and other members of the care team more successfully and, in the process, create greater patient satisfaction (Patel et al., 2018). Taken together, even if only effective in the short term, these benefits create positive net utility for patients.

Economic and Organizational Utility

Finally, altering course curriculum and changing medical school culture portends economic, organizational, and societal advantages—even if short lived. By creating professionals with greater well-being baselines, the economy, health care organizations, and society benefit by enjoying the skills of medical professionals who can operate at more effective levels for longer timeframes—even if such efficacy and durations are only marginally extended. Even minimal increases in care quality, patient outcomes, patient satisfaction, and physician retention should partially blunt the economic costs associated with physician burnout. Moreover, these benefits, even if limited in scope and duration, are gained at minimal cost.

Chapter 10

Limitations and Future Studies

The study by Slavin et al. (2014) demonstrates the net utility of a curriculum change that tackles medical school burnout; however, the study's impact is limited to medical students. It does not track these students during residency or into practice to assess the effectiveness of the circular modifications on future physician burnout. In addition, the study emphasized stress in relation to school (Slavin et al., 2014). It lacked sufficient data on patient interaction and clinical care, so future studies are needed to establish more direct connections to burnout factors.

Future prospective studies should examine whether the curriculum modifications impact future burnout. This prospective cohort study would follow a group of medical graduates who were trained under the Saint Louis University College of Medicine's well-being program into their careers as practicing physicians. Prospective study design provides the ability to:

- gather data regarding sequence of events (i.e., the medical training the students underwent and the potential event of physician burnout);
- assess causality (i.e., the impact of the new curriculum on burnout);
- examine multiple outcomes for a given treatment (i.e., burnout or continued well-being);
- investigate rare exposures (i.e., comparing the status of the small number of physicians exposed to the Saint Louis University College of Medicine model to other physicians); and
- calculate rates of disease (i.e., burnout) in exposed and unexposed individuals over time (e.g., incidence, relative risk of burnout) (Song & Chung, 2011).

Nonetheless, such studies require a significant and continued investment of time, funding, and follow-up efforts (i.e., tracking) (Song & Chung, 2011).

It is, nevertheless, clear that a prospective study is necessary in this instance, so that researchers can calculate rates of burnout among curriculum-change-exposed physicians and physicians who were not exposed to the new curriculum over time. Thereby, causality can be determined, and the relative risk of burnout can be assessed to bolster support for curriculum adoption and refinement.

Finally, a limitation of this thesis is its scope. Within this thesis, only medical school interventions are proposed and offered as a solution to reduce medical student burnout, as well as physician burnout. The AMA's "STEPS" offer insights that extend beyond medical school. One step is to promote self-care and resilience (Dyrbye, 2019), which could be achieved in part by ongoing continuing education requirements focused on physician wellness.

Chapter 11

Conclusion

Physician burnout is a public health crisis that devastates physicians, undermines patient care, and robs society of high-quality care and health care resources. The magnitude of this crisis has been exponentially escalated by the ongoing coronavirus pandemic. Thus, instituting specific, evidence-based, low-cost medical school curriculum that leads to more resilient future physicians and cultural changes in the medical profession is ethically imperative and supported by utilitarianism and ethics of care. While the model for this curriculum, based on that created by Saint Louis University College of Medicine, lacks longitudinal results at present, it has been proven, in the short term, to enable students to cope with medical school stresses and enter the profession in a stronger position than they would have without such educational interventions. And it does so at a minimal cost. Taking the student benefit and low program cost together, it is evident that the revised curriculum generates positive net utility. Further study is needed to determine whether these wellness-oriented interventions have lasting effects that positively impact physician burnout across the career trajectory. Such studies may provide insight into how to refine and strengthen this curriculum in ways that further maximize net utility and enhance physician performance in the role of empathetic caregivers.

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ACADEMIC VITA

BLAKE GREENSPAN

beg5202@psu.edu

EDUCATION

The Pennsylvania State University | Schreyer Honors College — **University Park, PA**
Eberly College of Science | B.S. in Pre-Medicine | Minor in Bioethics — *Expected Graduation: May 2022*
GPA: *.**/4.00

LEADERSHIP AND INVOLVEMENT

Remote Area Medicine — **University Park, PA**
Active Member and Social Media Team — *Aug 2018 – Present*
- Providing free healthcare and delivering free dental, vision, and medical care to under-served individuals.
- Planning, fundraising, and coordinating new clinics in the PA, and increasing access to medicine.
- Establishing the local chapter of RAM and maintaining the website and other social media.

Scholar Ambassador / Schreyer Honors Orientation — **University Park, PA**
Director of Recruitment — *Jan 2019 – Present*
- Collaborated with over 80 scholars through different activities related to arrival, academics, communications, and logistics over the span of a month to create an efficient and timely move-in for incoming freshmen
- Selected to endorse the honors college by offering insight on scheduling, research experiences, college experiences, Penn State culture, and extracurricular opportunities to better learn about the college.

Penn State Eberly Learning Assistant — **University Park, PA**
Biology/Chemistry — *Dec 2019 – Present*
- Collaborating with professors to assist and engage students with their studies in the course.
- Facilitating guided study session in person and via zoom and being flexible with change.

Resident Assistant — **University Park, PA**
Simmons Hall — *Jul 2020 – Present*
- Working to foster a strong community in the residence hall via community builders and constant interactions.
- Promoting and displaying safe health practices during pandemic while fostering student engagement.

Naaman's Creek Manor — **Boothwyn, PA**
Volunteer — *May 2016 – May 2020*
- Spending time speaking with and getting to know the residents of a nursing home in order to help brighten their days.
- Helped residents get involved in daily activities offered at the site.

English Citizenship Class — **Kennett Square, PA**
Volunteer — *Feb 2017 – Jan 2019*
- Worked at a local mushroom farm, helping immigrants to learn English and prepare for their U.S. citizenship exam.
- Created lesson plans and worked one-on-one, taking individuals to the final stages of their citizenship journey.

WORK EXPERIENCE

Padula Media — **West Chester, PA**
Vice President of Business Development — *Jul 2017 – Aug 2018*
- Engaged in a local multimedia and marketing start-up with a friend from high school
- Presented, promoted, and sold various products/services using solid arguments to existing and prospective customers by actively building client relationships

Longwood Gardens — **Kennett Square, PA**
Bartender — *May 2018 – Present*
- Working as a bartender to help reduce the costs of college, communicating with customers and better understanding the customer service industry.

HONORS, SKILLS, AND INTERESTS

Honors: Schreyer Honors College Academic Excellence Scholarship, Honors Thesis and Capstone, President's Freshman Award, President's Sparks Award, Student Engagement Scholarship Recipient, Kenya/Tanzania Study Abroad, Longwood Rotary Youth Leadership Award, Youth Leadership Award Chester County, Congressional Scholar Athlete Award, National Honors Society, and Spanish Honors Society.
Skills: Leadership, Communication, Research Certified, Specialtist in Gel Electrophoresis, and Microsoft Office.
Interests: Volleyball, Traveling, Sailing/Kayaking, Language, Skiing, Stand-up Comedy, Xbox, and Experiencing Nature.