Addressing Health Worker Burnout

The U.S. Surgeon General's Advisory
on Building a Thriving Health Workforce

2022

Table of Contents

Introduction from the Surgeon General

Years ago, when I was training to be a physician, the older, more experienced doctors passed down a morsel of wisdom to those of us who were just beginning our careers: "Never stand when you can sit. Never sit when you can lay down. And never stay awake when you can sleep." They knew then what we would come to discover: that health workers, across clinical and community settings, whether caring for patients or managing a public health crisis, have long faced difficult, irregular hours in challenging, and extraordinarily stressful, working environments.

That so many health workers have been able to persevere and perform despite those conditions is a testament to our training, our teammates, and the ideals that have called us to serve. But day after day spent stretched too thin, fighting against ever increasing administrative requirements, and without the resources to provide our patients and communities with the care they need, drove many nurses, doctors, community health workers, and public health staff to the brink. Then came COVID-19. The pandemic has accelerated the mental health and burnout crisis that is now affecting not only health workers, but the communities they serve.

During the pandemic, each shift and overtime hour for a health worker often meant putting their own health and their family's health at risk in order to heal, comfort, and protect others. Fear, loneliness, and uncertainty were pervasive. The threat of targeted harassment and violence underscored many interactions. Some health workers were forced to wall themselves off from their loved ones. And too many served as the final comfort for patients walled off from theirs. COVID-19 has been a fully and uniquely traumatic experience for the health workforce, and for their families.

The initial reaction to the unprecedented public health impact of COVID-19, from Italy to New York City, was to recognize and honor the courage of health workers who stepped up in our collective moment of need. But after more than two years, multiple waves of infection, and more than one million precious lives lost in the United States alone, this sense of acknowledgment and gratitude has faded—one more victim of the fatigue and frustration wrought by a prolonged pandemic. Today, when I visit a hospital, clinic, or health department and ask staff how they're doing, many tell me they feel

exhausted, helpless, and heartbroken. They still draw strength from their colleagues and inspiration from their patients, but in quiet whispers they also confess they don't see how the health workforce can continue like this. Something has to change, they say.

They are right. As we transition towards recovery, we have a moral obligation to address the long-standing crisis of burnout, exhaustion, and moral distress across the health community. We owe health workers far more than our gratitude. We owe them an urgent debt of action. This Surgeon General's Advisory helps show what's needed, and how we can do it.

The stakes are high. If we fail to act, we will place our nation's health at increasing risk. Already, Americans are feeling the impact of staffing shortages across the health system in hospitals, primary care clinics, and public health departments. As the burnout and mental health crisis among health workers worsens, this will affect the public's ability to get routine preventive care, emergency care, and medical procedures. It will make it harder for our nation to ensure we are ready for the next public health emergency. Health disparities will worsen as those who have always been marginalized suffer more in a world where care is scarce. Costs will continue to rise. Equally as important, we will send a message to millions of health workers and trainees that their suffering does not matter.

Instead, we can choose to make this moment a collective commitment to care for those who have always cared for us. When health workers look ahead, they should see a future where their dedication isn't taken for granted, and where their health, safety, and well-being is as much a priority as the well-being of the people and communities in their care.

Addressing health worker burnout is about more than health. It's about reflecting the deeper values that we aspire to as a society—values that guide us to look out for one another and to support those who are seeking to do the same. Health workers have had our backs during the most difficult moments of the pandemic. It's time for us to have theirs.

Vivek H. Murthy, M.D., M.B.A.
Vice Admiral, U.S. Public Health Service
Surgeon General of the United States

About the Advisory

A Surgeon General's Advisory is a public statement that calls the American people's attention to an urgent public health issue and provides recommendations for how that issue should be addressed. Advisories are reserved for significant public health challenges that need the American people's immediate awareness.

This Advisory contains steps that different stakeholders can take together to address health worker burnout. It calls for change in the systems, structures, and cultures that shape health care. Given the nature and complexity of the challenges outlined, this Advisory is not intended to be comprehensive in its recommendations.

For this Advisory, we are defining health workers broadly as all the people engaged in work to protect and improve the health of individuals, communities, and populations, including those who assist in operating health care facilities.[1, 2, 3]

For additional background and to read other Surgeon General's Advisories, visit **surgeongeneral.gov**

During the COVID-19 pandemic, thousands of health workers lost their lives. They put their own health and safety at risk so they could heal and comfort others.

This call to action is dedicated to their memory.

Background

Our health depends on the well-being of our health workforce

Even before the COVID-19 pandemic, the National Academy of Medicine found that **burnout** had reached "crisis levels" among the U.S. health workforce, with 35-54% of nurses and physicians and 45-60% of medical students and residents reporting symptoms of burnout.[4] **Burnout** is an occupational syndrome characterized by a high degree of emotional exhaustion and depersonalization (i.e., cynicism), and a low sense of personal accomplishment at work. People in any profession can experience burnout, yet it is especially worrisome among health workers given the potential impacts on our health care system and therefore, our collective health and well-being. Burnout is associated with risk of mental health challenges, such as anxiety and depression—however, burnout is not an individual mental health diagnosis. While addressing burnout may include individual-level support, burnout is a distinct workplace phenomenon that primarily calls for a prioritization of systems-oriented, organizational-level solutions.

Burnout among health workers has harmful consequences for patient care and safety, such as decreased time spent between provider and patient, increased medical errors and hospital-acquired infections among patients, and staffing shortages.[5, 6, 7, 8] In addition, health worker burnout can have costly repercussions for the health care system, with the best estimates linked to the costs of replacing staff. Researchers estimate that annual burnout-related turnover costs are $9 billion for nurses and $2.6 to $6.3 billion for physicians. These estimates do not include turnover among other types of health workers across the continuum of care.[9, 10]

Chronic work-related stress, a precursor to burnout, has been associated with poor physical and mental health outcomes for health workers, including impaired cognitive function, increased risk of heart disease, type 2 diabetes, fertility issues, sleep disruptions and insomnia, isolation, family and relationship conflict, anxiety, depression and increased risk for substance use and misuse.[4, 5, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26]

While data on health worker suicides and linkage to burnout are limited, some researchers have documented that prior to the pandemic, U.S. physicians, particularly women physicians, may be at greater risk for suicide than their counterparts in Europe and Australia.[27] Moreover, a cross-sectional survey of physicians that preceded the COVID-19 pandemic found that one out of 15 had thoughts of taking their own life and were less likely to seek help than their counterparts who did not report suicidal thoughts.[28]

When examining burnout, it is important to note another phenomenon—**moral distress**—which can intersect with burnout. In health care settings, it can manifest when health workers know the best health care decision to make, but feel helpless and unable to act due to limited resources or circumstances beyond their control.[29, 30] Sustained moral distress can lead to **moral injury**, which has been linked to feelings of profound guilt, shame, anger, and other psychological impacts.[31] While education, training, and career experience have been shown to help prepare health workers for morally distressing situations, many may still experience moral injury if additional systems reforms are not implemented.[32, 33] The National Academy of Medicine has previously also called for action on moral distress, in particular additional dialogue, empirical research, effective interventions, as well as interventions to 1) identify factors that mitigate the impacts of moral distress or impair moral strength, and 2) identify and implement organizational and systems changes to prevent moral distress and foster moral strength among health workers.[34]

Figure 1 (next page) includes a larger list of wide-ranging consequences that are associated with health worker burnout.[18] This is not a comprehensive list.

FIGURE 1

Health worker burnout can have many negative consequences

"I can't provide the best care to my patients..."

"I can't get the care I need..."

Health Workers
- Insomnia, heart disease, and diabetes
- Isolation, substance use, anxiety, and depression
- Relationship and interpersonal challenges
- Exhaustion from overwhelming care and empathy

Patients
- Less time with health workers
- Delays in care and diagnosis
- Lower quality of care
- Medical errors

Health Care System
- Health workforce shortages and retention challenges
- Limited services available
- Risk of malpractice and decreased patient satisfaction
- Increased costs

Community and Society
- Erosion of trust
- Worsening population health outcomes
- Increased health disparities
- Lack of preparedness for public health crises

Office *of the* **U.S. Surgeon General**

A system already at a breaking point

Several factors likely contributed to the immense challenges and demands that health workers faced even before the COVID-19 pandemic: a rapidly changing health care environment, where advances in health information and biomedical technology are accompanied by burdensome administrative tasks, requirements, and a complex array of information to synthesize.[4, 35, 36] Meanwhile, decades of underinvestment in public health, widening health disparities, lack of sufficient social investment which results in higher costs and worse health outcomes, and a fragmented health care system have together created an imbalance between work demands and the resources of time and personnel.[37, 38, 39]

Amid the exhaustion and burnout that health workers have long been experiencing, our dependence on a healthy, thriving, robust workforce will only continue to grow. With over half a million registered nurses anticipated to retire by the end of 2022, the U.S. Bureau of Labor Statistics projects the need for 1.1 million new registered nurses across the U.S.[40] A Mercer Health Care Market Analysis report projects a national shortage within five years of more than 3 million low wage health workers, who consist predominantly of women of color and are caregivers within the community, in nursing homes, and are nursing or medical assistants in health care settings.[41, 42] Similarly, according to The National Association of County and City Health Officials (NACCHO), since 2008, the estimated number of local health department full-time equivalents (FTEs) decreased by approximately 16% in 2019.[43] The Association of American Medical Colleges (AAMC) projected in 2020 that physician demand will continue to grow faster than supply, leading to a shortage of between 54,100 and 139,000 physicians by 2033, with the most alarming gaps in primary care and rural communities.[44]

The Association of American Medical Colleges (AAMC) projected in 2020 that physician demand will continue to grow faster than supply, leading to a shortage of between 54,100 and 139,000 physicians by 2033, with the most alarming gaps in primary care and rural communities.[44]

In the future, health workers will care for a population that is growing older and living with multiple and increasingly complex chronic health issues, as well as populations impacted by systemic health inequities.[45] The reasons for this include what some experts term the "U.S. health disadvantage"—the poorer health in the U.S. compared to other wealthy nations.[38, 46] This "disadvantage" in our country, and the

challenges in addressing patients' social determinants of health, not only results in racial, geographic, and socioeconomic disparities in health outcomes, but also has an impact on the prevalence of burnout among health workers, which in turn may impact the quality-of-care patients receive.[47, 48] A 2022 survey of over 1,500 U.S. physicians found that 61% feel they have little to no time and ability to effectively address their patients' social determinants of health, and 83% believe that addressing patients' social determinants of health contributes to physician burnout rates; and 87% want greater time and ability to do so in the future.[49] This gap between health workers' desire to contribute more to their patients' health and social security, and their ability to do so in practice, seeds and compounds their sense of moral distress and burnout.

> A 2022 survey of over 1,500 U.S. physicians found that 61% feel they have little to no time and ability to effectively address their patients' social determinants of health, and 83% believe that addressing patients' social determinants of health contributes to physician burnout rates; and 87% want greater time and ability to do so in the future.[49]

During the pandemic, all of these pressures became magnified and amplified.[50, 51] There are a range of **societal, cultural, structural, and organizational factors** that contribute to burnout among health workers, and examples of these are depicted in **Figure 2**. Where these factors exist, they often amplify one another, which is why the response to burnout and health worker well-being must be multi-pronged. For example, a health worker may find it difficult to spend sufficient time with patients due to their immediate and overwhelming workload, documentation in electronic health records, or prior authorization paperwork for billing purposes. This health worker may also be dealing with the effects of health misinformation, leading to a loss of trust by patients and the community. They may also face barriers to their own access to physical health, mental health, and substance use care.[52, 53]

While personal stressors are important aspects of burnout, addressing the **systems** that health workers operate within—those that include staffing, assigning of tasks, and allocating resources in ways that can create or amplify burden—is critical to preventing and reducing burnout.[54]

Figure 2 (next page) illustrates the many factors contributing to burnout among health workers. This is not a comprehensive list; it is adapted from the National Academy of Medicine.[55]

FIGURE 2

Factors associated with burnout among health workers

Societal and Cultural

- Politicization of science and public health
- Structural racism and health inequities
- Health misinformation
- Mental health stigma
- Unrealistic expectations of health workers

Health Care System

- Limitations from national and state regulation
- Misaligned reimbursement policies
- Burdensome administrative paperwork
- Poor care coordination
- Lack of human-centered technology

Organizational

- Lack of leadership support
- Disconnect between values and key decisions
- Excessive workload and work hours
- Biased and discriminatory structures and practices
- Barriers to mental health and substance use care

Workplace and Learning Environment

- Limited flexibility, autonomy, and voice
- Lack of culture of collaboration and vulnerability
- Limited time with patients and colleagues
- Absence of focus on health worker well-being
- Harassment, violence, and discrimination

"This is beyond my control..."

Office *of the* **U.S. Surgeon General**

The effects of the COVID-19 pandemic on our health workforce

The pandemic not only intensified work demands and long working hours, it added new challenges in unprecedented ways. Early in the pandemic, health workers across public health, laboratory, and clinical settings worked rapidly to understand, detect, and prevent transmission, provide guidance, and treat patients. Despite early stay-at-home orders and social distancing recommendations, the virus moved quickly, and health workers were overwhelmed by waves of seriously ill patients—more than most systems were prepared for or equipped to handle. Many health workers had to work without adequate personal protective equipment, putting their own health and the health of their families at risk, often working without days off.[56, 57] They treated patients, including their own colleagues, who were sick, frightened, and isolated from their loved ones. As the pandemic became politicized, some faced hostility, threats, and acts of violence often related to misinformation about the virus.[58, 59]

Throughout the pandemic, health workers have reported high rates of stress, frustration, exhaustion, isolation, feeling undervalued, loss of sleep, anxiety, increased risk for substance use, and suicidal ideation.[29, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69] Researchers who conducted a survey from June through September 2020 found that, of more than 1,100 health workers, 93% reported they were experiencing stress, 86% reported anxiety, 76% reported exhaustion and burnout, and 41% reported loneliness.[70] Although there is more research in this area focused on clinicians, researchers are finding high rates of burnout, and mental health challenges such as stress, anxiety and depression, among non-clinical health workers as well, including operations staff in health facilities and public health workers.[71, 72, 73] One study in October 2020 found 49% of health workers, including nursing assistants, medical assistants, social workers, and housekeepers, reported burnout and 38% reported symptoms of anxiety or depression.[72] Notably, this study found that inpatient workers, women and persons of color, nursing and medical assistants, and social workers reported higher levels of stress related to workload and mental health, though importantly, these impacts were mitigated when health workers felt valued.

The mental health impacts of the pandemic also extend to public health workers across state, tribal, local, and territorial governments, with more than 50% of public health workers surveyed early in the pandemic reporting symptoms of at least one mental health condition, including increased levels of post-traumatic stress disorder (PTSD) when compared with rates previously reported among health workers, frontline personnel, and the general population.[73] Many of these impacts on health workers may be felt for years to come.[74]

Like all of us, health workers who are caregivers have faced pandemic-related challenges at home, too, such as caring for children attending school virtually, and keeping relatives or older adults in their care healthy and safe. During the pandemic, a survey of health workers who had children found that 76% reported that they worried about exposing their child or children to COVID-19, and half reported lacking quality time or being unable to be present as a parent or support their children.[70] In a survey of health workers across National Health Service Corps sites in late 2020, half of respondents reported having no childcare assistance, and among them, 75% reported moderate or severe stress in meeting their children's needs.[75]

Many hospitals have been forced to close departments, delay treatment or procedures, and fill vacancies with travel nurses.[76, 77, 78] Health workers and patients have felt the impacts of workforce shortages; among the general U.S. population reporting delayed care for serious problems during the ongoing pandemic, 69% cited nonfinancial access barriers. This included reasons such as being unable to get an appointment, find a physician who would see them, or access the care location.[79] The combination of distressing work environments and increased demands for care during the pandemic has led to record numbers of health workers quitting or reporting that they intend to quit. Among 20,665 respondents surveyed in 2020, approximately 1 in 3 physicians, advanced practice providers (APPs), and nurses surveyed intend to reduce work hours. One in 5 physicians and 2 in 5 nurses intend to leave their practice altogether.[57]

In this same survey, by the end of the first year of the pandemic, 1 out of 3 health workers surveyed said they considered leaving their jobs. In September 2021, among over 100,000 health workers, nurses younger than age 35 who had been at their current employer for less than a year were most likely to report that they would leave voluntarily.[80] Among nurses surveyed by the American Association of Critical-Care Nurses (AACN) at this same time, 92% reported that the pandemic "depleted nurses at their hospitals and cut careers short."[81] In the same study, 66% of nurses reported that they considered resigning because of COVID-19 experiences. According to the U.S. Department of Labor, nursing homes have reported a loss of 15% of their total workforce after two years of the pandemic.[82]

Finally, workplace violence for health workers had been increasing even before the pandemic.[58] Since the beginning of the pandemic, they have faced additional threats, harassment, and acts of violence.[83, 84]

Among 26,174 state, tribal, local, and territorial public health workers surveyed during March-April 2021, nearly a quarter (23.4%) reported feeling bullied, threatened, or harassed at work.[73] In a national survey among health workers in mid-2021, eight out of 10 experienced at least one type of workplace violence during the pandemic, with two-thirds having been verbally threatened, and one-third of nurses reporting an increase in violence compared to the previous year.[85] By October 2021, at least 300 health department leaders had left their posts during the pandemic due to reported threats, intimidation, lack of funding and lack of support from lawmakers and government leaders.[86] The widespread falsehoods and misinformation about COVID-19 have contributed to worker exhaustion, frustration, burnout, and not feeling valued.[87]

While the pandemic has affected all health workers, some groups have been disproportionately impacted based on their unique circumstances. Some of these groups are highlighted on the following pages.

"There was a point where I could no longer contain the heartbreak of everyone that had been lost."

Kevin C. Miami, FL / Nurse

Groups of health workers whose health and well-being have been disproportionately impacted before and during the pandemic

Many of these challenges existed before the pandemic, and some health workers may belong to multiple groups. The following is not intended to be a complete list, nor suggest that health workers not listed here do not experience burnout or mental health challenges.

Health workers of color

Health workers of color perform a variety of jobs across the health care system but are more highly represented among low wage health workers.[88, 89] They were more likely to care for patients with suspected or confirmed COVID-19, **more likely to report inadequate personal protective equipment** and have been **nearly twice as likely as white colleagues to test positive for COVID-19.**[89, 90, 91] Health workers of color continue to experience the effects of racial injustice due to longstanding structural inequities and may also face interpersonal racism in the workplace or learning environment, including implicit bias and microaggressions.[92]

Immigrant health workers

While immigrant health workers represent only 18% of health workers, **more than a third of the health workers who died in the first year of the pandemic were born outside the United States.**[93] Foreign born health workers comprise nearly one third of physicians, and more than one out of five nursing assistants. They also include 38% of home health aides and 25% of personal care aides, providing long term services and supports to people with disabilities and older adults.[94]

Female health workers

Compared to male counterparts, female health workers, who make up nearly 70% of the health workforce globally, have reported higher rates of burnout, depression, anxiety, insomnia, and occupational distress before and during the pandemic.[95, 96, 97, 98, 99] They are also more likely than men to be responsible for childcare, and as a result, face greater disruptions in their careers and widening disparities in professional advancement.[97, 100]

Low wage health workers

Millions of low wage health workers have worked on the frontlines of the pandemic including as health support workers such as orderlies and phlebotomists; direct care workers such as home health and personal care aides; and health care service workers such as housekeepers and cooks.[101, 102] Median wages across these occupations were just $13.48 per hour in 2019.[103] More than 80% of them are women, and they are also disproportionately workers of color.

- 9 of 10 lower-earning health workers are women, nearly two-thirds are minorities and almost **one-third live below the federal poverty level** (**44% living below 200 percent of the poverty line**).[104, 105] Compared to clinical practitioners who diagnose and treat patients, the **likelihood of being food insecure was 5.1 times higher for health support workers and 2.5 times higher for health technologists and technicians.**[106] Many are also susceptible to irregular hours, contract positions and the need to juggle multiple jobs.

Health workers in rural communities

Rural hospital closures can create access challenges for the communities they serve. Rural areas experienced staffing shortage crises in nursing homes that corresponded with trends in COVID-19 cases.[107, 108] Between January 1, 2010, and March 31, 2022, 138 rural hospitals across the nation closed completely or converted to provide services other than inpatient care. In March 2020, rural areas had between 37 and 42 percent fewer ICU beds per persons who were at risk of developing severe COVID-19 based on age and comorbidities than persons in urban areas. Rural areas were already facing severe health care constraints; although there were only two rural hospital closures in 2021, there were 18 closures in 2019 and 19 closures in 2020.[109]

Health workers in tribal communities

Health workers in tribal communities face increasing work demands from chronic lack of program funding and ongoing workforce shortages, including a lack of behavioral health specialists.[110] In addition, health workers in tribal areas may chronically experience challenges with safe water, food insecurity, and housing insecurity in their communities which were exacerbated by the pandemic.[111]

We Must Take Action

Investing in health workers and safeguarding their well-being protects their health, our health, and our entire health care system. The demand for health workers will only continue to grow in the U.S. and globally. Too often, interventions to address burnout and well-being focus on single, individual-level factors instead of systemic and multi-pronged efforts, and therefore have limited long-term impact on preventing burnout and improving well-being.[112]

We must seize this moment to reimagine and create a health care system where patients, communities, and health workers can all thrive. That will require us to take a whole-of-society approach, one that addresses systems-level challenges associated with organizational culture, policy, regulations, information technology, financial incentives, and health inequities.[4, 113] This calls for collaboration from a variety of public and private stakeholders, as well as community partners, to tackle the root causes of health worker burnout, while rebuilding trust among all our communities. Here is what we must do now:

- **Protect the health, safety, and well-being of all health workers.** Never again should health workers be expected to work under the unsafe conditions that many of them faced during the pandemic. Protecting health workers from workplace violence must be prioritized by all institutions and communities, and must be supported by legislation. Health systems must ensure that health workers are adequately trained for all scenarios and provided with a robust supply of personal protective equipment. In addition, health systems should address and prepare for staffing challenges, and identify sources of workplace illness and injury.

- **Eliminate punitive policies for seeking mental health and substance use care.** We must ensure that every health worker has access to affordable, confidential, and convenient mental health care. We must address the spillover effects of burnout, most prominently, mental health challenges such as anxiety and depression. We can offer flexible care models (e.g., telemedicine and virtual care) after working hours, improve parity and access to care, increase insurance coverage for mental health care, and eliminate punitive language in the licensing,

accreditation, and credentialing of health professionals. We can encourage vulnerability and open communication around mental health and substance use care, and promote care seeking as a sign of strength. We can offer evidence-based training and practices that support prevention, early intervention, and treatment of an array of conditions including burnout and mental health challenges.

- **Reduce administrative and other workplace burdens to help health workers make time for what matters.** This must include reducing administrative and documentation burdens, as well as the cognitive load on health workers, increasing flexibility in work scheduling, ensuring health information technology that is human-centered, interoperable, and equitable, and aligning payment models to recognize the value of a conversation, not just of a procedure.

- **Transform organizational cultures to prioritize health worker well-being and show all health workers that they are valued.** Employers, policymakers, and professional associations can support health workers by identifying and measuring factors contributing to burnout, and co-developing solutions to respond to and prevent it, while advancing worker well-being. We must ensure living, competitive wages, paid sick and family leave, rest breaks, evaluation of workloads and working hours, educational debt support, and family-friendly policies including child care and care for older adults for all health workers. Health workers are the pillars of our collective health and well-being, and therefore should be valued and respected by their organizations and society.

- **Recognize social connection and community as a core value of the health care system.** Strengthening social connection and community enhances job satisfaction, protects against loneliness and isolation, and improves the quality of patient care. Peer and team-based models are one way to strengthen collaboration, create important opportunities for social support and community for health workers, while also mitigating burnout and moral distress. Collaboration and a sense of belonging also contribute to the well-being of health workers and patients by building connections between health care, public health, and the community.

- **Invest in public health and our public health workforce.** We must improve disease surveillance systems and expand and diversify the public health workforce so we can address the impacts of social determinants of health, health inequities, counter the spread of health misinformation and disinformation, strengthen partnerships cross clinical and community settings, and consider other societal factors that shape health and well-being. These are critical measures to protect our health systems.

Figure 3 (next page) includes a list of solutions to health worker burnout. This is not intended to be comprehensive.

FIGURE 3

Thriving together: Solutions to health worker burnout

We must shift burnout from a "me" problem to a "we" problem.

Diverse and empowered health workforce

Leadership commitment and organizational values

Reduced administrative burdens

Accessible mental health and substance use care

Safe and inclusive environments

Culture of healing, community and connection

Human-centered technology

Community partnership

Trust

Federal, State, Local, Tribal Governments

Health Care Organizations

Health Insurers and Payers

Academic Institutions

Licensing and Accreditation Bodies

Researchers

Family Members, Friends, and Communities

Office of the U.S. Surgeon General

What Health Care Organizations Can Do

Health care organizations can implement evidence-based policies, programs and solutions that identify, address, and help prevent adverse health outcomes and burnout for health workers. The pandemic has highlighted opportunities to strengthen organizational cultures and environments to be safer, more generous, and more just for all health workers.

Below are some recommendations that span a variety of public and private health care organizations, including hospitals, health systems, community health centers, as well as government-funded or operated health care delivery organizations.

Transform workplace culture to *empower health workers* and be responsive to their voices and needs.

We can begin by listening to health workers and seeking their involvement to improve processes, workflows, and organizational culture. In one study of primary care practices, those with "zero-burnout" were found to have strong practice cultures that fostered teamwork and communication in quality improvement.[114] A workplace that cultivates relationships and uses open communication and participatory management to solve problems empowers staff to speak up and engage in efforts that can improve patient safety, quality of care, and build trust.[115, 116, 117, 118] The Institute for Healthcare Improvement (IHI) offers tools, strategies and nationwide learning networks for engaging health workers and fostering a culture of constant learning toward improvement.[119, 120] For instance, applying structured rounding with staff or asking them direct questions of reflection via regular one-on-one sessions, huddles and group brainstorming, builds positive organizational cultures.[121]

Show health workers how much they are *valued.*

Organizational cultures where staff feel unsupported and undervalued have been strongly associated with feelings of stress, burnout, and intent to leave the health sector.[71, 72, 118, 122] Priority opportunities for showing health workers that they are valued employees while recognizing their work-life demands include transparent

communication, ensuring living competitive wages and affordable health coverage that is inclusive of mental health and substance use care, promoting family friendly policies such as parental leave and support for child care and care for older adults, and a periodic review of staff workloads, patient caseloads and coverage, working hours, and hazard or retention pay opportunities.[57, 80, 123, 124, 125] Historically, special, periodic supplemental allowances for staff working in environments that could threaten their health and well-being have been applied in some U.S. agencies and health care organizations.[126, 127] Organizations can also provide opportunities for recruiting and training health workers from the communities they serve; support rapid training for deployments to unfamiliar units; promote continuing education and professional development; and expand opportunities for career advancement, leadership, mentoring, and coaching at every level, especially for women and underrepresented minorities.

Build a commitment to the *health and safety of health workers* into the fabric of health organizations.

This includes at a minimum:

- **Commit to health worker well-being at the highest levels of leadership.** Priority opportunity examples include establishing a Chief Wellness/Well-being Officer role with dedicated resources and decision making power, developing online staff safety hubs with resources, adding well-being metrics into key performance indicators for the organization, and linking executive compensation with improvements in health worker well-being.[128, 129, 130] This can also include updating policies for staffing standards that ensure patient safety and health worker well-being, and improving other workplace policies that affect job resources and demands.[131, 132] The Department of Veterans Affairs (VA) implements a Whole Health System (WHS) of care that aims to empower and equip Veterans and VA employees to take charge of their health and well-being. The WHS approach includes active encouragement of multi-disciplinary committees and coordinators to support a culture of well-being and resiliency, as well as resources for leaders and staff, such as needs assessments and evaluation mechanisms; early outcomes suggest a meaningful impact on employees personally and professionally.[133] The American Medical Association offers guidance for health care leaders to create the organizational conditions for joy, and purpose and meaning in work, including a Joy in Medicine Health System Recognition Program to recognize organizations that support health worker well-being.[134]

- **Regularly assess, measure, respond to and intervene to prevent occupational distress and burnout using validated tools.** This can include validated metrics for measuring recovery and well-being. [The National Academy of Medicine Resource Compendium for Health Worker Well-Being](#) offers a collection of evidence-based measurement tools for organizations to use.[135] Organizations can consider annual engagement surveys, as well as real-time and proxy measures in their surveys and dashboards.[125] Data should be confidential and when possible be evaluated by race, ethnicity, age, departmental units, role, and levels of seniority to understand differences and help identify tailored interventions.

- **Build in time for and encourage all health workers on staff to take paid leave, sick leave, family leave, and rest breaks.** Many health workers report coming to work sick because of a desire to not burden colleagues with additional work, a belief that it is unprofessional to take a sick day, a desire not to disappoint patients, or fear of being ostracized by colleagues.[136, 137, 138, 139] Paid time off with coverage can help staff refresh and care for themselves as well as family members, while protecting colleagues and patients in their care.[140, 141] Leadership at all levels in an organization can serve as powerful role models by communicating these opportunities during orientation and regularly afterwards, and by modeling their use.

- **Establish a zero-tolerance policy for violence, and institute a workplace violence prevention program to address violence and abuse in the workplace, (this includes physical, verbal, and/or cyber-based).** Safe workplace environments are critical for the delivery of safe, quality care for patients whether that is at a clinical, community, or other setting.[142] The Joint Commission offers workplace safety standards and resources, including policy guidance for assisting health care organizations on how to assess facilities and evaluate strategies.[143]

- **Commit to the safety and health of the workforce by prioritizing adequate personal protective equipment.** Periodically evaluate the workplace environment to identify and mitigate hazards. Establish safety and occupational health teams that can identify key issues impacting health workers in all areas.

Review and revise policies to ensure health workers are *not deterred from seeking appropriate care* for their physical health, mental health and/or substance use challenges.

This means we need to:

- **Examine questions on applications and renewal forms for jobs and hospital credentialing so that health workers are not deterred from seeking mental health and substance use care.** Many health workers fear negative repercussions for their health professional licensing, credentialing, commercial insurance, and careers if they seek out mental health and substance use care.[144] A review of forms can ensure that questions are aligned with recommendations from The Joint Commission in 2020, the Federation of State Medical Boards and the American with Disabilities Act.[145, 146]

- **Normalize conversation about the use of mental health and substance use care for health workers.** Create and normalize opportunities for health workers and peers to communicate about occupational distress, grief, and mental health challenges in the workplace, especially during and following stressful episodes. Health workers should be continually reassured by leadership that speaking out about workplace concerns or seeking mental care will not have negative impacts on their employment.

Increase access to *high-quality, confidential* mental health and substance use care for all health workers.

Ensure that all health workers have access to confidential mental health services for themselves and family members, including hotlines and Employee Assistance Programs (EAP).[147] Organizations can provide protected time for employees to access EAP or other mental health services and reiterate the confidential nature of those services. Leaders at every level of an organization should be trained in these programs, address barriers for use, and periodically promote these services to their health workers.[148]

Develop *mental health support services* tailored to the needs of health workers.

Examples include implementing in-person "rounds" by mental health professionals who regularly visit units and workplaces, offering support groups for health workers while ensuring time is available for participation, and expanding opportunities for telemedicine and other virtual care services.[149]

- **Incorporate a proactive, evidence-based approach to suicide prevention, including identification and response in the workplace.** Health care organizations can help to identify the work stressors that may put health workers at higher risk, including feelings of inadequacy, lack of preparation for their role, and new work environments.[150] The Healer Education Assessment and Referral (HEAR) Program is a best practice example recognized by the American Medical Association. Developed by the University of California San Diego School of Medicine together with the American Foundation for Suicide Prevention to prevent depression and suicide, this program ensures voluntary, anonymous screening and referral, including system-wide grand rounds on burnout, depression, and suicide.[151] The program has been expanded from physicians to include nurses and has been scaled to over 60 medical campuses.

Rebuild *community and social connection* among health workers to mitigate burnout and feelings of loneliness and isolation.

Decreased social support is related to increased rates of burnout among nurses, and has been associated with increased stress and anxiety, as well as decreased sleep quality.[152] Some example strategies are:

- **Invest in peer support model programs, learning networks, and opportunities during working hours to reflect on challenging circumstances and ethical dilemmas.** For instance, the Battle Buddy program has been shown to mitigate burnout, address feelings of isolation, and offer psychological and emotional well-being support and resources in times of crisis.[74, 153] Other examples include various "rounds" with and for health workers that have been found to increase honesty and openness, while improving teamwork and compassion.[154, 155] The Agency for Healthcare Research and Quality's National Nursing Home COVID-19 Action Network connected staff from over 9,000 nursing homes with local expert mentors and quality coaches to keep residents

and staff safe during the pandemic.[156] While sharing evidence and best practices was central to the success of the program, the value of the Network was enhanced because it created critical connections among front-line team members who were feeling tremendous isolation.

- **Another example is the Community of Practice and Safety Support (COMPASS) program;**[157] developed to prevent injuries and advance the health and well-being of home care workers, this program integrates elements of peer-led social support groups with scripted team-based programs to help workers learn together, solve problems, set goals, make changes, and enrich their supportive professional network. One of the critical aspects of the program is its use of an evidence-based dissemination strategy designed to overcome the evidence to implementation gap which some researchers have reported averages 17 years.

- **Support interprofessional training and initiatives.** Integrated team-based care is associated with health worker satisfaction, greater joy in practice, decreased levels of burnout, and improved patient safety.[158, 159, 160, 161, 162] One example is the U.S. Department of Veterans Affairs (VA) Patient Aligned Care Team (PACT) "teamlet" model which integrates multi-disciplinary clinical and support staff to coordinate and deliver care, including specialty care, for a panel of patients. It has been shown to improve workflow, ensure continuity of patient care, and was associated with lower burnout among VA health workers.[163]

Help health workers *prioritize quality time* with patients and colleagues.

Inefficient work processes, burdensome documentation requirements, and limited autonomy can result in negative patient outcomes, a loss of meaning at work and health worker burnout.[164] Employers can help in the following ways:

- **Implement strategies and approaches developed by the 25x5 Symposium to reduce administrative burdens by 75% by 2025 so that health workers can spend more time with patients.**[165, 166] Example opportunities include reviewing and improving staffing, scheduling and care team delegation plans (for instance, including scribes or automating data collection for any needs that are secondary to clinical care such as billing, quality reporting, and other local health care system or regulatory requirements); reviewing the volume of and requirements for prior authorizations together with health workers; streamlining fax-based work such as prior authorizations to electronic and automated systems, reducing duplicative work (e.g. multiple care team members documenting the

same information, credentialling applications);[167] and ensuring human-centered technology (e.g., usability of electronic medical records).[168] De-implementation checklists can help address common administrative burdens in the workplace.[169] Hawaii Pacific Health's "Getting Rid of Stupid Stuff" program asked employees to assess their experiences with the electronic health record (EHR) and nominate tasks to eliminate that they found either unnecessary or poorly designed; this resulted in 1,700 nursing hours saved per month across their health system.[170]

- **Optimize technology to increase time spent between health workers and patients.** Example opportunities include simplifying EHR-based workflows and addressing patient and health worker usability issues with virtual care. Organizations can also utilize other innovative technologies to rapidly expand needs for team collaboration and clinical decision support.[171, 172]

- **Increase work schedule flexibility and autonomy.** An example opportunity includes recognizing the scheduling needs for health workers who are also parents or caregivers by providing flexibility to start and end workdays. This can help reduce health worker stress and demonstrates an organization's compassion.[96, 125] Other examples include opportunities for health workers to schedule their preferred off days, options to use virtual care when clinically appropriate (e.g., telephone, telemedicine), job-sharing and periodic coverage options by hiring internal or external temporary contract workers, and shifting tasks and decision making across a care team.[173]

Combat *bias, racism, and discrimination* in the workplace.

The long-term impact of racism and discrimination among health workers as it relates to job satisfaction and burnout is not well documented. However, many have anecdotally found a greater incidence of discrimination and racism experienced at work to be associated with higher levels of burnout and the spillover consequences of burnout, such as anxiety and depression.[92] This means we can:

- **Promote health worker diversity, equity, inclusion, and accessibility.** Diversity within teams can help address structural racism, microaggressions, implicit bias, and has been shown to improve patient care quality, innovation, and ensure more accurate risk assessments.[174] Similarly, racial concordance between health workers and their patients and communities is associated with longer-than-average medical visits, as compared to race-discordant visits, which may lead to greater trust and communication, and a greater frequency of necessary medical visits.[175]

- **Identify and call attention to racist and discriminatory behavior to inform solutions.** For instance, Massachusetts General Hospital instituted a code of conduct that clarifies a zero-tolerance policy for discriminatory behavior toward staff and allows removal of patients who repeatedly break this code.[176] Penn Medicine will pilot the Lift Every Voice program, that will give staff at two emergency departments—including physicians, nurses, technicians, environmental service workers, and unit clerks—a simple way to make anonymous reports when racism in the workplace is witnessed or experienced.[177] The goal is to identify patterns and explore solutions among senior leadership and to develop future trainings.

- **Build equity-centered data systems infrastructure.** This means disaggregating data to better identify risk and health outcomes by race, gender, and ethnicity; building data capacity in under-resourced communities; and involving communities in shaping more interoperable data systems.[178] Systems may also encourage the inclusion of non-randomized, large-sample data, such as lived experiences, as valid data for decision making.

Work with health workers and communities to confront *health misinformation.*

While addressing health misinformation requires a whole-of-society response, employers and payors can help to recognize and ensure time for addressing health misinformation and for deepening trust between health workers and their communities. Priority example strategies include the following:

- **Ensure that patients and health workers have adequate time for and access to credible information, consistent with the best scientific evidence available at the time.** Establishing trusted health messengers during non-crisis times will facilitate increased communication and decreased misinformation during a health crisis.
  - ☐ To learn more, please visit [Confronting Health Misinformation: The U.S. Surgeon General's Advisory on Building a Healthy Information Environment.](#)[179]

- **Provide professional education on proactively addressing health misinformation.** This can include increasing health worker awareness of reliable resources, and access to best practices on engaging and presenting information to patients, including linkages to community groups and local organization partners, such as health departments and public libraries, where information flows both ways—to and from communities.

Invest in health prevention and social services to address *health inequities.*

This improves patient health while reducing the strain on our health care system and on health workers, many of whom report ongoing stress and moral distress due to the complexity of societal factors and social determinants of health that impact their patients.[179, 180] This can include partnering with community-based organizations and local governments and making evidence-based investments in social factors that contribute to health and prevent illness such as housing, employment, and education.[181] One example is the National Association of Chronic Disease Directors' Building Resilient Inclusive Communities which supports state and local health departments to engage communities, promote healthy living and reduce social isolation.[182]

- **Care organizations can leverage Community Health Needs Assessments and Community Benefit funds, either individually or regionally, towards community investments such as affordable or low-cost housing, public transportation, food security, economic opportunities, and to address environmental health challenges in the communities they serve.**[183, 184, 185, 186] An example of this includes Kaiser Permanente's Thriving Communities Fund, which partners with community residents, community development financial institutions, and other organizations to create a health action plan to identify and address public health needs.[187, 188]

FIGURE 4

Resources for Health Care and Public Health Organizations

This is not a comprehensive list. In addition to the examples shared throughout the above section and from the National Academy of Medicine Collaborative Resource Compendium for Health Worker Well-Being,[135] the list below offers resources for health care delivery organizations and employers.

Transforming Cultures

Advancing Health Equity: A guide to language, narrative and concepts American Medical Association (AMA), American Association of Medial Colleges (AAMC)

Best Practice Guide for Telehealth U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA)

Creating a Caring Workforce Culture U.S. HHS, Office of the Assistant Secretary for Preparedness and Response (ASPR)

Joy in Work Framework Institute for Healthcare Improvement (IHI)

Standards and Tools for Healthy Work Environments American Association of Critical-Care Nurses (AACN)

Strategies to Reduce Burnout: 12 Actions to Create the Ideal Workplace Mayo Clinic

Team Strategies & Tools to Enhance Performance and Patient Safety (STEPPS) U.S. HHS, Agency for Healthcare Research and Quality (AHRQ)

Well-Being Playbook American Hospital Association (AHA) American Physician Alliance

Well-Being and Professional Fulfillment Resources American College of Physicians (ACP)

Reducing Administrative Burdens

Advocacy Toolkit–Revising Licensing and Credentialing Applications ACP

Best Practices for E/M Clinical Documentation ACP, Electronic Health Record Association (EHRA)

Checklist for Health Care Leadership on Health IT and Clinician Burnout National Academy of Medicine (NAM)

De-Implementation Toolkit AMA

Health IT Playbook U.S. HHS, Office of the National Coordinator (ONC)

Reducing EHR-based clinician burden U.S. HHS, AHRQ

Preventing Suicide and Moral Injury

Comprehensive Blueprint for Workplace Suicide Prevention National Action Alliance for Suicide Prevention (Action Alliance)

Conversations about Moral Distress and Moral Injury National Association of Community Health Centers (NACHC)

Nurse Suicide Prevention/Resilience American Nurses Association (ANA)

Preventing & Addressing Moral Injury Affecting Health Workers During COVID-19 U.S. HHS, ASPR

Preventing Physician Suicide AMA

Addressing Workforce Staffing

Healthcare Provider Shortages-Resources and Strategies for Meeting Demand U.S. HHS, ASPR Technical Resources, Assistance Center, and Information Exchange (TRACIE)

Mitigate Absenteeism by Protecting Healthcare Workers' Psychological Health and Well-being during COVID-19 U.S. HHS, ASPR

Nurse staffing guidelines ANA

Supporting Health Workers

Design Your Own Well-Being Program ACP

Guide to Promoting Health Care Workforce Well-Being During & After the COVID-19 Pandemic IHI

Preventing Suicide: A Technical Package of Policy, Programs, and Practices U.S. Centers for Disease Control and Prevention (CDC)

Resources for Nursing Home Staff Well-Being and Staffing U.S. HHS, AHRQ

Steps Forward Health Care Workforce Well-Being Resources AMA

Whole Health Program Resources U.S. Department of Veterans Affairs (VA)

Well-Being Initiative ANA

Ensuring Health Care Safety and Preventing Violence

A Community Toolkit for Addressing Health Misinformation U.S. Office of the Surgeon General (OSG)

Guidelines for Healthcare and Social Service Workers to Address Workplace Violence U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)

Hospital eTools U.S. Department of Labor, OSHA

Safe Patient Handling Tools and Resources U.S. Department of Labor, OSHA

Workplace Violence Resources and Tools The Joint Commission

What Federal, State, Local and Tribal Governments Can Do

Optimizing health worker well-being calls for long-term investments and collaboration across levels of government along with health systems, health care technology companies, community organizations, health professional associations, and academic institutions.

Below are examples of steps that federal, state, local, and tribal governments can take to improve the health and well-being of health workers:

Invest in *evidence-based* practices, plans and partnerships that ensure the health, safety, and well-being of health workers.

In January 2022, the U.S. Department of Health and Human Services (HHS), through the Health Resources and Services Administration (HRSA), invested $103 million to support evidence-informed programs, practices, and trainings on preventing and addressing burnout, suicide, mental health challenges, and substance use challenges, including technical assistance.[189] Other priority opportunities include:

- **Enact paid leave and rest time policies.** This will allow health workers the time needed to routinely seek care, for their physical and mental health, not only during public health emergencies.[190]

- **Align inter and intra-agency federal investments and efforts as outlined through the Equitable Long-Term Recovery and Resilience Plan** (**ELTRR**).[191] This whole-of-government effort within HHS includes recommendations for a thriving workforce such as expanding peer workforce initiatives that include behavioral health coordination, recovery and resilience-focused initiatives and resources.

- **Strengthen local policies that can protect all health workers from workplace and community violence.** For example, many states have recently enacted laws that further protect their public health officials from harassment, threats, and acts of violence.[192, 193] Encourage multi-sectoral partnerships including workforce representation, health care organization leadership, human services

decision makers, and other relevant public health stakeholders as part of the implementation strategy.

- **Expand support for programs such as PH-HERO** (**Public Health, Equity, Resilience, and Opportunity**) **and HERO-NY** (**Healing, Education, Resilience & Opportunity for New York's Frontline Workers**)**.** These efforts, developed with federal, state, and local stakeholders are aimed at addressing health worker burnout, resiliency, and morale and to support a culture of well-being.[194, 195]

Develop and invest in *reimbursement models* that are aligned with the goals of high-quality person-centered care, including prevention services, and coordinated care teams.

This includes steps to re-value components of the health care system that prevent disease, promote health and well-being, address health information, improve care quality, all while reducing spending, advancing health equity, and addressing health worker well-being.[196, 197] One example is the Maryland Primary Care Program which launched in 2019 as part of the Maryland Total Cost of Care Model, a hospital focused All-Payer Model from 2014-2018. The Centers for Medicare & Medicaid Services partnered with the state of Maryland to implement a model where primary care providers receive support to provide comprehensive care via interdisciplinary care management teams that address both the medical and social needs of patients in addition to performance-based incentive payments.[198] This program resulted in improved delivery and outcomes of care, integration with public health efforts to respond to COVID-19, and decreased health care costs, all while investing in structural change.[199]

Address punitive policies that deter health workers from seeking *mental health and substance use care.*

Many health workers are often reluctant to seek formal care for mental health or substance use conditions because of concerns about losing their license, credentialing, and careers. Priority opportunities include:

- **Support national, state, and local education and awareness campaigns on burnout, moral distress, and well-being.** For example, the Health Worker Mental Health Initiative from the CDC's National Institute for Occupational Safety and Health (CDC/NIOSH) aims to improve awareness about mental

health and substance use challenges in health workers and offer strategies for prevention, screenings, and services.[200]

- **Build on and evaluate the impact of investments such as The Dr. Lorna Breen Health Care Provider Protection Act 2022** which establishes grants and requires other activities to improve mental and behavioral health among health care providers.[201]

- **Examine state health professional licensing board questions in applications and renewal forms for licensure so that health workers are only asked about "conditions that currently impair the clinicians' ability to perform the job," as recommended by The Joint Commission in 2020, Federation of State Medical Boards, and aligned with the American with Disabilities Act.**[146, 202] It is critical that when licensing boards do make these changes that they effectively communicate this to health professionals.

- **Ensure that state boards and legislatures approach burnout from a non-punitive lens. This includes considering offering options for "safe haven" non-reporting for applicants receiving appropriate treatment for mental health or substance use challenges.**[146] They should also prevent public disclosure of health workers' illness or diagnosis as part of any board process, regularly communicate the value of health worker well-being, and help clarify with applicants that any investigation is not the same as disciplinary undertaking.

Increase access to *quality, confidential mental health, and substance use care* for all health workers.

This means we can:

- **Increase funding for convenient, flexible care models such as telemedicine and virtual care, especially for vulnerable and low-income health workers in rural and underserved areas.**[203, 204]

- **Expand and invest in a diverse mental health workforce.** This will reduce waitlists and increase access to quality mental health and substance use care for all, including for health workers in need of mental health and substance use care.

- **Extend the hours of confidential mental health services** to include times that are not during work and provide coverage to enable health workers to attend appointments.

- **Provide resources to health care organizations for mental health support through grant programs from HRSA.**[205] This also includes supporting policies that would provide tailored mental health and substance use care for all health workers.

- **Strengthen mental health parity provisions.** This includes strengthening parity laws to clarify that network adequacy and provider payment are a component of parity analysis; requiring that medical necessity criteria be consistent across behavioral health (mental and physical health services); authorizing funding for parity enforcement in compliance with the 2008 Mental Health Parity law, and providing authority to impose civil monetary penalties for noncompliance, allowing individuals to recover losses from their health plan due to a parity violation; removing ability for government health plans to opt out of complying with mental health parity; and extending parity to Medicare to adhere to mental health parity laws.[206]

Reduce *administrative burdens* contributing to health worker burnout.

This means that we need to:

- **Examine reporting requirements and identify opportunities for aligning policy, improving health professional licensing processes, and ensuring equitable and increased access to telemedicine and other virtual care.**[207, 208, 209] This may include a timely, formal review of policy changes that were enacted under the COVID-19 public health emergency to reduce administrative burdens and ensure minimal disruptions in patient care delivery.

- **Partner with health care delivery organizations, professional associations, and other stakeholders to reduce documentation burden by 75% by 2025.**[166, 210] This includes clarification of regulations and documentation requirements, optimization of the prior authorization process, and review of additional challenges with stakeholders, such as coding validations and electronic health record (EHR) technology.[211]

- **Sustain support for CDC's Data Modernization Initiative.** This initiative is an ambitious, multi-billion-dollar program with a goal of creating a connected, resilient, adaptable, and sustainable "response-ready" public health infrastructure that works across diseases and conditions and enables access to the right data at the right time to better serve patients, communities, and populations. This

includes capacity development in health information technology and data science to ensure effective, seamless stewardship of large quantities of health data.[213, 212]

Recruit, expand, and retain *a diverse health care and public health workforce* to meet current and future health challenges.

Ensuring adequate staffing in the health sector including surge capacity for public health emergencies, that is representative of the communities they serve, is critical to protect and sustain health workers and communities.[213, 214] Example opportunities include:

- **Pay health workers what they are worth.** Priorities can include policies to ensure living, competitive wages, hazard compensation during public health emergencies, equity focused career advancement opportunities, and a review of hiring, salaries and salary caps.[103, 215] Given that nine of 10 low wage health workers are women, nearly two-thirds are minorities, and almost one-third live below the federal poverty line, developing and promoting equitable career ladders with on and off ramps for individuals of all backgrounds is critical to strengthen the health workforce.[216]

- **Expand Graduate Medical Education (GME) positions to best meet the nation's future health care needs.** By 2034, there will be an estimated shortage of up to 48,000 primary care physicians and nearly 77,100 physicians in non-primary care specialties.[217] The Centers for Medicare & Medicaid Services will create 1,000 residency positions for rural communities, but many more are still needed.[218] Example opportunities include development of a comprehensive, transparent, and coordinated planning and funding approach to guide its health workforce development programs by U.S. Health and Human Services (HHS) and relevant stakeholders.[219, 220, 221]

- **Invest in long-term programs such as the Behavioral Health Counselor Apprenticeship program, SAMHSA's Minority Fellowship Program and HRSA's Nurse Scholarship program.**[222, 223]

- **Expand loan repayment programs such as HRSA's National Health Service Corps, Nurse Corps, and Substance Use and Disorder Treatment and Recovery Loan Repayment programs, and support new initiatives for health workforce loan repayment and forgiveness.**[224, 225, 226]

- **Sustain investments for a representative health workforce through long-term support of American Rescue Plan investments to recruit, hire and train health workers from underrepresented backgrounds,** including HRSA's investments in community health workers from underserved communities and public health workers in the Indian Health Service.[227] By expanding support and training for community health workers (CHWs) and health support workers, these programs will continue to increase access to care and improve public health beyond the pandemic's emergency response efforts.

Address *societal contributions to health* to improve patient outcomes and decrease demand on health workers and health systems.

Health disparities, lack of access to preventive services and accurate health information, and delays in care can all create higher workloads and demands on health workers. We can work to:

- **Expand access to health insurance and preventive services for all.** People who are uninsured often delay seeking care, and experience greater morbidity and mortality which can lead to increased strain on health workers.[228, 229] States can take advantage of the Affordable Care Act's expansion of Medicaid for low-income adults to increase health care access to millions of Americans. Medicaid expansion has been shown to improve outcomes by reducing the likelihood that patients forgo preventive services and care.[230, 231] Medicaid expansion also reduces hospitals' uncompensated care which allows health care organizations to better allocate resources.

- **Commit to improving health equity.** This includes building equity-centered data collection systems that increase availability of data by race, ethnicity, geography and disability,[38] developing metrics to measure and monitor health equity, reimbursing health care models that demonstrate equity-centered health care and incentivize providers to improve health outcomes in underserved communities,[232] and supporting local organizations to lead equitable initiatives through collaboration with community health workers, social support specialists, librarians, and others.[38]

- **Build trust between underserved and marginalized communities and health workers.** This begins by engaging communities and populations in the development of public health interventions and messaging, while elevating trusted individuals and organizational stakeholders to deliver public health information.

- **Proactively address health misinformation.** To learn more about what governments can do, please visit [Confronting Health Misinformation: The U.S. Surgeon General's Advisory on Building a Healthy Information Environment.](#)[179]

Commit to a coordinated, *whole-of-government approach* to adequately prepare public health, health care systems, and health workers for future public health emergencies.

Opportunities include:

- **Increase and sustain federal and state funding for public health.** Prior to the COVID-19 pandemic, the public health workforce had decreased by more than 15%.[233] Sustained funding beyond the pandemic would allow local and state health departments to attract, hire, train, build capacity, and retain diverse staff who reflect the communities they serve. To provide a minimum set of health services, some estimates suggest that the public health workforce needs to grow by 80%; this would also build stronger partnerships and trust across the continuum of care and our health care system.[234, 235] It would also ensure a ready and capable workforce in times of emergencies.

- **Strengthen health workforce education, training and resources for disaster and public health emergency response** such that frontline health workers across all settings are prepared to respond to all hazards and future public health emergencies.[236]

- **Support a National Health Care Workforce Commission, a multi-stakeholder workforce advisory committee charged with coordinating a national health workforce well-being strategy.**[237] Desired outcomes of this commission can include, but are not limited to, identification of appropriate federal levers to stabilize workforce factors that drive health worker burnout.

- **Ensure and strengthen collaborative strategic planning across sectors and government agencies to improve our readiness and coordination for future public health crises.** In addition to the ELTRR described above, the HHS Office of the Assistant Secretary for Preparedness and Response (ASPR) through its National Health Security Strategy (NHSS) engages every level of government in addition to health care, public health, emergency management, communities, and the private sector in planning for future health security threats.[238] Similarly, the Federal Emergency Management Agency (FEMA)'s 2021 National Preparedness

Report calls for better strategies across all levels of government to manage longer, increasingly complex disasters.[239]

- **Decrease the risk of COVID-19 infection and other respiratory infections among health workers.** To prepare for future pandemics caused by respiratory viruses, steps must be taken to ensure that all health workers have access to vaccinations and appropriate personal protective equipment, improved engineering controls to minimize exposures in high-risk settings, and strengthened capacity to rapidly administer effective therapeutics for those with high-risk exposures or early disease, especially those with risk factors for severe disease outcomes.

What Health Insurers and Payers Can Do

Health workers need to spend meaningful time with patients to build relationships and provide high-quality care. Unfortunately, administrative requirements, such as prior authorizations, can delay patient care and contribute to poor health outcomes among patients and health worker burnout.[240, 241] In addition, when it comes to their own mental health and well-being, health workers don't always have access to affordable health and mental health and substance use care.

Below are some steps health insurance companies and payers can take:

Improve the quality of health care by supporting both the *quality and quantity of time* that health workers can spend with patients.

In some reimbursement systems such as fee-for-service, health workers, especially health professionals who deliver care, feel penalized for spending the time that they need with patients to provide adequate care. When health care is constrained to be delivered in 15-minute intervals, trust and communication between patient and provider can suffer.[242] Priority opportunities can include engaging health workers in determining optimal visit length standards to ensure both efficiency and quality of care, increasing transparency, and aligning payment systems accordingly.

Reduce the *administrative burden* posed by prior authorization requests and other documentation and reporting requirements.

In a 2020 survey, 85% of physicians described the burden associated with prior authorization as high or extremely high, and 34% reported that prior authorization has led to a serious adverse event for a patient in their care.[243] We can work to:

- **Reduce the overall volume of and streamline prior authorization requests.** In 2018, the U.S. Office of the Inspector General found high rates of inappropriate prior authorization requests; many health workers consider these requests to be

their most burdensome regulatory challenge.[244, 245] To change this, health care organizations, health systems, medical groups, and payors can commit to regularly review and revise the need for prior authorizations requirements, and improve transparency, communication, and timely resolution of prior authorization requests.[246]

- **Leverage technology to streamline administrative requirements, including documentation, reporting, and provider credentialing. For example, insurers could partner with medical groups and health systems to implement electronic prior authorization processes.**[247, 248] According to the 2020 CAQH Index, which tracks adoption of HIPAA-mandated and other electronic administrative transactions for conducting routine business between health care providers and health plans, electronic prior authorization could save $417 million annually.[249] Transitioning to a fully electronic prior authorization process would also save health workers up to 12 minutes per transaction.[249]

Ensure health workers have access to *quality mental health and substance use care.*

For example:

- **Ensure parity in mental health coverage, including for quantitative treatment limits such as cost-sharing as well as for non-quantitative treatment limits such as network adequacy.** To ensure network adequacy, make it easier for providers to become in-network providers, including streamlining credentialing processes and increasing reimbursement rates.[206]

- **Expand telehealth coverage so that health workers can access behavioral health care when and where they need it.**[250, 251]

- **Ensure adequacy of mental health and substance use providers participating in networks, including making efforts to ensure providers in network are accepting new patients**—this will help minimize ghost networks.

- **Ensure mental health and substance use benefits are defined in an objective and uniform manner pursuant to external benchmarks that are based in nationally recognized standards.**

- **In partnership with governments, health care professionals, and other stakeholders, develop reimbursement policies that account for the unique**

nature of telemedicine. For example, adapt policies to account for between-visit work such as secure text messaging with patients.

Partner with health care delivery organizations to improve *clinical care and preventive services.*

Standardizing administrative processes at the state level can improve care and reduce administrative burden on individual health care providers or organizations. For example, a health plan in Minnesota partnered with state medical groups and hospitals to develop standard guidelines for managing key chronic diseases, reducing paperwork, and improving evidence-based care across the state.[252]

Increase *transparency* for health care providers to make better health decisions.

Adopting standardized, evidence-based metrics, such as those created by the Core Quality Measures Collaborative, will not only reduce data collection burden for health workers, but can promote better patient outcomes, increase transparency for patients and clinicians and provide beneficial information for health care decision making and payment.[253, 254]

What Health Care Technology Companies Can Do

All technology companies and industry leaders that intersect with our health care system can play a role to improve health worker well-being. Rapid advancements in technology, and health information technology, have enhanced our capability to deliver, process and access health care, yet more work remains to ensure these advances do not contribute to health worker burnout.

While comprehensive recommendations that span the spectrum and diversity of health-related technology companies are beyond the scope of this Advisory, below are some guiding principles and key steps that health care technology companies can take to help address health worker burnout:

Design technology to *serve the needs* of health workers, care teams, and patients across the continuum of care.

This includes identifying, delivering, and evaluating experiences that meet all users' needs, including health workers, multi-disciplinary teams, and patients. Companies can also:

- **Work with health workers to design and improve electronic health records (EHR) to be easily accessible, understood, efficient and to not add to cognitive load or compete with the time health workers spend with patients.** Priority opportunities include examining factors that may be contributing to information overload, clinical decision complexity, and interruptions. Example solutions can include reducing EHR pop-up messages to minimize work interruptions, improving EHR integration into daily workflows, requiring minimal mouse clicks to carry out a task, curating health data to better visualize patient health data and including resources to better support clinical decision support.[255, 256, 257, 258]

- **Co-design telemedicine and virtual care services together with end-users, including health workers, patient populations, and families.**[259] Example opportunities that can ensure inclusive, accessible design in technology tools include the evaluation and understanding of patient and caregiver users and context, usability testing with patient groups and advocates, and considerations

for varying levels of digital literacy and education, including accommodations such as for different age groups and people with disabilities.[168, 258, 260]

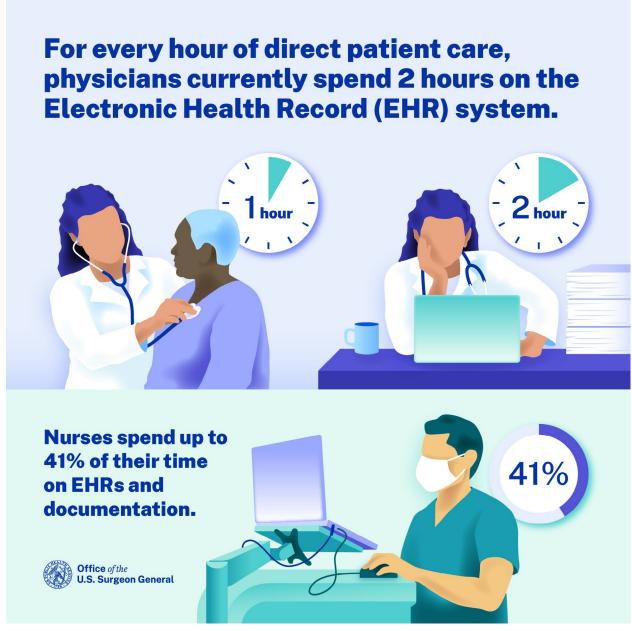## Design platforms with the goal of *interoperability* at the outset.

Technology companies can ensure that patient-generated data is accessible in a meaningful way and does not result in increased burdens on health workers.[37, 261, 262] This includes improvements in interoperability to optimize communication between and across disparate systems and sources, such as care teams, laboratories, and public health. This will help alleviate pressure points faced by health workers across the continuum of care.

Strengthen *integration of data* across different platforms and health sectors.

Having automated health data integration across systems allows for a more comprehensive picture of a patient's health profile while ensuring coordinated care. Priority opportunities include improving data infrastructure to allow for integration of information from all members of a clinical care team, including the patient, caregivers, and across care teams.

Improve *seamless storage of and access to* health data.

This can include adopting a standard format for how health data is stored and exchanged, and allowing the data to be accessed on computers, mobile phones and other devices. This ensures seamless information flows across settings for diverse members of the care team across the continuum of care to access securely, regardless of data storage location.[258, 263]

FIGURE 5

For every hour of direct patient care, physicians currently spend 2 hours on the Electronic Health Record (EHR) system.

1 hour

2 hour

Nurses spend up to 41% of their time on EHRs and documentation.

Office *of the* **U.S. Surgeon General**

41%

Physicians spend 2 hours on the electronic health record (EHR) and other administrative tasks for every hour directly caring for patients. Nurses spend up to 41% of their time on the EHR and documentation.[264]

What Academic Institutions, Clinical Training Programs, and Accreditation Bodies Can Do

Students and trainees ("learners") are particularly vulnerable to burnout, therefore, mental health services and support must be integrated throughout health professional programs at all levels.[265] During the COVID-19 pandemic, several studies found high levels of anxiety, fear, sleep disturbances, and depression reported among college students; 70% of medical trainees surveyed in June-July 2020 reported that their mental health was worse than baseline.[266, 267] Undergraduate, graduate, and post-graduate programs have an opportunity to promote a culture and community that supports their well-being and sets learners up for success.

Studies suggest that integrated programs among learning communities that require resilience and mindfulness curricula and experiences strengthen community cohesion and are associated with significantly lower levels of stress, depression, and anxiety.[268] Applying the health care organization recommendations noted previously, academic institutions can work with clinical training sites, health care and community organizations, professional associations, and government partners on the following actions:

Prioritize, assess, and support *learner well-being.*

Burnout and psychological distress are prevalent among students and trainees but often understudied and not systematically monitored in the U.S. For instance, one pre-pandemic study conducted at a tertiary academic center reported rates of burnout as high as 69% among residents of all specialties.[269] In another example, a worldwide meta-analysis of over 16,000 medical students found that 44% suffered from burnout.[270] We can help to:

- **Ensure periodic measurement and early intervention of learner stress, burnout, and well-being.**

- **Promote a culture and curriculum that recognizes the harms of sleep deprivation to learning and enforce trainee shift schedules that minimize sleep deprivation.**

- **Promote peer support and clearly communicate, encourage, and offer students opportunities to rest and access well-being resources.**

- **Develop integrated programs focused on supporting student wellness.**
  Academic institutions can better prepare students and trainees for coping with morally and psychologically distressing situations, stress, sleep deprivation, and preventing burnout. One example is the "Healer's Art" course, started at the University of California San Francisco by Dr. Rachel Remen, which helps students stay connected to their core values and humanity and equips them with tools to manage moral injury and stress.[271] Another example is Vanderbilt Medicine School's Student Wellness Program which is designed to alleviate the stress and challenges that students commonly face. The program is designed with three core pillars: 1) mentoring and advising, in which junior students develop relationships with senior students as well as with students and faculty, 2) student leadership, in which students are actively engaged in, and contribute to, the development of their curriculum, and 3) personal growth, through which students are nurtured to build an appreciation and understanding of their own psychological development.[272]

- **Ensure educational and all-hazards training opportunities for disaster preparedness.**[273]

- **Provide interdisciplinary rounding and coursework to support opportunities for camaraderie, connection, and community.**[274]

Acknowledge the *hidden curriculum within health professional education* and address the impact it has on trainee development and well-being.

The hidden curriculum represents lessons learned that are embedded in an organizational or learning environment culture and are not explicitly intended. It can have large scale impacts on the culture of health, psychological well-being of trainees, as well as the health and well-being of patients.[275] In 2018, The American College of Physicians noted that more than half of medical students experienced disconnects between what they were explicitly taught and what they perceived from faculty members' behaviors.[276] For example, while formal curricula may promote team-based care, faculty member behavior may reinforce individualistic values or the idea that certain specialties are better than others. Similarly, formal curricula may include the importance of advancing health equity in medical education such as training on implicit-bias, however longstanding hidden curricula may promote race and/or gender-based bias towards learners and/or patients.[277, 278] While some hidden curricula may reinforce positive behavior, such as prioritizing communication with patients in

addition to physical exam, efforts should be made to address the impact on trainee well-being and align efforts with formal education. We recommend implementing the recommendations from the American College of Physicians Position Paper on the hidden curricula, ethics, and professionalism which includes the following principles:[276]

- **Faculty and senior health leaders should model empathy, encourage reflection and discussion of both positive and negative behaviors, and promote health worker wellness.**

- **Teamwork and respect for colleagues must be taught and demonstrated.** Learning environments should foster respect, inquiry, honesty, and empower every individual to raise concerns.

- **Health leaders and educators should create and sustain a strong ethical culture** by encouraging discussion of ethical concerns, making values explicit in everyday decision making, and expectations of professionalism in which patient well-being is a core value.[278]

Promote and increase *access to mental health and substance use care* for health professional learners and faculty.

While burnout is distinct from mental health challenges, efforts should be made to tackle the potential mental health consequences of burnout. Educational institutions and health leaders should normalize conversations in the health professional school community about mental health challenges, including substance use, anxiety, depression, and suicide. They should foster a learning culture that supports mental health and substance use care. This will improve knowledge of treatment for learners and their future patients, while promoting a model of comprehensive care. This can include:

- **Communicating regularly about free, accessible, and confidential resources.** For instance, the University of Pittsburgh School of Medicine program features a dedicated medical student mental health care team comprised of a faculty psychiatrist and full-time psychologist.[279] This team is complimented by the Student Health Advocacy Resource Program (SHARP), a confidential peer-counseling referral and advocacy service for medical students.

- **Investing in training for educators, mentors, faculty, and clinical training program leaders** on supportive supervision and on burnout prevention strategies.

- **Equipping students and trainees with evidence-based tools and trainings where health and well-being are at the core.** For example, resilience-building workshops and curricula, which have been identified as tools for sustaining the health workforce, can improve care quality and offer a sense of community among health workers.[280]

- **Raising awareness of health hazards and the role of safety culture in health care as part of training curricula.** Similarly, students in health care management courses should be taught about the importance of safety culture, the organizational benefits of having one, and how to achieve one in their learning community.

Respond to the unique needs of students and promote *inclusion and diversity* to support well-being for all.

According to new data from the Association of American Medical Colleges (AAMC) the first-year medical school class of 2021 is larger and more diverse than any before it, yet we have more work to do in this area.[281] Institutions must take different backgrounds and experiences into account when developing curriculum as well as mental health and burnout mitigation programs. In addition, a pledge to accept a diverse student body or hire a diverse workforce must be coupled with emphasis on retention, specifically, developing a culture where all feel that they are valued and heard.

- **Address systemic barriers that keep students from diverse backgrounds from entering and remaining in the health professions.** The cost and complexity of health care education, including the application process, can be daunting for students from low-income backgrounds and underrepresented minorities. Programs can decrease or waive application fees and offer remote or virtual interviews for prospective applicants who may not be able to afford to take time off work for in-person interviews. In the setting of the COVID-19 pandemic, AAMC reported record number of applications from students from diverse backgrounds.[281]

- **Learning environments should promote inclusive policies, mitigate stigma and discrimination, and prioritize diversity efforts among faculty, students, and trainees.** A recent study found that female, underrepresented minority, Asian, multiracial, and LGBTQ students bear a disproportionate burden of the mistreatment reported in medical schools.[282] The same study found that 38% of underrepresented minority medical students have endured some form of mistreatment, and more than 20% experienced either discrimination or mistreatment in medical school based on their race or ethnicity.[282]

- **Provide safe spaces and mentorship opportunities for underrepresented minority students and faculty to share their experiences without fear of retribution.** For instance, the Student to Resident Institutional Vehicle for Excellence program, or STRIVE program, which connects underrepresented minority medical students at Northwestern's Feinberg Medical School with underrepresented minority resident mentors, serves as a space for students to learn about approaches to confront bias and discrimination from peers and mentors who have lived similar experiences.

According to new data from the Association of American Medical Colleges (AAMC) the first-year medical school class of 2021 is larger and more diverse than any before it.[281]

- **Increasing support and training for students, trainees, and faculty from underrepresented minority communities.** In addition to near-peer programs which pairs mentors close to the social, professional, or age level of the mentee, academic institutions should implement pipeline programs for supporting and training students, trainees, and faculty. One example is the Harold Amos Medical Faculty Development Program, established by the Robert Wood Johnson Foundation, which offers four-year postdoctoral research awards to physicians, dentists, and nurses from historically marginalized backgrounds.[283]

Foster *peer connectedness.*

Some strategies include:

- **Promoting student-led, faculty-supported programs to improve student navigation within the existing learning environment.** One opportunity example is the Navigating Medical School Program at Wake Forest School of Medicine.[284] After the program was implemented, near-peer mentoring significantly increased from 46% before to 70%. Students who gained a near-peer mentor demonstrated improved self-directed learning behaviors.[285]

- **Offering seminars and programs specific to medical school and trainee transitions that create a collaborative environment for peers to provide insight, advice, and strategies to maintain success.**

Strengthen *connection between trainees and the communities* they serve to mitigate burnout, build trust and connection.

This means we need to:

- **Promote a synergistic relationship between patients and health workers early in training to combat the decreased sense of purpose and connection seen in health worker burnout.** As an example, as part of the Health Systems Science (HSS) curricula at Penn State College of Medicine (PSCOM), the institution offered panel discussions with community leaders involved in a free medical clinic, food pantry, and transitional housing program. Due to this, several students at PSCOM developed a program that was ultimately funded by the institution to provide fresh produce to at-risk patients and train fellow students as "nutrition liaisons" to provide nutritional mentoring to families at market.[286]

- **Design curricula that convey the importance of the continuum of care across health care, public health, and the community.** For instance, an early focus on population health will help learners begin to understand and address social and environmental factors that lead to repeat admissions and poor patient outcomes.[287, 288]

- **Research institutions should invest in and promote a research profile that is centered in population health and health equity.** Research institutions have a unique opportunity to promote "community-engaged research," a process that incorporates input from people whom the research outcomes will impact and involves such people or groups as equal partners throughout the research process.[289] Research institutions should also encourage the uptake, acceptance, and proliferation of new metrics that reflect community experiences and needs.

- **Incorporate professional education on misinformation and promote awareness of reliable resources to students and trainees.** This can include best practices on how to present information to patients and communities and how to access health information designed for non-technical audiences.

Accreditation organizations can revise *clinician accreditation standards* to recognize and communicate the importance of health worker well-being.

Accreditation organizations can play a key role by setting and raising standards across health care organizations for continuous monitoring, reporting, and action to improve health worker well-being.

- **In addition to monitoring for burnout, consider adding measures for staff "sense of feeling valued" to organizational dashboards.**[290] NAM offers validated tools to measure a baseline of health worker well-being, and ensure best practices are standardized across hospitals.

- **Institutionalize health worker thriving and well-being as an organizational value.** For instance, the American Nurses Credentialing Center (ANCC) Pathways to Excellence Program or the Magnet Recognition Program recognize health care organizations through excellence in nursing care, and high-quality patient care and outcomes.[291]

What Family Members, Friends, and Communities Can Do

The pandemic has caused tremendous suffering and pain, yet it has also reminded us of the importance of working together and supporting one another. Health workers are our family members, friends, colleagues, and neighbors. While addressing health worker burnout requires systemic change, here are steps we can take as individuals to support the health workers in our lives:

Learn to recognize when a health worker you know *needs support.*

The pandemic has challenged all of us and increased our risk of psychological distress, which, like physical stress, can harm the body and mind. Health workers are at increased risk for burnout given their work caring for others.

- **Check-in with the health workers you know.** Help them stay connected. Ask them how they are doing and how you can help them, such as "what can I do for you right now?" You can also ask, "what was the hardest part of your day?" or "what worked well for you today?" Know your quiet presence and listening can convey support and compassion.

- **Pay attention to warning signs that indicate that they may need professional support from a mental health provider.** People experience distress differently, but common behaviors to watch out for include increased irritability, withdrawal from friends and family, impaired judgment, excessive alcohol or substance use, reduced ability to manage emotions and impulses, and decreased personal hygiene.

- **Learn about national and local resources, including the ones listed below, that are available to health workers who may be struggling.**

Protect *your health* and the *health of your family.*

To reduce strain on the health care system and health workers, take care of your health as much as possible. This includes staying up to date with all vaccinations and other preventive care whenever indicated, such as blood pressure checks,

mammograms, cervical cancer screenings, and colon cancer screenings. Optimize your physical activity, sleep, healthy nutrition, social support, and spiritual connection.

Adhere to local *public health guidelines.*

For example, stay home if you are ill unless you need to seek medical care. Follow public health advice on community mitigation measures to reduce the burden on the health care system and help protect others.[292]

Help friends and family *do their part* to support health workers.

For example, if you have friends or family who are hesitant to get vaccinations, engage with them in non-judgmental and constructive ways. Showing them that you care and are willing to listen can go a long way toward building trust.

☐ For actionable tips, check out the Surgeon General's Community Toolkit for Addressing Health Misinformation.[293]

As a patient, *be kind* to health workers.

While you should absolutely expect quality care and professionalism, acknowledging the pressure that health workers are experiencing can go a long way. Many may be feeling undervalued, overworked, or isolated. Some have faced harassment, stigma, and violence. Health professionals are doing their best to care for you, often with limited resources in underserved communities, and may be facing financial or other personal challenges.

What Health Workers Can Do

While preventing burnout and associated mental health challenges calls for both an employer and a whole of society effort to ensure lasting change, there are evidence-based strategies that health workers can take to prevent burnout and improve their well-being.[294] Many organizations and associations have developed and compiled resources to help health workers protect their health and well-being. Below are a few of their recommendations:

Learn to recognize the *signs of distress,* mental health challenges and burnout in yourself and in your colleagues.

You are not alone in whatever you are feeling. Start with a simple question for yourself or peers, "how are you doing, really?" You may also find a training such as Psychological PPE helpful to identify and help respond to signs and symptoms of distress in yourself or in your peers.[295]

Stay connected and *reach out for help.*

Identify a list of 2-3 friends and/or family members who you can lean on and call during moments when you feel overwhelmed, even if it's just for 5 minutes. Ask your employer about your organization's employee assistance program (EAP) which is a free and confidential resource. Employers should be regularly communicating with all health workers on available supports and services, including support for child care or care for older adults. See the resources listed below to find support from trained professionals to help with mental health conditions, stress, insomnia, or any other emotions you may be feeling.

Prioritize moments of *joy and connection.*

This may mean returning to old hobbies, spending time with friends or family, or trying something new when you're ready.

Get back to basics with *good health habits.*

Eating nutritious meals, exercising regularly, getting enough sleep, and limiting alcohol and harmful substance use can help you cope with stress at work and home. A 10-minute walk outside in sunlight can help improve your energy and focus.

Use your voice to *advocate for positive changes* in your workplace, learning environment or communities.

Participate in peer support programs, workplace safety committees, and worker teams focused on problem solving. You can also join a health professions association or specialty organization for local, state or national level advocacy, to connect to peers outside of your workplace who may be having similar experiences, or to find additional resources for support or learning opportunities. Many associations have health worker well-being initiatives and committees. They may also offer advocacy opportunities across a variety of topics, including around the social determinants of health that may be impacting your patients and communities.

FIGURE 8

Resources to support health worker health and well-being *This is not a comprehensive list.*

24/7 Hotlines *If you are in a crisis now, or concerned that you or someone may harm themselves or someone else, seek immediate help by using these 24/7 hotlines.*

National Suicide Prevention Lifeline
Call 1-800-273-TALK (8255)

Crisis Text Line
Text HOME to 741741

Veterans Crisis Line
Call 1-800-273-8255 and press 1, or Text to 838255

Physician Support Line
Call 1-888-409-0141 (staffed by volunteer psychiatrists)

Disaster Distress Helpline
Call or Text 1-800-985-5990
Substance Abuse and Mental Health Services Administration (SAMHSA)

Additional Resources

Behavior Health Treatment Locator SAMHSA

Being Well in Emergency Medicine: Guide to Investing in Yourself American College of Emergency Physicians (ACEP)

Compassion Fatigue Resources Mental Health America (MHA)

Disaster Behavioral Health Resources U.S. HHS, Office of the Assistant Secretary for Preparedness and Response (ASPR)

Moral Injury in Health Care Workers U.S. Department of Veterans Affairs (VA) National Center for PTSD

Resource Compendium for Health Care Worker Well-Being National Academy of Medicine (NAM)

Resources for Health Professionals National Alliance on Mental Illness (NAMI)

Stress First Aid Module American Medical Association (AMA)

Support for Public Health Workers and Health Professionals U.S. Centers for Disease Control and Prevention (CDC)

Tips for Coping with Stress and Compassion Fatigue SAMHSA

Toolkit for Addressing Workplace Violence American College of Physicians (ACP)

Well-Being Initiative American Nurses Association (ANA)

Where Additional Research is Needed

Call for further coordinated research to develop a national, validated tool to regularly *assess, measure, track and respond to health worker burnout and well-being* across settings.

This includes support of research that is inclusive of the diversity of professions and health workers across the health care system. Priorities areas can include:

- **Measure, track, respond to, and share findings on the extent of health worker burnout, moral distress, moral injury, and well-being across health care settings using validated tools.**[135, 296] This includes studies that systematically examine and analyze differences by health care setting and department, as well as by race, ethnicity, gender, age, disability, and among groups of health workers, including those in low wage occupations, rural settings, and in tribal communities. This data will strengthen our understanding of the causes and consequences of burnout and moral distress on all health workers, including historically overlooked groups, and help stakeholders to best allocate resources, and evaluate timely, culturally appropriate interventions.

- **Support research on the effects of integrated team-based models of care on health worker well-being, patient outcomes and other impacts.**

- **Expand research that can evaluate and inform future health worker well-being projects, programs and policies across health care and public health settings.** For example, the Patient-Centered Outcomes Research Institute (PCORI) has offered support on innovative studies using diverse methodology that examine strategies to protect the well-being of the health workforce.[297] There is also an opportunity for increased understanding on the effectiveness of programs related to health worker well-being, such as psychological and mental health first aid.

Improve our understanding of the *immediate and long-term impacts* of the pandemic on health worker well-being.

This can include continued research on:

- **The extent of mental health challenges among health workers, including health professional students and trainees.** This can include studies on the relationship between burnout, moral distress, moral injury, and risk for anxiety, depression, substance use challenges, and suicidal ideation. This will help inform future policies and programs.

- **Post-COVID conditions and short and long-term disabilities.** This will help us understand the impacts, better support health workers who are suffering from post-COVID conditions, and better protect health workers from other respiratory diseases and future pandemics.

    - Inclusive of research on optimal approaches to early detection, prevention, treatment, and rehabilitation; approaches to assessment of impairment and disability; and tracking prognosis of post-COVID conditions among health workers to identify opportunities for supporting their well-being.[298]

Role of *payment models, technology, and private equity* in shaping health worker well-being.

This can include:

- **Further research on the impact of telemedicine and other virtual care services on health worker well-being, the patient-clinician relationship, and patient outcomes to inform future telemedicine standards.**[299]

- **Research to examine the effects of value-based models of care on health worker well-being.**

- **Research on resource allocation, health worker well-being, health care access, and patient outcomes within private equity owned health care facilities and other for-profit structures.**[300] This will ensure appropriate accountability and oversight to protect health worker well-being and patient safety.[301, 302]

- **Further exploration of the role and potential for current and emerging artificial intelligence technologies and applications to reduce administrative burden on health workers while also improving patient safety and care.**[303, 304]

Improve our understanding of *how to develop and apply health information technology (IT)* that more effectively supports health workers in the delivery of care.

This can include:

- **Research to examine how to design and develop effective health IT, including better tools to summarize, organize, and display data to better support health workers with decision making, documentation, and care delivery.**

- **Research to evaluate the impact, effective implementation, and role of health IT in various health settings, including assessing training needs of health workers.** This could include research into the development and validation of effective measures, including impact on productivity, utilization, morale; and how to incorporate evaluation findings into systems improvement.

Conclusion

> "Will we step up, and meet our moral obligation to care for those who have cared for us?"
>
> Dr. Vivek Murthy, Surgeon General of the United States

A few weeks before this Advisory was published, I met with a group of health workers at Jackson Memorial Hospital in my hometown of Miami, Florida. When I went around the room and asked everyone how they were coping with the pandemic and its impact on their work, one nurse told me he felt "helpless, but not hopeless."

I was struck by his faith. After two unfathomably traumatic years, he was still showing up—sometimes tired, sometimes overwhelmed, sometimes scared or lonely, but always confident in the power of his compassion, his colleagues, and his community to make things just a little bit better every day.

Millions of health workers like him are now counting on us to make the policy, institutional, and systems changes necessary to address the burnout crisis decimating their colleagues—and to do so with the urgency this moment demands.

Will we step up, and meet our moral obligation to care for those who have cared for us? It won't be easy. Many of the recommendations in this Advisory require significant structural change and sustained investment. They will take time and require our continued attention and action.

But the hope of health workers has endured through far worse. Our efforts must as well.

Vivek H. Murthy, M.D., M.B.A.
Vice Admiral, U.S. Public Health Service
Surgeon General of the United States

Glossary

Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure. Occasional anxiety is an expected part of life. Anxiety disorders are medical diagnoses that arise when the anxiety does not go away, and the symptoms interfere with daily activities such as job performance and relationships.

https://www.nimh.nih.gov/health/topics/anxiety-disorders
https://www.apa.org/topics/anxiety

Behavioral health encompasses traditional mental health and substance use challenges, as well as overall psychological well-being.

https://www.cms.gov/outreach-education/american-indianalaska-native/aian-behavioral-health
https://www.cdc.gov/pcd/issues/2020/20_0261.htm

Burnout is an occupational syndrome resulting from chronic workplace stress due to an imbalance between job demands and resources. It is characterized by having at least one of the following feelings when thinking about one's job: emotional exhaustion; feeling detached from and cynical about work and reduced professional efficacy.

https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases

Cardiovascular conditions (e.g., high blood pressure, heart attack, stroke) relates to the heart or blood vessels. The risk of certain cardiovascular diseases may be increased by high blood pressure or unhealthy behaviors (e.g., smoking). The most common cardiovascular disease is coronary artery disease (narrow or blocked coronary arteries), which can lead to chest pain, heart attacks, or stroke.

https://www.nccih.nih.gov/health/cardiovascular-disease#:~:text=Cardiovascular%20diseases%20(diseases%20of%20the,heart%20become%20narrowed%20or%20blocked

Chronic workplace stress relates to multiple different factors that health workers may face pertaining to their occupations which negatively impact them, including the immediate workplace environment (e.g., relationships with supervisors), organizational system (physical structure of the work environment, company policies), and societal influences (e.g., patient expectations, government policies that affect the workplace).

https://nam.edu/wp-content/uploads/2017/01/Multifacted-Systems-Approach-to-Addressing-Stress-Within-Health-Professions-Education-and-Beyond.pdf

Cognitive load is the relative demand imposed by a particular task, in terms of the mental resources required. Also called mental load, mental workload.

https://dictionary.apa.org/cognitive-load

Compassion fatigue is the phenomenon of stress resulting from exposure to a traumatized individual rather than from exposure to the trauma itself. It can be characterized by exhaustion, anger and irritability, negative coping behaviors including harmful alcohol and drug use, reduced ability to feel sympathy and empathy, a diminished sense of enjoyment or satisfaction with work, increased absenteeism, and an impaired ability to make decisions and care for patients and/or clients.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4924075/

Depression is a medical diagnosis defined as a prolonged episode of at least 2 weeks of depressed mood or anhedonia occurring most of the day, nearly every day. It is a common mental disorder and is treatable. A combination of therapy and antidepressant medication can help ensure recovery.

https://www.nimh.nih.gov/health/topics/depression
https://www.apa.org/topics/depression

Employee assistance program (**EAP**) is a voluntary, confidential program that helps employees (including management) work through various life challenges that may adversely affect job performance, health, and personal well-being to optimize an organization's success.

https://www.opm.gov/policy-data-oversight/worklife/employee-assistance-programs/

Food insecurity is a household-level economic and social condition of limited or uncertain access to adequate food.

https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/definitions-of-food-security/

Health equity is achieved when every person can "attain his or her full health potential" and no one is "disadvantaged from achieving this potential because of social position or other socially determined circumstances."

https://www.cdc.gov/chronicdisease/healthequity/index.htm

Low wage—There is no consensus around a definition or metric for this.

https://www.brookings.edu/research/meet-the-low-wage-workforce/

https://www.brookings.edu/research/essential-but-undervalued-millions-of-health-care-workers-arent-getting-the-pay-or-respect-they-deserve-in-the-covid-19-pandemic/

Mental health encompasses our emotional, psychological, and social well-being and is an essential component of overall health.

https://www.mentalhealth.gov/basics/what-is-mental-health

Moral distress describes a situation when health workers know what care their patients need but are unable to provide it due to constraints beyond their control. Having to choose between keeping their own families safe and caring for patients, witnessing patients dying in isolation, or not having the right tools to help save a patient are examples that can cause moral distress.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6506903/

Moral injury is the lasting psychological, spiritual, behavioral, or social impact that can result from repeated experiences where one experiences moral distress. When health workers have moral injury, they may experience feelings of guilt, shame, and anger and these can result in stress reactions such as sleep changes, isolation, and a weakened sense of empathy. Moral injury and its relationship to burnout and other chronic workplace stress phenomena is an active area of research.

https://www.ptsd.va.gov/professional/treat/cooccurring/moral_injury.asp

https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(21)00113-9/fulltext#:~:text=Moral%20injury%20is%20understood%20to,person's%20moral%20or%20ethical%20code

Post-Traumatic Stress Disorder or PTSD is disorder that develops in some people who have experienced a shocking, scary, or dangerous event. It is a medical diagnosis and is defined by having all of the following for at least 1 month: At least one re-experiencing symptom (e.g., flashbacks), a least one avoidance symptom (staying away from places that are reminders of the traumatic experience), at least two arousal and reactivity symptoms (e.g., having difficulty sleeping, or angry outbursts), at least two cognition and mood symptoms (e.g., guilt, loss of interest in enjoyable activities).

https://www.nimh.nih.gov/health/topics/post-traumatic-stress-disorder-ptsd

Public health promotes and protects the health of people and communities where they live, work, learn and play.

https://www.apha.org/What-is-Public-Health

Resilience is the ability to persevere, adapt, recover, or even grow from adversity, stress, or trauma.

https://nam.edu/systems-approaches-to-improve-patient-care-by-supporting-clinician-well-being/

Social determinants of health are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life risks and outcomes.

https://www.cdc.gov/socialdeterminants/index.htm

Substance use disorders occur when the recurrent use of alcohol, opioids, benzodiazepines, and/or other drugs causes clinically significant impairment, including health problems, disability, and inability to meet major responsibilities at work, school, or home.

https://www.samhsa.gov/find-help/disorders#:~:text=Substance%20use%20disorders%20occur%20when,work%2C%20school%2C%20or%20home

Telehealth is defined as the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, health administration, and public health.

https://www.hrsa.gov/rural-health/topics/telehealth/what-is-telehealth

https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet

Well-being is described as a state in which people perceive their lives as going well, including aspects of their physical, emotional, and psychological health, productivity, and economic well-being.

https://www.cdc.gov/hrqol/wellbeing.htm

https://nam.edu/systems-approaches-to-improve-patient-care-by-supporting-clinician-well-being/

Acknowledgments

This Advisory was prepared by the Office of the Surgeon General (OSG) with valuable contributions from the following U.S. interagency partners:

Department of Health and Human Services
Agency for Healthcare Research and Quality (AHRQ)
Office of the Assistant Secretary for Health (OASH)
Office of the Assistant Secretary for Planning and Evaluation (ASPE)
Office of the Assistant Secretary for Preparedness and Response (ASPR)
Centers for Disease Control and Prevention (CDC)
    Office of the Director
    National Institute for Occupational Safety and Health (NIOSH)
Centers for Medicare and Medicaid Services (CMS)
    Office of the Administrator
    Center for Clinical Standards and Quality (CCSQ)
Center for Medicare and Medicaid Innovation (CMMI)
Office of Burden Reduction and Health Informatics (OBRHI)
Health Resources and Services Administration (HRSA)
    Office of the Administrator
    Bureau of Health Workforce (BHW)
Indian Health Service (IHS)
National Institutes of Health (NIH)
    National Institute on Minority Health and Health Disparities (NIMHD)
Office of Minority Health (OMH)
Office of the National Coordinator for Health Information Technology (ONC)
Substance Abuse and Mental Health Services Administration (SAMHSA)

Additional Partners
White House Domestic Policy Council (DPC)
Department of Defense (DOD)
    Office of the Assistant Secretary of Defense for Health Affairs (OASD-HA)
Department of Labor (DOL)
Federal Emergency Management Agency (FEMA)
US Department of Veterans Affairs (VA)

References

1. World Health Organization. (2006). Working together for health: The World Health Report. Retrieved from https://apps.who.int/iris/

2. U.S. Centers for Disease Control and Prevention. (2019). Infection Control in Healthcare Personnel: Infrastructure and Routine Practices for Occupational Infection Prevention and Control Services, Appendix. Retrieved from https://www.cdc.gov/infectioncontrol/guidelines/healthcare-personnel/appendix/terminology.html

3. Center for Health Workforce Studies. (2016). What is the Health Workforce? Retrieved from https://www.chwsny.org/the-health-workforce

4. National Academies of Sciences, Engineering, and Medicine, Committee on Systems Approaches to Improve Patient Care by Supporting Clinician Well-Being. (2019). *Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being.* National Academies Press. Retrieved from https://nam.edu/systems-approaches-to-improve-patient-care-by-supporting-clinician-well-being/

5. Trockel, M. T., Menon, N. K., Rowe, S. G., et al. (2020). Assessment of physician sleep and wellness, burnout, and clinically significant medical errors. *JAMA Network Open, 3*(12). https://doi.org/10.1001/jamanetworkopen.2020.28111

6. Cimiotti, J. P., Aiken, L. H., Sloane, D. M., & Wu, E. S. (2012). Nurse staffing, burnout, and health care-associated infection. *American Journal of Infection Control, 40(*6): 486–490. https://doi.org/10.1016/j.ajic.2012.02.029

7. Dyrbye, L. N., Major-Elechi, B., Thapa, P., Hays, J. T., Fraser, C. H., Buskirk, S. J., & West, C. P. (2021). Characterization of nonphysician health care workers' burnout and subsequent changes in work effort. *JAMA Network Open, 4*(8). https://doi.org/10.1001/jamanetworkopen.2021.21435

8. Garcia, C. L., Abreu, L. C., Ramos, J., Castro, C., Smiderle, F., Santos, J., & Bezerra, I. (2019). Influence of burnout on patient safety: Systematic review and meta-analysis. *Medicina (Kaunas, Lithuania), 55*(9): 553. https://doi.org/10.3390/medicina55090553

9. Han, S., Shanafelt, T. D., Sinsky, C. A., Awad, K. M., Dyrbye, L. N., Fiscus, L. C., Trockel, M., & Goh, J. (2019). Estimating the attributable cost of physician burnout in the United States. *Annals of Internal Medicine, 170*(11), 784–790. https://doi.org/10.7326/M18-1422

10. National Task Force for Humanity in Health Care. (2018). Position Paper: National Taskforce on Humanity in Healthcare. Vocera. Retrieved from https://www.vocera.com/public/pdf/NTHBusinessCase_final003.pdf

11. Salvagioni, D., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., & Andrade, S. M. (2017). Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PloS one, 12*(10). https://doi.org/10.1371/journal.pone.0185781

12. Savic I. (2015). Structural changes of the brain in relation to occupational stress. *Cerebral cortex (New York, N.Y. : 1991), 25*(6): 1554–1564. https://doi.org/10.1093/cercor/bht348

13. Golkar, A., Johansson, E., Kasahara, M., Osika, W., Perski, A., & Savic, I. (2014). The influence of work-related chronic stress on the regulation of emotion and on functional connectivity in the brain. *PloS one, 9*(9). https://doi.org/10.1371/journal.pone.0104550

14. Michel, A. (2016). Burnout and the brain. *Association for Psychological Science - APS.* Retrieved from https://www.psychologicalscience.org/observer/burnout-and-the-brain

15. Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology, 10*: 284. https://doi.org/10.3389/fpsyg.2019.00284

16. Arnsten, A. & Shanafelt, T. (2021). Physician distress and burnout: The neurobiological perspective. *Mayo Clinic proceedings, 96*(3): 763–769. https://doi.org/10.1016/j.mayocp.2020.12.027

17. Ward, S., & Outram, S. (2016). Medicine: in need of culture change. *Internal medicine journal, 46*(1), 112–116. https://doi.org/10.1111/imj.12954

18. West, C. P., Dyrbye, L. N., & Shanafelt, T. D. (2018). Physician burnout: contributors, consequences and solutions. *Journal of Internal Medicine, 283*(6): 516–529. https://doi.org/10.1111/joim.12752

19. Salyers, M. P., Bonfils, K. A., Luther, L., Firmin, R. L., White, D. A., Adams, E. L., & Rollins, A. L. (2017). The relationship between professional burnout and quality and safety in healthcare: A meta-analysis. *Journal of General Internal Medicine, 32*(4): 475–482. https://doi.org/10.1007/s11606-016-3886-9

20. Dewa, C. S., Loong, D., Bonato, S., & Trojanowski, L. (2017). The relationship between physician burnout and quality of healthcare in terms of safety and acceptability: a systematic review. *BMJ Open, 7*(6). https://doi.org/10.1136/bmjopen-2016-015141

21. Tawfik, D. S., Profit, J., Morgenthaler, T. I., Satele, D. V., Sinsky, C. A., Dyrbye, L. N., Tutty, M. A., West, C. P., & Shanafelt, T. D. (2018). Physician burnout, well-being, and work unit safety grades in relationship to reported medical errors. *Mayo Clinic proceedings, 93*(11): 1571–1580. https://doi.org/10.1016/j.mayocp.2018.05.014

22. Dyrbye, L. N., West, C. P., Hunderfund, A. L., Sinsky, C. A., Trockel, M., Tutty, M., Carlasare, L., Satele, D., & Shanafelt, T. (2020). Relationship between burnout, professional behaviors, and cost-conscious attitudes among US physicians. *Journal of Gen Internal Medicine, 35*(5), 1465–1476. https://doi.org/10.1007/s11606-019-05376-x

23. Dyrbye, L. N., West, C. P., Halasy, M., O'Laughlin, D. J., Satele, D., & Shanafelt, T. (2020). Burnout and satisfaction with work-life integration among PAs relative to other workers. *Journal of the American Academy of Physician Assistants, 33*(5): 35–44. https://doi.org/10.1097/01.JAA.0000660156.17502.e6

24. Dyrbye, L. N., Shanafelt, T. D., Johnson, P. O., Johnson, L. A., Satele, D., & West, C. P. (2019). A cross-sectional study exploring the relationship between burnout, absenteeism, and job performance among American nurses. *BMC nursing, 18,* 57. https://doi.org/10.1186/s12912-019-0382-7

25. Dyrbye, L., Herrin, J., West, C. P., Wittlin, N. M., Dovidio, J. F., Hardeman, R., Burke, S. E., Phelan, S., Onyeador, I. N., Cunningham, B., & van Ryn, M. (2019). Association of Racial Bias With Burnout Among Resident Physicians. JAMA network open, 2(7), e197457. https://doi.org/10.1001/jamanetworkopen.2019.7457

26. Dyrbye, L. N., Burke, S. E., Hardeman, R. R., Herrin, J., Wittlin, N. M., Yeazel, M., Dovidio, J. F., Cunningham, B., White, R. O., Phelan, S. M., Satele, D. V., Shanafelt, T. D., & van Ryn, M. (2018). Association of clinical specialty with symptoms of burnout and career choice regret among US resident physicians. *JAMA, 320*(11), 1114–1130. Retracted and replaced in: *JAMA.* 2019; *321*(12): 1220-1221. https://doi.org/10.1001/jama.2018.12615

27. Dutheil, F., Aubert, C., Pereira, B., Dambrun, M., Moustafa, F., Mermillod, M., Baker, J. S., Trousselard, M., Lesage, F. X., & Navel, V. (2019). Suicide among physicians and health-care workers: A systematic review and meta-analysis. *PloS one, 14*(12). https://doi.org/10.1371/journal.pone.0226361

28. Shanafelt, T. D., Dyrbye, L. N., West, C. P., Sinsky, C., Tutty, M., Carlasare, L. E., Wang, H., & Trockel, M. (2021). Suicidal ideation and attitudes regarding help seeking in US physicians relative to the US working population. *Mayo Clinic proceedings, 96*(8): 2067–2080. https://doi.org/10.1016/j.mayocp.2021.01.033

29. LeClaire, M., Poplau, S., Linzer, M., Brown, R., & Sinsky, C. (2022). Compromised integrity, burnout, and intent to leave the job in critical care nurses and physicians. *Critical Care Explorations, 4*(2). https://doi.org/10.1097/CCE.0000000000000629

30. Dean, W., Talbot, S., & Dean, A. (2019). Reframing clinician distress: moral injury not burnout. *Federal practitioner: for the health care professionals of the VA, DoD, and PHS, 36*(9): 400–402. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6752815/pdf/fp-36-09-400.pdf

31. Williamson, V., Murphy, D., Phelps, Forbes, & Greenberg, N. (2021). Moral injury: the effect on mental health and implications for treatment, *The Lancet Psychiatry, 8*(6): 453-455. https://doi.org/10.1016/S2215-0366(21)00113-9

32. National Center for PTSD. (2020). Moral Injury in Health Care Workers. Retrieved from https://www.ptsd.va.gov/professional/treat/cooccurring/moral_injury_hcw.asp

33. Rushton, C. H., Thomas, T. A., Antonsdottir, I. M., Nelson, K. E., Boyce, D., Vioral, A., Swavely, D., Ley, C. D., & Hanson, G. C. (2022). Moral injury and moral resilience in health care workers during the COVID-19 pandemic. *Journal of Palliative Medicine, 25*(5): 712–719. https://doi.org/10.1089/jpm.2021.0076

34. Ulrich, C. M. & Grady, C. (2019). Moral distress and moral strength among clinicians in health care Systems: A Call for Research. *NAM perspectives, 2019,* 10.31478/201919c. https://nam.edu/moral-distress-and-moral-strength-among-clinicians-in-health-care-systems/

35. Deloitte. (2022). Global healthcare outlook 2022. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-health-care-outlook-Final.pdf

36. Sinsky, C. & Linzer, M. (2020). Practice and policy reset post-COVID-19: Reversion, transition, or transformation? *Health Affairs 39*(8): 1405-1411. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.00612

37. Tripathi, M. (2022). Delivering on the promise of health information technology in 2022. *Health Affairs Forefront.* Retrieved from https://www.healthaffairs.org/do/10.1377/forefront.20220217.71427

38. U.S. Department of Health and Human Services, Office of Minority Health. (2021). The Presidential COVID-19 Health Equity Task Force: Final Report and Recommendations. Retrieved from https://www.minorityhealth.hhs.gov/omh/browse.aspx?lvl=2&lvlid=100

39. Bradley, E., Canavan, M., Rogan, E., et al. (2016). Variation in health outcomes: the role of spending on social services, public health and healthcare. *Health Affairs 35*(5). https://doi.org/10.1377/hlthaff.2015.0814

40. U.S. Department of Labor Bureau of Labor Statistics. (2021). Registered Nurses. *Occupational Outlook Handbook.* Retrieved from: https://www.bls.gov/ooh/healthcare/registered-nurses.htm

41. Mercer. (2021). U.S. Healthcare Labor Market Report. Retrieved from https://www.mercer.us/content/dam/mercer/assets/content-images/north-america/united-states/us-healthcare-news/us-2021-healthcare-labor-market-whitepaper.pdf

42. Bateman, M. & Ross, N. (2021). The pandemic hurt low wage workers the most, and so far the recovery has helped them the least. Brookings Institution. Retrieved from https://www.brookings.edu/research/the-pandemic-hurt-low-wage-workers-the-most-and-so-far-the-recovery-has-helped-them-the-least/

43. National Association of City and County Health Officials. (2019). NACCHO's 2019 Profile study: Changes in local health department workforce and finance capacity since 2008. Retrieved from https://www.naccho.org/uploads/downloadable-resources/2019-Profile-Workforce-and-Finance-Capacity.pdf

44. American Association of Medical Colleges. (2020). The Complexities of Physician Supply and Demand: Projections From 2018 to 2033. Retrieved from https://www.aamc.org/system/files/2020-06/stratcomm-aamc-physician-workforce-projections-june-2020.pdf

45. American Association of Medical Colleges. (2020). Attracting the next generation of physicians to rural medicine. Retrieved from https://www.aamc.org/news-insights/attracting-next-generation-physicians-rural-medicine

46. Chowkwanyun, M. & Reed, A. (2020). Racial health disparities and COVID-19. *N Engl J Med. 383:* 201-203. https://www.nejm.org/doi/full/10.1056/nejmp2012910

47. U.S. Department of Health and Human Services & Centers for Disease Control & Prevention. (2021). Community health and economic prosperity: Engaging businesses as stewards and stakeholders — A report of the Surgeon General. Retrieved from https://www.hhs.gov/sites/default/files/chep-sgr-full-report.pdf

48. National Research Council, Institute of Medicine. (2013). U.S. Health in International Perspective: Shorter Lives, Poorer Health. *National Academies Press,* 4, Public Health and Medical Care Systems. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK154484/

49. The Physicians Foundation. (2022). The Physicians Foundation's *Part One of Three: 2022 Survey of America's Physicians.* Retrieved from https://physiciansfoundation.org/physician-and-patient-surveys/the-physicians-foundation-2022-physician-survey-part-1/

50. Kim, E.J., Marrast, L. & Conigliaro, J. (2020). COVID-19: Magnifying the Effect of Health Disparities. *J Gen Intern Med* 35: 2441–2442. https://doi.org/10.1007/s11606-020-05881-4

51. Black Coalition Against COVID. (2022). The State of Black America and COVID-19. A two-year assessment. Retrieved from https://blackcoalitionagainstcovid.org/the-state-of-black-america-and-covid-19/

52. Arora, V., Bloomgarden, E., & Jain, S. (2022). Supporting Health Care Workers to Address Misinformation on Social Media. *New England Journal of Medicine Perspective,* 1683-1685. Retrieved from https://www.nejm.org/doi/pdf/10.1056/NEJMp2117180?articleTools=true

53. Harvard T. Chan School of Public Health. The Public's Perspective on the U.S. Public Health System. (2021). Retrieved from https://cdn1.sph.harvard.edu/wp-content/uploads/sites/94/2021/05/RWJF-Harvard-Report_FINAL-051321.pdf

54. National Academy of Medicine. (2021). Clinician Well-Being Knowledge Hub: Personal Factors. Retrieved from https://nam.edu/clinicianwellbeing/causes/personal-factors/

55. National Academy of Medicine. (2019). Factors affecting Clinician Well-Being and Resilience. Conceptual Model 3.15. Retrieved from https://nam.edu/initiatives/clinician-resilience-and-well-being/conceptual-model-3-15/

56. Cohen, J. & Rodgers, Y. (2020). Contributing factors to personal protective equipment shortages during the COVID-19 pandemic. *Preventive Medicine, 141.* https://doi.org/10.1016/j.ypmed.2020.106263

57. Sinsky, C.A. et al. (2021). COVID-related stress and Work Intentions in a Sample of US Health Care Workers. *Proceedings: Innovations, Quality & Outcomes, 5*(6): 1165–1173. https://www.mcpiqojournal.org/article/S2542-4548(21)00126-0/fulltext

58. Ward, J., Stone, E., Mui, & Resnick, B. (2022). Pandemic-Related Workplace Violence and Its Impact on Public Health Officials, March 2020–January 2021; *American Journal of Public Health, 112:* 736-746, https://doi.org/10.2105/AJPH.2021.306649

59. U.S. Bureau of Labor Statistics. (2020). Fact sheet: Workplace violence in healthcare in 2018. Retrieved from https://www.bls.gov/iif/oshwc/cfoi/workplace-violence-healthcare-2018.htm

60. Kane, L. (2022). Physician Burnout & Depression Report 2022: Stress, Anxiety, and Anger. *Medscape.* https://www.medscape.com/slideshow/2022-lifestyle-burnout-6014664#2

61. U.S. Government Accountability Office. (2021). Behavioral health and COVID-19 higher risk populations and Federal relief funding. Retrieved from https://www.gao.gov/products/gao-22-104437

62. Song, Y., Mantri, S., Lawson, J., Berger, E., Koenig, H. (2021). Morally injurious experiences and emotions of health care professionals during the COVID-19 pandemic before vaccine availability. *JAMA Netw Open. 4*(11). doi:10.1001/jamanetworkopen.2021.36150

63. Stewart, N., Koza A., Dhaon, S., Shoushtari, C., Martinez, M., & Arora V. (2021). Sleep disturbances in frontline health care workers during the COVID-19 pandemic: Social media survey study. *J Med Internet Res. 23*(5). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8136405/ doi: 10.2196/27331

64. Hennein, R., Mew, E., & Lowe, S. (2021). Socio-ecological predictors of mental health outcomes among healthcare workers during the COVID-19 pandemic in the United States. *PLoS1.* https://doi.org/10.1371/journal.pone.0246602

65. Shanafelt, T., et al. (2021). Suicidal Ideation and Attitudes Regarding Help Seeking in US Physicians Relative to the US Working Population. *Mayo Clinic Proceedings 96*(8): 2067–2080. doi: 10.1016/j.mayocp.2021.01.033

66. Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V.G., Papoutsi, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun.* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3594632

67. McKay, D., & Asmundson, G. (2020). Substance use and abuse associated with the behavioral immune system during COVID-19: The special case of healthcare workers and essential workers. *Addictive behaviors, 110:* 106522. https://doi.org/10.1016/j.addbeh.2020.106522

68. American Nurses Foundation. (2021). COVID-19 Impact Assessment Survey–The second year. Retrieved from https://www.nursingworld.org/practice-policy/work-environment/health-safety/disaster-preparedness/coronavirus

69. Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., Birk, J. L., Brodie, D., Cannone, D. E., Chang, B., Claassen, J., Cornelius, T., Derby, L., Dong, M., Givens, R. C., Hochman, B., Homma, S., Kronish, I. M., Lee, S., Manzano, W., Abdalla, M. (2020). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *General Hospital Psychiatry, 66:* 1–8. https://doi.org/10.1016/j.genhosppsych.2020.06.007

70. Mental Health America. (2021). Survey: The Mental Health of Healthcare Workers. Retrieved from https://mhanational.org/mental-health-healthcare-workers-covid-19

71. Veenema, T., Closser, S., Thrul, J., et al. (2021). Mental Health and Social Support for Healthcare and Hospital Workers During the COVID-19 Pandemic. Johns Hopkins Center for Health Security. Retrieved from https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2021/20210923-C19-mental-health.pdf

72. Prasad, K., McCloughlin, C., Stillman, M., et al. (2021). Prevalence and correlates of stress and burnout among U.S. healthcare workers during the COVID-19 pandemic: A national cross-sectional survey study. *eClinicalMedicine, 35.* doi: 10.1016/j.eclinm.2021.100879

73. Bryant-Genevier, J., Rao, C., Lopes-Cardozo, B., et al. (2021). Symptoms of Depression, Anxiety, Post-Traumatic Stress Disorder, and Suicidal Ideation Among State, Tribal, Local, and Territorial Public Health Workers During the COVID-19 Pandemic — United States, March–April 2021. *MMWR Morb Mortal Wkly Rep 70:*1680–1685. DOI: https://www.cdc.gov/mmwr/volumes/70/wr/mm7048a6.htm?s_cid=mm7048a6_w

74. Uphoff, E., Lombardo, C., Johnston, G., et al. (2021). Mental health among healthcare workers and other vulnerable groups during the COVID-19 pandemic and other coronavirus outbreaks: A rapid systematic review. *PLOS1 16*(8). https://doi.org/10.1371/journal.pone.0254821

75. Pittman, D., Sonis, J., & Harrison, J., (2021). Experiences of Safety-Net Practice Clinicians Participating in the National Health Service Corps During the COVID-19 Pandemic. *Public Health Reports 137*(1): 149-162. https://journals.sagepub.com/doi/full/10.1177/00333549211054083

76. U.S. Health and Human Services, Health Resources Services Administration. (2020). Rural Health Policy Brief. Council on Graduate Medical Education. https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/graduate-medical-edu/publications/cogme-rural-health-policy-brief.pdf

77. Czeisler, M., Marynak, K., Clarke, K., et al. (2020). Delay or Avoidance of Medical Care Because of COVID-19–Related Concerns — United States, June 2020. *MMWR Morb Mortal Wkly Rep, 69:*1250–1257. DOI: http://dx.doi.org/10.15585/mmwr.mm6936a4

78. Yang, Y. & Mason, D. (2022). COVID-19's Impact on Nursing Shortages, The Rise of Travel Nurses, and Price Gouging. *Health Affairs Forefront.* DOI: 10.1377/forefront.20220125.695159

79. NPR, Robert Wood Johnson Foundation, & Harvard T.H. Chan School of Public Health (2020). The impact of coronavirus on households across America. Retrieved from https://cdn1.sph.harvard.edu/wp-content/uploads/sites/21/2020/09/NPR-RWJF-Harvard-National-Report_092220_Final1-4.pdf

80. Press Ganey. (2021). New Findings from Press Ganey. Retrieved from https://www.pressganey.com/about-us/news/new-findings-press-ganey-reveal-millennial-nurses-are-most-likely-quit-and-nearly-30

81. American Association of Critical-Care Nurses. (2021). *Hear us out campaign* reports nurses' COVID reality. Retrieved from https://www.aacn.org/newsroom/hear-us-out-campaign-reports-nurses-covid-19-reality

82. American Health Care Association National Center for Assisted Living. (2022). Bureau of Labor Statistics January Jobs Report. Retrieved from https://www.ahcancal.org/News-and-Communications/Fact-Sheets/FactSheets/BLS-JAN2022-JOBS-REPORT.pdf

83. National Association of City and County Health Organizations. (2020). Forces of change survey report. Retrieved from https://standwithpublichealth.jhsph.edu/stop-harassment-against-workforce/

84. Larkin, H. (2021). Navigating Attacks Against Health Care Workers in the COVID-19 Era. *JAMA, 325*(18): 1822–1824. doi:10.1001/jama.2021.2701

85. National Nurses United. (2020). Workplace violence and COVID-19 in healthcare. Retrieved from https://www.nationalnursesunited.org/sites/default/files/nnu/documents/1121_WPV_HS_Survey_Report_FINAL.pdf

86. National Association of City and County Health Organizations. (2021). Press release: NACCHO requests protection of public health department officials. Retrieved from https://www.naccho.org/blog/articles/naccho-requests-protection-of-public-health-department-officials-and-staff-from-harassment-intimidation-and-threats-of-violence

87. National Association of City and County Health Organizations. (2021). Letter to Attorney General Garland. Retrieved from https://www.naccho.org/uploads/downloadable-resources/Letter-to-AG-Garland-on-PH-Official-Harassment-FINAL.pdf

88. Dill, J. & Duffy, M. (2022). Structural racism and black women's employment in the US health care sector. *Health Affairs 41*(2), 265-272. https://doi.org/10.1377/hlthaff.2021.01400

89. Wolfe, R., Harknett, K., & Schneider, D. (2021). Inequalities at work and the toll of COVID-19. *Health Affairs Health Policy Brief.* DOI: 10.1377/hpb20210428.863621

90. Nguyen, L. Drew, D., Graham, M., et al. (2020). Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study. *The Lancet Public Health, 5*(9): 475–483. https://doi.org/10.1016/S2468-2667(20)30164-X

91. Kaiser Family Foundation. (2020). COVID-19 risks and impacts among healthcare workers by race/ethnicity. Retrieved from https://www.kff.org/report-section/covid-19-risks-and-impacts-among-health-care-workers-by-race-ethnicity-issue-brief/

92. Serafini, K., Coyer, C., Brown Speights, J., et al. (2020). Racism as experienced by physicians of color in the health care setting. *Fam Med. 52*(4):282-287. https://doi.org/10.22454/FamMed.2020.384384

93. Kaiser Health News & The Guardian. (2020). Lost on the frontline. Retrieved from https://www.theguardian.com/us-news/ng-interactive/2020/dec/22/lost-on-the-frontline-our-findings-to-date

94. Batalova, J. (2020). Article 2020: Immigrant Health-Care Workers in the U.S. Migration Policy Institute. Retrieved from https://www.migrationpolicy.org/article/immigrant-health-care-workers-united-states-2018

95. World Health Organization. (2019). Female health workers drive global health. Retrieved from https://www.who.int/news-room/commentaries/detail/female-health-workers-drive-global-health

96. Lotta, G., et al. (2021). Gender, race, and health workers in the COVID-19 pandemic. *The Lancet,397*(10281):1264 https://www.thelancet.com/action showPdf?pii=S0140-6736%2821%2900530-4

97. Templeton, K., C. Bernstein, J. Sukhera, L. M. Nora, C. Newman, H. Burstin, C. Guille, L. Lynn, M. L. Schwarze, S. Sen, and N. Busis. 2019. Gender-based differences in burnout: Issues faced by women physicians. *NAM Perspectives.* Discussion Paper, National Academy of Medicine, Washington, DC. https://doi.org/10.31478/201905a

98. Dudley, J., Mclaughlin, S., & Lee, T. (2021). Why so many women physicians are quitting. Harvard Business Review. Retrieved from https://hbr.org/2022/01/why-so-many-women-physicians-are-quitting?fbclid=IwAR2I4fd0wCFbzQqaJ9NlpSmu5nP_XxebaWNWckHo5Dc-fNcIpnfLeRsudZ0

99. Sanford, J., Agrawal, A., & Miotto, K. (2021). Psychological Distress Among Women Healthcare Workers: A Health System's Experience Developing Emotional Support Services During the COVID-19 Pandemic. Frontiers in Global Women's Health, 2. https://www.frontiersin.org/articles/10.3389/fgwh.2021.614723/full#B16

100. Frank, E., Zhao, Z., Fang, Y., Rotenstein, L., Sen, S., Guille, C. Experiences of Work-Family Conflict and Mental Health Symptoms by Gender Among Physician Parents During the COVID-19 Pandemic. *JAMA Netw Open, 4*(11):e2134315. doi:10.1001/jamanetworkopen.2021.34315

101. Ross, M. & Bateman, (2021). Meet the low-wage workforce. Brookings. Retrieved from https://www.brookings.edu/research/meet-the-low-wage-workforce/

102. Bateman, N. & Ross, M. (2021). The pandemic hurt low wage workers the most, and so far the recovery has helped them the least. Brookings. Retrieved from https://www.brookings.edu/research/the-pandemic-hurt-low-wage-workers-the-most-and-so-far-the-recovery-has-helped-them-the-least/

103. Kinder, M. (2021). With federal aid on the way, it's time for state and local governments to boost pay for frontline workers. Brookings. Retrieved from https://www.brookings.edu/blog/the-avenue/2021/04/06/with-federal-aid-on-the-way-its-time-for-state-and-local-governments-to-boost-pay-for-frontline-essential-workers/

104. Ranji, U., Frederiksen, B., Salganicoff, A., & Long, M., (2021). Women's health policy Issue brief: Women, work and family during COVID-19. Kaiser Family Foundation. Retrieved from https://www.kff.org/womens-health-policy/issue-brief/women-work-and-family-during-covid-19-findings-from-the-kff-womens-health-survey/

105. Bradford, J., Coe, E., Enomoto, K., & White, M. (2021, March). COVID-19 and rural communities: Protecting rural lives and health. McKinsey & Company. Retrieved from https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/covid-19-and-rural-communities-protecting-rural-lives-and-health

106. Srinivasan, M., Cen, X., Farar, B., et al. (2021). Food Insecurity Among Health Care Workers In The US. Health Affairs. Retrieved from https://www.healthaffairs.org/doi/10.1377/hlthaff.2021.00450

107. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Health. (2021). Research Report: Access to affordable care in rural America. Retrieved from https://aspe.hhs.gov/sites/default/files/2021-07/rural-health-rr.pdf

108. Council on Graduate Medication Education. (2022). Rural health policy brief 1: Special Needs in Rural America: Implications for Healthcare Workforce Education, Training, and Practice. Retrieved from https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/graduate-medical-edu/publications/cogme-rural-health-issue-brief.pdf

109. UNC Cecil G. Sheps Center for Health Services Research. (2021). Rural Hospital Closures. Retrieved from https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/

110. O'Keefe, V., Cwik, M., Haroz, E., Barlow, A. (2021). Increasing culturally responsive care and mental health equity with indigenous community Mental Health Workers. *Psychol Serv, 18*(1): 84–92. doi:10.1037/ser0000358

111. University of Washington. (2022). Survey shows disproportionate food insecurities in Washington tribal communities. https://www.washington.edu/populationhealth/2022/01/20/survey-shows-disproportionate-food-insecurities-in-washington-tribal-communities/

112. Awa, W.L., Plaumann, M., Walter U. (2010). Burnout prevention: a review of intervention programs. *Patient Educ Couns, 78*(2):184-90. doi: 10.1016/j.pec.2009.04.008.

113. Pierce, R., Maples, W., Krippner, J., et al. (2021). Results from the National Taskforce for Humanity in Healthcare's Integrated, Organizational Pilot Program to Improve Well-Being *Joint Commission Journal on Quality and Patient Safety, 47*(9): 581-590 https://www.jointcommissionjournal.com/article/S1553-7250(21)00133-1/fulltext

114. Edwards, S., Marine, M., Solberg, L., et al. (2021). Cultural and structural features of zero-burnout primary care practices. *Health Affairs 40*(6): 928-936. https://www.healthaffairs.org/doi/10.1377/hlthaff.2020.02391

115. Institute for Healthcare Improvement. (2017). Critical components for ensuring a joyful, engaged workforce. Retrieved from http://www.ihi.org/Topics/Joy-In-Work/Pages/Critical-Components-for-Ensuring-a-Joyful-Engaged-Workforce.aspx

116. Dyrbye, L., Major-Elechi, B., Taylor, H., Fraser, C., Buskirk, S., & West, C. (2020). Relationship between organizational leadership and health care employee burnout and satisfaction. *Mayo Clinic Proceedings, 95*(4), 698–708. DOI: 10.1016/j.mayocp.2019.10.041

117. Cope, E., Khan, M., & Millender, S. (2022). Trust in health care: Insights from ongoing research. *Health Affairs Forefront.* DOI: 10.1377/forefront.20220110.928032

118. Shanafelt, T., Trockel, M., Rodriguez, A., & Logan, D. (2021). Wellness-centered leadership: Equipping health care leaders to cultivate physician well-being and professional fulfillment. *Academic medicine: Journal of the Association of American Medical Colleges, 96(*5), 641–651. https://doi.org/10.1097/ACM.0000000000003907

119. Institute for Health-Care Improvement. (2022). Improving Health and Health Care Worldwide. Retrieved from http://www.ihi.org/

120. Institute for Healthcare Improvement. (2020). *A Guide to Promoting Health Care Workforce Well-Being During and After the COVID-19 Pandemic.* Boston, Massachusetts: Institute for Healthcare Improvement; Retrieved from http://www.ihi.org/resources/Pages/Publications/guide-to-promoting-health-care-workforce-well-being-during-and-after-the-COVID-19-pandemic.aspx

121. Perlo, J., Balik B, Swensen S, Kabcenell A, Landsman J, Feeley D. (2017). IHI Framework for Improving Joy in Work. IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement. Retrieved from http://www.ihi.org/resources/Pages/IHIWhitePapers/Framework-Improving-Joy-in-Work.aspx

122. Shanafelt, T., Ripp, J., &Trockel, M. (2020). Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA 323*(21): 2133–2134. doi:10.1001/jama.2020.5893

123. Brookings. (2021). Report: Essential but undervalued, millions of healthcare workers aren't getting the pay or respect they deserve in the COVID-19 pandemic. Retrieved from https://www.brookings.edu/research/essential-but-undervalued-millions-of-health-care-workers-arent-getting-the-pay-or-respect-they-deserve-in-the-covid-19-pandemic/

124. Agnes Arnold-Forster, Ph.D., Jacob D. Moses, Ph.D., and Samuel V. Schotland, M.A. (2022). Obstacles to physicians' emotional health — Lessons from history. N Engl J Med 2022; 386:4-7. DOI: 10.1056/NEJMp2112095

125. Linzer, M. & Poplau, S. (2021). Eliminating burnout and moral injury: Bolder steps required. *EClinicalMedicine, 39,* 101090. https://doi.org/10.1016/j.eclinm.2021.101090

126. Defense Finance Accounting Service (DFAS). (n.d.). Retrieved from https://www.dfas.mil/militarymembers/payentitlements/specialpay/

127. U.S. Department of State. (n.d.). U.S. Department of State. Retrieved from https://aoprals.state.gov/content.asp?content_id=177&menu_id=75

128. Ripp, J., & Shanafelt, T. (2020). The health care chief wellness officer: What the role is and is not. *Academic Medicine, 95*(9), 1354–1358. https://doi.org/10.1097/acm.0000000000003433

129. Brower, K. J., Brazeau, C. M. L. R., Kiely, S. C., Lawrence, E. C., Farley, H., Berliner, J. I., Bird, S. B., Ripp, J., & Shanafelt, T. (2021). The evolving role of the chief wellness officer in the management of crises by Health Care Systems: Lessons from the covid-19 pandemic. *NEJM Catalyst, 2*(5). https://doi.org/10.1056/cat.20.0612

130. *Improving clinician well-being to reduce burnout.* The Joint Commission. (n.d.). Retrieved from https://www.jointcommission.org/resources/news-and-multimedia/blogs/improvement-insights/2021/09/improving-clinician-well-being-to-reduce-burnout/

131. Schlak, A. E., Rosa, W. E., Rushton, C. H., Poghosyan, L., Root, M. C., & McHugh, M. D. (2022). An expanded institutional-and national-level blueprint to address nurse burnout and moral suffering amid the evolving pandemic. *Nursing Management, 53*(1), 16–27. https://doi.org/10.1097/01.numa.0000805032.15402.b3

132. Phillips, J., Malliaris, A., & Bakerjian, D. (2021) AHRQ Nursing and Patient Safety. Retrieved from https://psnet.ahrq.gov/primer/nursing-and-patient-safety

133. Reddy, K.P., Schult, T.M., Whitehead, A.M., & Bokhour, B.G. (2021). Veterans Health Administration's Whole Health System of Care: Supporting the Health, Well-Being, and Resiliency of Employees. *Global Advances in Health and Medicine.* doi:10.1177/21649561211022698

134. American Medical Association. (2022). Joy in Medicine Health Systems Recognition Program. Retrieved from https://www.ama-assn.org/practice-management/sustainability/joy-medicine-health-system-recognition-program

135. National Academy of Medicine. (2021). Compendium of key resources for improving clinician well-being. Retrieved from https://nam.edu/compendium-of-key-resources-for-improving-clinician-well-being/

136. Jena, A.B., Meltzer, D.O., Press, V.G., & Arora, V.M. (2012). Why physicians work when sick. *Arch Intern Med. 172*(14): 1107-8. doi: 10.1001/archinternmed.2012.1998

137. McKevitt, C., Morgan, M., Dundas, R., & Holland, W.W. (1997). Sickness absence and 'working through' illness: a comparison of two professional groups. *J Public Health Med. 9*(3): 295-300. doi: 10.1093/oxfordjournals.pubmed.a024633

138. Crout, L.A., Chang, E., & Cioffi, J. (2005). Why do registered nurses work when ill? *J Nurs Adm. 35*(1): 23-8. doi: 10.1097/00005110-200501000-00010.

139. Szymczak, J. (2017). Health care worker presenteeism: a challenge for patient safety. U.S. Department of Health and Human Services Agency for Healthcare Quality and Safety. Retrieved from https://psnet.ahrq.gov/perspective/health-care-worker-presenteeism-challenge-patient-safety#ref12

140. National Conference of State Legislatures. (2020). Paid Sick Leave. Retrieved from https://www.ncsl.org/research/labor-and-employment/paid-sick-leave.aspx

141. National Partnership for Women & Families. (2021). Fact sheet: Paid sick days improve public health. Retrieved from https://www.nationalpartnership.org/our-work/resources/economic-justice/paid-sick-days/paid-sick-days-improve-our-public-health.pdf

142. Kirsch, T.D. & Hodge, J.G. (2019). Health care workers deserve better protections from coronavirus disease 2019. *JAMA Health Forum. 1*(11). doi:10.1001/jamahealthforum.2020.1390

143. The Joint Commission. (2022). Workplace Violence Prevention Resources. Retrieved from https://www.jointcommission.org/resources/patient-safety-topics/workplace-violence-prevention/

144. Dyrbye, L. (2017). Medical licensure questions and physician reluctance to seek care for mental health conditions. *Mayo Clinic Proceedings, 92*(10): 1486–1493. DOI: 10.1016/j.mayocp.2017.06.020

145. The Joint Commission. (2020). Joint Commission Statement on Removing Barriers to Mental Health Care for Clinicians and Health Care Staff. Retrieved from https://www.jointcommission.org/-/media/tjc/documents/covid19/statement-on-removing-barriers-to-mental-health-care-for-clinicians-and-health-care-staff.pdf

146. Federation of State Medical Boards. (2018). Physician Wellness and Burnout Report and Recommendations of the Workgroup on Physician Wellness and Burnout. Retrieved from https://www.fsmb.org/siteassets/advocacy/policies/policy-on-wellness-and-burnout.pdf

147. National Suicide Prevention Hotline. Retrieved from https://suicidepreventionlifeline.org/

148. Halpern, M. (2022). Improving workplace mental health through EAP usage. Mental Health America. Retrieved from https://mhanational.org/blog/improving-workplace-mental-health-through-eap-usage

149. Adibe, B., Hebert, C., Perticone, K., & Dowd, S. (2021). Creating wellness in a pandemic. *NEJM Catalyst.* Retrieved from https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0218

150. Davidson, J., J. Mendis, A. R. Stuck, G. DeMichele, & S. Zisook. (2018). Discussion Paper, Nurse suicide: Breaking the silence. *NAM Perspectives.* National Academy of Medicine. https://doi.org/10.31478/201801a

151. UC San Diego HEAR Program. (2022). Retrieved from: https://medschool.ucsd.edu/som/hear/Pages/default.aspx

152. Ruisoto, P., Ramírez, M.R., García, P.A., Paladines-Costa, Belén, Vaca, S.L., & Clemente-Suárez, V.J. (2021). Social Support Mediates the Effect of Burnout on Health in Health Care Professionals. *Frontiers in Psychology, 11.* DOI=10.3389/fpsyg.2020.623587

153. Albott, C.S., Wozniak, J.R., McGlinch, B.P., Wall, M.H., Gold, B.S., & Vinogradov, S. (2020). Battle Buddies: Rapid Deployment of a Psychological Resilience Intervention for Health Care Workers During the COVID-19 Pandemic. *Anesth Analg, 131*(1):43-54. DOI: 10.1213/ANE.0000000000004912

154. Advisory Board. (2020). Moral Resilience Rounds: Johns Hopkins secret to help staff navigate through stress. Retrieved from https://www.advisory.com/blog/2020/05/moral-resilience-rounds

155. Maben, J., Taylor, C., Reynolds, E. *et al.* (2021). Realist evaluation of Schwartz rounds® for enhancing the delivery of compassionate healthcare: understanding how they work, for whom, and in what contexts. *BMC Health Serv Res 21,* 709. https://doi.org/10.1186/s12913-021-06483-4

156. U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. (2022). Nursing Home COVID-19 Action Network. Retrieved from: https://www.ahrq.gov/nursing-home/index.html

157. Olson, R., Hess, J. A., Parker, K. N., Thompson, S. V., Rameshbabu, A., Luther Rhoten, K., & Marino, M. (2018). From Research-to-Practice: An Adaptation and Dissemination of the COMPASS Program for Home Care Workers. *International journal of environmental research and public health, 15*(12): 2777. https://doi.org/10.3390/ijerph15122777

158. Smith, C. D., C. Balatbat, S. Corbridge, A. L. Dopp, J. Fried, R. Harter, S. Landefeld, C. Martin, F. Opelka, L. Sandy, L. Sato, & Sinsky, C. (2018). Discussion Paper, Implementing optimal team-based care to reduce clinician burnout. *NAM Perspectives.* National Academy of Medicine. https://doi.org/10.31478/201809c

159. Lyon, C., English, A.F., & Chabot Smith, P. (2018) A Team-based care model that improves job satisfaction. *Fam Pract Manag, 25*(2):6-11. https://www.aafp.org/fpm/2018/0300/p6.html

160. Chang, B. P., Cato, K. D., Cassai, M., & Breen, L. (2019). Clinician burnout and its association with team-based care in the Emergency Department. *The American Journal of Emergency Medicine, 37*(11), 2113–2114. https://doi.org/10.1016/j.ajem.2019.06.032

161. Shaw, J., Winget, M., Brown-Johnson, C., Seay-Morrison, T., Garvert, D., Levine, M., Safaeinili, N., & Mahoney, M. (2021). Primary Care 2.0: A prospective evaluation of a novel model of advanced team care with expanded medical assistant support. *The Annals of Family Medicine, 19*(5): 411-418. DOI: 10.1370/afm.2714

162. National Academies of Science, Engineering & Medicine. (2021). Implementing High-Quality Primary Health Care. Retrieved from https://www.nationalacademies.org/our-work/implementing-high-quality-primary-care

163. U.S. Department of Veterans Affairs. (2022). Patient Services: Patient Aligned Care Team (PACT). Retrieved from https://www.patientcare.va.gov/primarycare/PACT.asp

164. Tai-Seale, M., Olson, C., Li, J., Chan, A., Morikawa, C., Durbin, M., Wang, M., & Luft, H. (2017). Electronic health record logs indicate that physicians split time evenly between seeing patients and desktop medicine. *Health Affairs 36*(4): 655-662. DOI: 10.1377/hlthaff.2016.0811

165. Columbia University Department of Biomedical Informatics. (2021). 25x5 Summary Report. Retrieved from https://www.dbmi.columbia.edu/25x5/

166. American Medical Informatics Association. (2022). AMIA 25x5: Reducing documentation burden and optimizing the electronic health record. Retrieved from https://amia.org/about-amia/amia-25x5

167. American Medical Association. (2022). Reducing prior authorizations. National Advocacy Conference. https://www.ama-assn.org/system/files/2022-nac-action-kit-prior-auth.pdf

168. Melnick, E., Dyrbye, L., Sinsky, C., Trockel, M., West, C., Nedelec, L., Tutty, N., & Shanafelt, T. (2020). The association between perceived Electronic Health Record usability and professional burnout among US physicians, *Mayo Clinic Proceedings, 95*(3): 476-487. https://doi.org/10.1016/j.mayocp.2019.09.024

169. American Medical Association. (2021). De-Implementation Checklist. Retrieved from https://www.ama-assn.org/system/files/ama-steps-forward-de-implementation-checklist.pdf

170. Ashton, M. (2018). Getting rid of stupid stuff. New Engl Jour Med 386(19). DOI: 10.1056/NEJMp1809698

171. Shah, T., Kitts, Gold, J., Horvath, Ommaya, A., Opelka, Sato, L., Schwarze, G., Upton, M., & Sandy, L. (2020). EHR optimization and clinician well-being: A potential roadmap toward action. *NAM Perspectives.* Discussion Paper, National Academy of Medicine. https://doi.org/10.31478/202008a

172. AAFP Innovation Labs. Retrieved from https://resources.suki.ai/i/1437132-using-an-ai-assistant-to-reduce-documentation-burden-in-family-medicine/1

173. U.S. Department of Health & Human Services Health Resources & Service Administration. (2022). Telehealth resources. Retrieved from https://telehealth.hhs.gov/providers/

174. Hall, W.J., Chapman, M.V., Lee, K.M., Merino, Y.M., Thomas, T.W., Payne, B.K., Eng, E., Day, S.H., Coyne-Beasley, T. (2015). Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: A systematic review. *Am J Public Health, 105*(12):e60-76. doi: 10.2105/AJPH.2015.302903

175. Shen, M. J., Peterson, E. B., Costas-Muñiz, R., Hernandez, M. H., Jewell, S. T., Matsoukas, K., & Bylund, C. L. (2018). The effects of race and racial concordance on patient-physician communication: A systematic review of the literature. *Jour of Racial and Ethnic Health Disparities, 5*(1): 117–140. https://doi.org/10.1007/s40615-017-0350-4

176. The Commonwealth Fund. (2021). Confronting racism in healthcare. Retrieved from https://www.commonwealthfund.org/publications/2021/oct/confronting-racism-health-care

177. The Commonwealth Fund. (2021). Lift every voice: Capturing and intervening on daily experiences of racism in the healthcare setting. Retrieved from https://www.commonwealthfund.org/grants/lift-every-voice-capturing-and-intervening-daily-experiences-racism-healthcare-settings

178. Robert Wood Johnson Foundation. (2021). Transforming public health data systems. Retrieved from https://www.rwjf.org/en/library/research/2021/09/transforming-public-health-data-systems.html

179. Office of the U.S. Surgeon General. (2021). Confronting health misinformation. Retrieved from: https://www.hhs.gov/surgeongeneral/reports-and-publications/health-misinformation/index.html

180. The Physicians Foundation. (2022). Social determinants of health survey report. Retrieved from https://physiciansfoundation.org/wp-content/uploads/2022/03/SDOH-Survey-Report.pdf

181. Kangovi, S., Mitra, N., Grande, D., Long, J. A., & Asch, D. A. (2020). Evidence-based community health worker program addresses unmet social needs and generates positive return on investment. Health Affairs, 39(2), 207–213. https://doi.org/10.1377/hlthaff.2019.00981

182. National Association of Chronic Disease Directors. Building Resilient Inclusive Communities (BRIC) -Retrieved from https://chronicdisease.org/wp-content/uploads/2022/03/BRIC-Monthly-Webinar_March-232022_BIL-Slides.pdf

183. The Commonwealth Fund. (2021). Confronting racism in healthcare. Retrieved from https://www.commonwealthfund.org/publications/2021/oct/confronting-racism-health-care

184. National Healthcare for the Homeless Council. (2019). Building a sustainable program. Retrieved from https://nhchc.org/wp-content/uploads/2019/08/buiding-a-sustainable-program-policy-brief-hospital-community-benefit.pdf

185. Chandrashekar, P., Gee, R. & Bhatt, J. (2022). Rethinking Community Benefit Programs — A New Vision for Hospital Investment in Community Health. *J Gen Intern Med 37*: 1278–1280. https://doi.org/10.1007/s11606-021-07324-0

186. Young, G. J., Flaherty, S., Zepeda, E. D., Singh, S. R., & Rosen Cramer, G. (2018). Community benefit spending by tax-exempt hospitals changed little after ACA. *Health Affairs, 37*(1), 121–124. https://doi.org/10.1377/hlthaff.2017.1028

187. Kaiser Permanente. (2022). *Doubling affordable housing, economic opportunity investment.* Doubling Affordable Housing, Economic Opportunity Investment. Kaiser Permanente. Retrieved from https://about.kaiserpermanente.org/community-health/news/doubling-affordable-housing-economic-opportunity-investment

188. Office of Policy Development and Research. *Kaiser Permanente's Housing for Health Fund provides agile investing.* Kaiser Permanente's Housing for Health Fund Provides Agile Investing. HUD USER. Retrieved from https://www.huduser.gov/portal/casestudies/study-012420.html

189. U.S. Department of Health and Human Services, Assistant Secretary for Public Affairs (ASPA). (2022). *Biden-Harris Administration awards $103 million in American rescue plan funds to reduce burnout and promote mental health and wellness among health care workforce.* Retrieved from https://www.hhs.gov/about/news/2022/01/20/biden-harris-administration-awards-103-million-american-rescue-plan-funds-reduce-burnout-promote-mental-health-wellness-among-health-care-workforce.html

190. DeRigne, L. A., Stoddard-Dare, P., & Quinn, L. (2016). Workers without paid sick leave less likely to take time off for illness or injury compared to those with paid sick leave. *Health Affairs, 35*(3): 520–527. https://doi.org/10.1377/hlthaff.2015.0965

191. U.S. Department of Health & Human Services, Office of the Assistant Secretary for Health, personal communication, May 9, 2022.

192. Association of State and Territorial Health Officials. (2022). *Legislative Prospectus: Public Health Workforce.* ASTHO. Retrieved from https://www.astho.org/State-Health-Policy/Legislative-Prospectus/Public-Health-Workforce/

193. Plescia, K. G. and M. (2022). *Lawmakers in these 6 states move to combat violence against healthcare workers.* Becker's Hospital Review. Retrieved from https://www.beckershospitalreview.com/workforce/lawmakers-in-these-6-states-move-to-combat-violence-against-healthcare-workers.html

194. Association of State and Territorial Health Officials. (2022). *ASTHO launches resiliency program to support Public Health Workforce.* ASTHO. Retrieved from https://www.astho.org/communications/newsroom/2022/astho-launches-resiliency-program-to-support-public-health-workforce

195. Greater New York Hospital Association. (2022). *Healing, Education, Resilience & Opportunity For New York's Frontline Workforce (Hero-NY).* Retrieved from https://www.gnyha.org/program/hero-ny/

196. Innovation at the Centers for Medicare and Medicaid Services: A vision for the next 10 years. (2021). *Forefront Group.* https://doi.org/10.1377/forefront.20210812.211558

197. Building on the CMS Strategic Vision: Working together for a stronger Medicare. (2022). *Forefront Group.* https://doi.org/10.1377/forefront.20220110.198444

198. U.S. Centers for Medicare & Medicaid. Maryland total cost of care model: *CMS innovation center.* Innovation Center. Retrieved from https://innovation.cms.gov/innovation-models/md-tccm

199. Haft, H. & Klembczyk. (2021). Early successes of the Maryland Primary Care Program. *Health Affairs Forefront Group.* https://doi.org/10.1377/forefront.20211214.304312

200. U.S. Centers for Disease Control & Prevention, National Institute for Occupational Safety & Health. (2022). Healthcare workers: Work stress and mental health. Retrieved from https://www.cdc.gov/niosh/topics/healthcare/workstress.html

201. *H.R.1667-117th Congress (2021-2022): Dr. Lorna Breen Health Care Provider Protection Act* (n.d.). Retrieved from https://www.congress.gov/bill/117th-congress/house-bill/1667

202. The Joint Commission. (2020). Statement on removing barriers to healthcare for clinicians and healthcare staff. Retrieved from https://www.jointcommission.org/-/media/tjc/documents/covid19/statement

203. Hirsch, Q., Davis, S., Stanford, M., Reiter, M., Goldman, M., & Mallow, J. (2021). Beyond broadband: Equity, access, and the benefits of audio-only telehealth. *Health Affairs Forefront.* Retrieved from https://www.healthaffairs.org/do/10.1377/forefront.20210916.819969/full/

204. American Medical Association. (2021). AMA to advocate for telemedicine access, even after COVID-19. Retrieved from https://www.policymed.com/2021/01/ama-to-advocate-for-telemedicine-access-even-after-covid-19.html

205. U.S. Department of Health & Human Services, Health Resources & Services Administration (2022). Health workforce resiliency awards. Retrieved from https://bhw.hrsa.gov/funding/health-workforce-resiliency-awards

206. U.S. Department of Labor. (2022). MHPAEA Report to Congress. Retrieved from https://www.dol.gov/sites/dolgov/files/EBSA/laws-and-regulations/laws/mental-health-parity/report-to-congress-2022-realizing-parity-reducing-stigma-and-raising-awareness.pdf

207. Multi-discipline Licensure Resource Project. (2022). A professional's guide to licensure. Retrieved from https://licensureproject.org/

208. ProviderBridge. (2022). Retrieved from https://www.providerbridge.org/

209. Taylor, N., Porter, C., Rivera-Rodriguez, M., Miller, I.S., Desmarais, N. (2022). Mental health disclosure questions on medical licensure applications: Implications for medical students, residents, and physicians, *Academic Medicine. 10.* doi: 10.1097/ACM.0000000000004682

210. Symposium to Reduce Documentation Burden. (2021). 25x5 Summary Report. Retrieved from https://www.dbmi.columbia.edu/wp-content/uploads/2021/12/25x5-Summary-Report.pdf

211. U.S. Department of Health & Human Services, Office of the National Coordinator for Health IT. (2020). Strategy on Reducing Regulatory and Administrative Burden Relating to the Use of health ITs and EHRs. Retrieved from https://www.healthit.gov/sites/default/files/page/2020-02/BurdenReport_0.pdf

212. U.S. Centers for Disease Control and Prevention. FY2023 budget detail. Retrieved from https://www.cdc.gov/budget/documents/fy2023/FY-2023-CDC-Budget-Detail.pdf

213. Beck, A., Spetz, J., Pittman, P. Frogner, B., Fraher, E., Moore, J., Armstrong, D., & Buerhaus, P. (2021). Investing in a 21st century health workforce: A call for accountability. *Health Affairs Forefront.* DOI: 10.1377/hblog20210913.133585

214. The White House Briefing Room. (2022). White House Fact Sheet: Protecting seniors by improving safety and quality of care in nursing homes. Retrieved from https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/28/fact-sheet

215. Association of State and Territorial Health Officials. (2021). Legislative overview series: 2022 Public health spotlight. Retrieved from https://www.astho.org/globalassets/pdf/legislative-prospectus_public-health-workforce.pdf

216. Long, M., Frederiksen, B., Ranji, U., and Salganicoff, Alina. (2021). Women's healthcare utilization and costs: Findings from the 2020 KFF women's health survey. Retrieved from https://www.kff.org/womens-health-policy/issue-brief/womens-health-care-utilization-and-costs-findings-from-the-2020-kff-womens-health-survey/

217. Prepared for American Association of Medical Colleges by IHS Markit Ltd. (2021). The complexities of physician supply and demand: Projections from 2019-2034. Retrieved from https://www.aamc.org/media/54681/download?attachment

218. U.S. Department of Health & Human Services Centers for Medicare & Medicaid Services. (2021). Press release: CMS Funding 1,000 New Residency Slots for Hospitals Serving Rural & Underserved Communities. Retrieved from https://www.cms.gov/newsroom/press-releases/cms-funding-1000-new-residency-slots-hospitals-serving-rural-underserved-communities

219. U.S. Government Accountability Office. (2018). Physician Workforce: HHS Needs Better Information to Comprehensively Evaluate Graduate Medical Education Funding. Retrieved from https://www.gao.gov/assets/gao-18-240.pdf

220. U.S. Government Accountability Office. (2021). Graduate Medical Education: Programs and Residents Increased during Transition to Single Accreditor; Distribution Largely Unchanged Retrieved from https://www.gao.gov/products/gao-21-329

221. Council on Graduate Medical Education. (2020). Rural Health Policy Brief. Retrieved from https://www.hrsa.gov/sites/default/files/hrsa/advisory-committees/graduate-medical-edu/publications/cogme-rural-health-policy-brief.pdf

222. U.S. Department of Health & Human Services Substance Abuse and Mental Health Administration. (2022). Minority Fellowship Program. Retrieved from https://www.samhsa.gov/minority-fellowship-program

223. U.S. Department of Health & Human Services Human Resources Services Administration. (2022). Nurse Corps Scholarship Program. Retrieved from https://bhw.hrsa.gov/funding/apply-scholarship/nurse-corps

224. U.S. Department of Health & Human Services HRSA. (2022). Apply for loan repayment. Retrieved from https://bhw.hrsa.gov/funding/apply-loan-repayment

225. National Association of City and County Organizations. (2021). Public health loan repayment program, FAQs. Retrieved from https://www.naccho.org/uploads/full-width-images/LRP-FAQ.pdf

226. U.S. Department of Health & Human Services Human Resources Services Administration. (2021). STAR Loan Repayment Program. Retrieved from https://bhw.hrsa.gov/sites/default/files/bureau-health-workforce/funding/star-lrp-stakeholder-kit.pdf

227. The White House. (2021). National COVID-19 Preparedness Plan. Retrieved from https://www.whitehouse.gov/covidplan/

228. McWilliams J.M. (2009). Health consequences of uninsurance among adults in the United States: recent evidence and implications. *The Milbank Quarterly, 87*(2), 443–494. https://doi.org/10.1111/j.1468-0009.2009.00564.x

229. Kaiser Family Foundation. (2019). The uninsured and the ACA. Retrieved from https://www.kff.org/report-section/the-uninsured-and-the-aca

230. Center on Budget and Policy Priorities. (2020). The far-reaching benefits of the Affordable Care Act's Medicaid expansion. Retrieved from https://www.cbpp.org/research/health/chart-book-the-far-reaching-benefits-of-the-affordable-care-acts-medicaid-expansion

231. Kaiser Family Foundation. (2020). The effects of Medicaid expansion under the Affordable Care Act. Retrieved from https://www.kff.org/medicaid/report/the-effects-of-medicaid-expansion-under-the-aca-updated-findings

232. Sandhu, S., Saunders, R., McClellan, M., & Wong, C. (2020). Health equity should be a key value in value-based payment and delivery reform. *Health Affairs Blog.* DOI: 10.1377/hblog20201119.836369

233. Brian C. Castrucci and Monica Valdes Lupi, "When we need them most, the number of public health workers continues to decline," de Beaumont Foundation, May 19, 2020. Retrieved from https://debeaumont.org/news/2020/when-we-need-them-most-the-number-of-public-health-workers-continues-to-decline/

234. Alfonso, Y., Leider, J., Resnick, B., McCullough, J. M., & Bishai, D., (2020). "US public health neglected: Flat or declining spending left states ill equipped to respond to COVID-19," *Health Affairs, 40*(4): 664–71. https://doi.org/10.1377/hlthaff.2020.01084

235. DeBeaumont Foundation. (2021). Research brief: Workplace levels needed to provide basic public health services for all Americans. Retrieved from https://debeaumont.org/wp-content/uploads/2021/10/Staffing-Up-FINAL.pdf

236. The National Academies of Science, Engineering and Medicine. (2020). Future of Nursing, Report brief: Preparing Nurses to Respond to Disasters and Public Health Emergencies. Retrieved from https://nap.nationalacademies.org/resource/25982/FON%20One%20Pagers%20Disasters%20and%20Public%20Health%20Emergencies.pdf

237. Berhause, P. & Retchin, S. (2013). The dormant National Health Care Workforce Commission needs congressional funding to fulfill its promise. *Health Affairs Analysis & Commentary.* https://www.healthaffairs.org/doi/10.1377/hlthaff.2013.0385

238. U.S. Department of Health & Human Services. (2019). National Health Security Strategy, 2019-2022. Retrieved from https://aspr.hhs.gov/ResponseOperations/legal/NHSS/Documents/NHSS-Strategy-508.pdf

239. Federal Emergency Management Agency. (2021). National Preparedness Report. Retrieved from https://www.fema.gov/sites/default/files/documents/fema_2021-national-preparedness-report.pdf

240. American Medical Association. (2022). Reducing prior authorizations. Retrieved from https://www.ama-assn.org/system/files/2022-nac-action-kit-prior-auth.pdf

241. H.R.3173 - Improving Seniors' Timely Access to Care Act of 2021. Retrieved from https://www.congress.gov/bill/117th-congress/house-bill/3173?s=1&r=5

242. Aydin, S. (2020). The effects of ownership structure on time spent by physicians with patients. *European Journal of Environment and Public Health, 4*(1), em0037. https://doi.org/10.29333/ejeph/6292

243. American Medical Association. (2021). AMA Prior authorization physician survey. Retrieved from https://www.ama-assn.org/system/files/prior-authorization-survey.pdf

244. U.S. Health & Human Services Office of the Inspector General. (2018). Medicare Advantage Appeal Outcomes and Audit Findings Raise Concerns About Service and Payment Denials. Retrieved from https://oig.hhs.gov/oei/reports/oei-09-16-00410.asp

245. Medical Group Management Association. (2021). MGMA Annual Regulatory Burden Report. Retrieved from https://mgma.com/resources/government-programs/mgma-annual-regulatory-burden-report-2021

246. American Medical Association. (2021). Consensus Statement on Improving the Prior Authorization Process. Retrieved from https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/arc-public/prior-authorization-consensus-statement.pdf

247. AHIP. (2021). Press release: New analysis shows benefits of electronic prior authorization for patients and providers. Retrieved from https://www.ahip.org/news/press-releases/new-analysis-shows-benefits-of-electronic-prior-authorization-for-patients-and-providers

248. RTI International & Center for Healthcare Advancement. (2021). Evaluation of the Fast PATH Demonstration Report. Retrieved from https://www.ahip.org/documents/Fast-PATH-Evaluation.pdf

249. CAQH Index. (2020). Closing the Gap: The Industry Continues to Improve, But Opportunities for Automation Remain. Retrieved from https://www.caqh.org/sites/default/files/explorations/index/2020-caqh-index.pdf

250. U.S. Department of Health & Human Services, Health and Human Services Resources Administration. (2022). Telehealth resources. Retrieved from https://telehealth.hhs.gov/

251. National Telehealth Policy Resource Center. (2022). CCHP. Retrieved from https://www.cchpca.org/

252. Institute for Clinical Systems. (2022). Retrieved from https://www.icsi.org/about-icsi/

253. Core Quality Measures Collaborative. (2022). Retrieved from https://www.qualityforum.org/CQMC/

254. U.S. Department of Health & Human Services, Centers for Medicare and Medicaid. (2022). Core Quality Measures Collaborative. Retrieved from https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Core-Measures

255. National Academy of Medicine. (2020). Discussion Paper: Electronic Health Record Optimization and Clinician Well-Being: A Potential Roadmap Toward Action. Retrieved from https://nam.edu/wp-content/uploads/2020/07/EHR-Optimization-and-Clinician-Well-Being.pdf

256. Tcheng, J. E., S. Bakken, D. W. Bates, H. Bonner III, T. K. Gandhi, M. Josephs, K. Kawamoto, E. A. Lomotan, E. Mackay, B. Middleton, J. M. Teich, S. Weingarten, and M. Hamilton Lopez, editors. 2017. Optimizing Strategies for Clinical Decision Support: Summary of a Meeting Series. Washington, DC: National Academy of Medicine. https://nam.edu/wp-content/uploads/2017/11/Optimizing-Strategies-for-Clinical-Decision-Support.pdf

257. Jankovic, I., & Chen, J. H. (2020). Clinical Decision Support and Implications for the Clinician Burnout Crisis. *Yearbook of Medical Informatics, 29*(1), 145–154. https://doi.org/10.1055/s-0040-1701986

258. Horvath, K., Sengstack, P., Opelka, F., Kitts, A.B., Basch, P., Hoyt, D., Ommaya, A., Cipriano, P., Kawamoto, K., Paz, H. L., & Overhage, J. M. (2018). A vision for a person-centered health information system. *NAM Perspectives.* Discussion Paper, National Academy of Medicine, Washington, DC. https://doi.org/10.31478/201810a

259. Institute for Healthcare Improvement. (2022). What are the keys to safe, equitable, person-centered telemedicine? Retrieved from http://www.ihi.org/communities/blogs/what-are-the-keys-to-safe-equitable-person-centered-telemedicine?

260. U.S. Department of Health & Human Services, Health and Human Services Resources Administration. (2022). Health equity in telehealth. Retrieved from https://telehealth.hhs.gov/providers/health-equity-in-telehealth/

261. The Office of the National Coordinator for Health Information Technology. (n.d.). Connecting health and care for the nation: A ten year vision to achieve and interoperable health IT infrastructure. Retrieved from https://www.healthit.gov/sites/default/files/ONC10yearInteroperabilityConceptPaper.pdf

262. Gettinger, A. & Zayas-Cabán, T. (2021). HITECH to 21st century cures: clinician burden and evolving health IT policy, *Journal of the American Medical Informatics Association, 28*(5): 1022–1025, https://doi.org/10.1093/jamia/ocaa330

263. Yen, P. Y., Kellye, M., Lopetegui, M., Saha, A., Loversidge, J., Chipps, E. M., Gallagher-Ford, L., & Buck, J. (2018). Nurses' time allocation and multitasking of nursing activities: A time motion study. AMIA *Annual Symposium proceedings.* 1137–1146. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6371290/

264. Sinsky, C., Colligan, L., L., Prgomet, M., Reynolds, S., Goeders, L., Westbrook, J., Tutty, M., & Blike, G. (2016). Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties. *Ann Intern Med,* 165:753-760. doi:10.7326/M16-0961

265. American Association of Medical Colleges. (2020, January 21). Healing the very youngest healers. Retrieved May 12, 2022, from https://www.aamc.org/news-insights/healing-very-youngest-healers

266. Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *Journal of Medical Internet research, 22*(9). https://doi.org/10.2196/21279

267. Christophers, B., Nieblas-Bedolla, E., Gordon-Elliott, J. S., Kang, Y., Holcomb, K., & Frey, M. K. (2021). Mental health of US medical students during the COVID-19 pandemic. *Journal of General Internal Medicine, 36*(10), 3295–3297. https://doi.org/10.1007/s11606-021-07059-y

268. Slavin, S. J., Schindler, D. L., & Chibnall, J. T. (2014). Medical student mental health 3.0: improving student wellness through curricular changes. *Academic medicine: Journal of the Association of American Medical Colleges, 89*(4), 573–577. https://doi.org/10.1097/ACM.0000000000000166

269. Reith T. P. (2018). Burnout in United States Healthcare Professionals: A Narrative Review. *Cureus, 10*(12). https://doi.org/10.7759/cureus.3681

270. Frajerman, A., Morvan, Y., Krebs, M. O., Gorwood, P., Chaumette, B. (2019). Burnout in medical students before residency: A systematic review and meta-analysis. *Eur Psychiatry, 55:* 36-42. doi: 10.1016/j.eurpsy.2018.08.006

271. Yale School of Medicine. (2018). Healer's art. Retrieved from https://medicine.yale.edu/event/healers-art-1-4/

272. Drolet, B. C., & Rodgers, S. (2010). A comprehensive medical student wellness program--design and implementation at Vanderbilt School of Medicine. *Academic medicine: journal of the Association of American Medical Colleges, 85*(1): 103–110. https://doi.org/10.1097/ACM.0b013e3181c46963

273. National Academies of Sciences, Engineering, and Medicine; National Academy of Medicine; Committee on the Future of Nursing 2020–2030, Flaubert, J. L., Le Menestrel, S., Williams, D. R., & Wakefield, M. K. (Eds.). (2021). *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity.* National Academies Press (US). https://www.nationalacademies.org/our-work/the-future-of-nursing-2020-2030

274. Schlak, A. E., Rosa, W. E., Rushton, C. H., Poghosyan, L., Root, M. C., & McHugh, M. D. (2022). An expanded institutional-and-national-level blueprint to address nurse burnout and moral suffering amid the evolving pandemic. *Nursing management, 53*(1): 16–27. https://doi.org/10.1097/01.NUMA.0000805032.15402.b3

275. American Association of Medical Colleges. (2019). Navigating the hidden curriculum in medical school. Retrieved from https://www.aamc.org/news-insights/navigating-hidden-curriculum-medical-school

276. Lehmann, L. S., Sulmasy, L. S., Desai, S., & ACP Ethics, Professionalism and Human Rights Committee. (2018). Hidden Curricula, Ethics, and Professionalism: Optimizing Clinical Learning Environments in Becoming and Being a Physician: A Position Paper of the American College of Physicians. *Annals of internal medicine, 168*(7): 506–508. https://doi.org/10.7326/M17-2058

277. Joseph, O.R., Flint, S.W., Raymond-Williams, R., Awadzi, R., & Johnson, J. (2021). Understanding healthcare students' experiences of racial bias: A narrative review of the role of implicit bias and potential interventions in educational settings. *Int J Environ Res Public Health.* 18(23). doi:10.3390/ijerph182312771

278. Wilby, K. J., Cox, D., Whelan, A. M., Arya, V., Framp, H., & Mansour, S. (2022). Representation of diversity within written patient cases: Exploring the presence of a "hidden curriculum". *J Am Coll Clin Pharm,* 1-7. doi:10.1002/jac5.1628

279. University of Pittsburgh. (2018, September 28). Pitt School of Medicine Program Serves as Model for Meeting the Mental Health Needs of Its Students. Retrieved from https://psychiatry.pitt.edu/news/pitt-school-medicine-program-serves-model-meeting-mental-health-needs-its-students

280. Bird, A., & Pincavage, A. (2016). A Curriculum to Foster Resident Resilience. *MedEdPORTAL : the Journal of Teaching and Learning Resources, 12.* https://doi.org/10.15766/mep_2374-8265.10439

281. American Association of Medical Colleges. (2021). Medical school applicants and enrollments hit record highs; underrepresented minorities lead the surge. Retrieved May 12, 2022, from https://www.aamc.org/news-insights/medical-school-applicants-and-enrollments-hit-record-highs-underrepresented-minorities-lead-surge

282. Hill, K. A., Samuels, E. A., Gross, C. P., Desai, M. M., Sitkin Zelin, N., Latimore, D., Huot, S. J., Cramer, L. D., Wong, A. H., & Boatright, D. (2020). Assessment of the Prevalence of Medical Student Mistreatment by Sex, Race/Ethnicity, and Sexual Orientation. *JAMA internal medicine, 180*(5), 653–665. https://doi.org/10.1001/jamainternmed.2020.0030

283. Harold Amos Medical Faculty Development Program. (2022). Retrieved from https://www.amfdp.org/

284. Wake Forest University Medical School. (2022). Navigating Medical School. Retrieved from https://school.wakehealth.edu/Education-and-Training/Student-Affairs/Student-groups/Navigating-Medical-School

285. Callese, T., Keskinyan, V., Moses-Hampton, M., Davis, G., Ykimoff, J., Laurence, olleen, Wirth, S., Kaye, S., McNamara, K., Suggs, C., Hussain, I., Bentley, P., Reynolds, P., & Strowd, R. (2019). The navigating medical school program: An innovative student-led near peer mentoring program for strengthening the medical school learning environment. *Journal of Contemporary Medical Education, 9*(4): 87. https://doi.org/10.5455/jcme.20190701053131

286. Davis, C. R., & Gonzalo, J. D. (2019). How Medical Schools Can Promote Community Collaboration Through Health Systems Science Education. *AMA Journal of Ethics, 21*(3): E239–E247. https://doi.org/10.1001/amajethics.2019.239

287. White-Williams, C., Rossi, L., Bittner, V., Driscoll, A., Durant, R., Granger, B., Graven, L., Kitko, L., Newlin, K., Shirey, M. (2020). Addressing social determinants of health in the care of patients with heart failure: A scientific statement from the American Heart Association. *Circulation, 141*(22): e841-863.

288. Andermann, A., & CLEAR Collaboration. (2016). Taking action on the social determinants of health in clinical practice: a framework for health professionals. *Canadian Medical Association Journal, 188*(17-18): E474–E483. https://doi.org/10.1503/cmaj.160177

289. Balls-Berry, J. E., & Acosta-Pérez, E. (2017). The Use of Community Engaged Research Principles to Improve Health: Community Academic Partnerships for Research. *Puerto Rico health sciences journal, 36*(2): 84–85. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5582944/

290. Rotenstein, L. S., Sinsky, C., & Cassel, C. K. (2021). How to measure progress in addressing physician well-being: Beyond burnout. *JAMA, 326*(21): 2129–2130. https://doi.org/10.1001/jama.2021.20175

291. American Nurses Credentialing Center. (2022). ANCC Magnet Recognition Program. Retrieved from https://www.nursingworld.org/organizational-programs/magnet/

292. U.S. Centers for Disease Control & Prevention. (2022). COVID-19 Community levels: A measure of the impact of COVID-19 illness on health and healthcare systems. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/science/community-levels.html

293. Office of the U.S. Surgeon General. (2021). Toolkit for Addressing Health Misinformation. Retrieved from: https://www.hhs.gov/surgeongeneral/reports-and-publications/health-misinformation/index.html

294. American Psychological Association. (2022). Science-based strategies to help healthcare professionals manage stress. Retrieved from http://image.info.apa.org/lib/fe8d13727663027574/m/7/6aee53f4-4118-476d-af1b-55755c6b0b8b.pdf

295. Institute for Healthcare Improvement. (2018). Psychological PPE: Promote healthcare workforce mental health and well-being. Retrieved from http://www.ihi.org/resources/Pages/Tools/psychological-PPE-promote-healthcare-workforce-mental-health-and-well-being.aspx

296. Maslach, C. & Leiter, M. (2021). How to measure burnout accurately and ethically. *Harvard Business Review*. Retrieved from https://hbr.org/2021/03/how-to-measure-burnout-accurately-and-ethically

297. Patient-Centered Outcomes Research Institute. (2022). Broad Pragmatic Studies Funding Announcement--2022 Standing PFA. Retrieved from https://www.pcori.org/funding-opportunities/announcement/broad-pragmatic-studies-funding-announcement-2022-standing-pfa

298. Dzau, V. J., Kirch, D., & Nasca, T. (2020). Preventing a parallel pandemic — a national strategy to protect clinicians' well-being. *New England Journal of Medicine, 383*(6): 513–515. https://doi.org/10.1056/nejmp2011027

299. U.S. Department of Health and Human Services, Health Resources & Services Administration. For researchers. Retrieved from https://telehealth.hhs.gov/for-researchers/

300. Offodile, A. C., Cerullo, M., Bindal, M., Rauh-Hain, J. A., & Ho, V. (2021). Private Equity Investments In Health Care: An Overview Of Hospital And Health System Leveraged Buyouts, 2003-17. *Health affairs (Project Hope), 40*(5), 719–726. https://doi.org/10.1377/hlthaff.2020.01535

301. Braun, R. T., Jung, H.-Y., Casalino, L. P., Myslinski, Z., & Unruh, M. A. (2021). Association of Private Equity Investment in US nursing homes with the quality and cost of care for long-stay residents. *JAMA Health Forum, 2*(11). https://doi.org/10.1001/jamahealthforum.2021.3817

302. Gupta, A., Howell, S., Yannelis, C., & Gupta, A. (2021). Does private equity investment in healthcare benefit patients? evidence from nursing homes (Working paper). *National Bureau of Economic Research.* https://doi.org/10.3386/w28474

303. American Society of Anesthesiologists. (2022). Using AI to create work schedules significantly reduces physician burnout, study shows. Retrieved from https://www.asahq.org/about-asa/newsroom/news-releases/2022/01/using-ai-to-create-work-schedules-significantly-reduces-physician-burnout#:~:text=DALLAS%20%E2%80%93%20Artificial%20intelligence%20(AI)%2D,American%20Society%20of%20Anesthesiologists'%20ADVANCE

304. Jercich, K. (2021). Scheduling systems lead to longer wait times for Black patients. *Healthcare IT News.* Retrieved from https://www.healthcareitnews.com/news/study-scheduling-systems-lead-longer-wait-times-black-patients