

# UNDER WHAT WORKING CONDITIONS?

An Examination of Health  
Worker Occupational  
Health and Compensation



## **Prepared By**

---

Fitzhugh Mullan Institute for Health Workforce Equity  
The George Washington University

## **Suggested Citation**

---

Ziemann M, Pittman P. Under what working conditions? An examination of health worker occupational health and compensation. Fitzhugh Mullan Institute for Health Workforce Equity, George Washington University. May 2022. [www.gwhwi.org/hweseries.html](http://www.gwhwi.org/hweseries.html)

## **Questions**

---

For questions regarding this report, please contact Patricia Pittman at [ppittman@gwu.edu](mailto:ppittman@gwu.edu).

## **ACKNOWLEDGEMENT**

---

This series was partially supported by the Kaiser Permanente Institute for Health Policy.

We would like to thank Philip Alberti, Andrew Bazemore, Shannon Brownlee, Claire Gibbons, Erin Holve, Len Nichols, Luis Padilla, Murray Ross, and Michelle Washko for their review and feedback on both the framework and early drafts of the evidence reviews.

---

202-994-3423  
[gwmi@gwu.edu](mailto:gwmi@gwu.edu)  
[www.gwhwi.org](http://www.gwhwi.org)

Fitzhugh Mullan  
Institute for Health  
Workforce Equity

---

THE GEORGE WASHINGTON UNIVERSITY

---

2175 K Street NW  
Suite 250  
Washington, DC 20036

# THE HEALTH WORKFORCE EQUITY EVIDENCE REVIEW SERIES

The Fitzhugh Mullan Institute for Health Workforce Equity defines health equity as *a world in which there is a diverse health workforce that has the competencies, opportunities, and courage to ensure everyone has a fair opportunity to attain their full health potential.*

At least six critically important factors drive health workforce equity, as shown in the figure below. These domains apply to workers across the health care spectrum, including home healthcare, support staff, allied health professionals, public health, physicians, nurses, and many others.

This series reviews existing literature on the nature and magnitude of each problem, the impact of this problem on health equity, and the policies and programs that affect it.

**DOMAIN 6:** Healthcare workers provide care under difficult working conditions. This two part evidence review focuses on the occupational health and safety of workers, as well as poor compensation for a subset of them.



## Part 1: Occupational Health

### The Problem

Occupational health and safety issues are longstanding challenges for the health workforce, as demonstrated during the COVID-19 pandemic. Among the occupational hazards that can result in harm are biological (e.g., infectious disease), chemical, ergonomic (e.g., heavy lifting), physical (e.g., excessive noise, heat), and importantly, psychosocial (stress, strain, or interpersonal problems of the worker).<sup>1</sup> The resulting illness, injury, and trauma resulting from these hazards are significant for health workers, and many also indirectly hurt patient care and even employers' bottom lines. This white paper focuses on three main categories of hazards facing healthcare workers: injuries and illness, violence, and burnout.

### *Injuries and Illness*

The healthcare and social assistance sector, which includes ambulatory health care services, hospitals, and nursing and residential care facilities,<sup>2</sup> reports more injury and illness cases than any other private industry sector. This trend has held steady over the years but escalated significantly during COVID when the number of reported cases of injuries and illnesses rose from 575,200 to 806,200 among healthcare and social assistance workers between 2019 and 2020, an increase of 40% (while remaining stable or decreasing in other essential industries).<sup>3</sup>

Nurses working in any type of healthcare facility and healthcare workers who work in nursing and residential care facilities have the greatest incidence of injuries and illness resulting in days away from work. Nursing assistants, specifically, have the highest number of cases of all occupations.<sup>3</sup> This was true before COVID, but cases in this profession skyrocketed with the onset of the pandemic – increasing more than three-fold between 2019 and 2020 from 27,590 to 96,480.<sup>3</sup>

As of February 2020, the nation's network of federal and state Occupational Safety and Health Administration (OSHA) offices has received almost 4,000 healthcare industry COVID-related complaints.<sup>4</sup> Many of these complaints were due to a lack of adequate personal protection equipment (PPE). A 2020 study that analyzed OSHA complaints across essential industries, including health care, related to COVID-19 mortality data found that OSHA complaints correlated with COVID-19 deaths 16 days later.<sup>5</sup> In-depth, investigative reporting documented more than 3,600 healthcare worker deaths in the first year of the pandemic alone; many of those who died had concerns about PPE before their deaths.<sup>6</sup>

Organizational factors that shape the work environment are frequently cited as predictors of workplace safety.<sup>7,8</sup> Shift work and required overtime, in particular, are predictive of healthcare worker injuries in the published literature, with evening and night shift employees at greater risk for sustaining an occupational injury.<sup>8,9</sup> There is also evidence that nurses from units with low staffing and poor organizational climates were twice as likely as nurses on well-staffed and better-organized units to report risk factors, needle stick injuries, and near misses.<sup>10</sup>

## ***Violence***

Healthcare workers experience high rates of injuries caused by workplace violence, and these rates are increasing.<sup>11</sup> They are five times as likely to suffer a workplace violence injury than workers overall and accounted for 73% of all nonfatal workplace injuries and illnesses due to violence in 2018. Again, nurses are disproportionately burdened by this occupational harm, with incident rates of violence against nurses three times greater than that for all other occupations.

Workers attribute workplace violence to poor leadership and a lack of policy in this area.<sup>12</sup> In one study, among participants who had experienced workplace violence, 41% believed that management showed little or no concern for their safety, and 22% reported that they thought the work environment was unsafe to perform their duties.<sup>13</sup>

## ***Burnout & Moral Injury***

Concerns around healthcare worker burnout, a psychological syndrome involving (1) emotional exhaustion, (2) depersonalization, and (3) a diminished sense of personal accomplishment,<sup>14</sup> were growing before the pandemic; surveys found that close to half of physicians and 35-45% of nurses experienced it.<sup>15</sup> By mid-2020, a survey by Mental Health America reported burnout among health professionals at 54%.<sup>16</sup> Burnout is strongly associated with other psychosocial disorders among healthcare workers, including depression and suicide ideation.<sup>17</sup> In part, due to the high-profile instances of physician and nurse suicides during COVID, there is now heightened attention to the risk of suicide in the healthcare and public workforce.<sup>18, 19</sup>

The causes of burnout are rooted in the workplace environment and organizational-level factors.<sup>15,20</sup> Studies have found these to include excessive work hours, inadequate staffing levels<sup>20-22</sup> and ratios, shift work,<sup>23,24</sup> poor organizational climate, and a sense of loss of autonomy or control.<sup>8,21,25</sup> Increasingly, administrative and clerical burdens are also cited as drivers of burnout, especially among physicians.<sup>15</sup> This includes tasks related to electronic health record documentation and billing. Multiple studies have documented the increasing administrative demands of physicians and their association with provider and patient dissatisfaction and burnout.<sup>15,26-28</sup>

Moral injury is a specific type of contributor to burnout. The literature describes moral injury as the “psychological, biological, spiritual, behavioral, and social impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations”.<sup>29</sup> Measurement of this problem among healthcare workers is just beginning, and researchers are comparing and contrasting the concept and measurement of burnout to moral injury.<sup>30</sup>

### **Problem Statement**

The United States’ 22 million health care workers experience the highest rates of occupational injury, illness, and burnout of any sector.

## Relationship to Health Equity

The disproportionate burden of injury, illness, and psychological distress faced by healthcare workers compared to the general population suggests that this is a health equity issue. To take but one health outcome – suicide - we know that physicians and nurses are more than double as likely to take their own lives compared to the general population.<sup>31</sup> Particularly affected are frontline clinicians and assistants, but the problem is also prevalent in other settings, including long-term care, home care, and primary care workplaces.<sup>6,32,33</sup>

There are also disparities in occupational health outcomes within the workforce, including by occupation, race/ethnicity, and healthcare setting. As previously mentioned, nursing is an especially dangerous healthcare occupation, with rates of injury and illness exceeding those in other healthcare occupations and highest among nursing assistants.<sup>3</sup> Registered nurses have also experienced higher COVID-19 infection and death rates than other healthcare workers.<sup>6,34</sup> There is also evidence of the disproportionate occupational harms experienced by health care workers representing racial and ethnic minorities. For example, a cross-sectional study of direct care workers in nursing homes finds that Black, immigrant workers were three times as likely to report job strain as White workers<sup>35</sup>. Although Filipino RNs are only 4% of the nurse workforce, they suffered almost one-third of all nurse COVID deaths.<sup>36</sup> Regarding the healthcare setting, nursing and residential care facilities have the highest rates of injury and COVID deaths and significantly higher rates of violence than a hospital or ambulatory setting.<sup>3,11,37</sup> An investigative report tracking the deaths of over 3,600 healthcare workers due to COVID found that only 30% of those workers were hospital employees, and of those, relatively few deaths occurred among workers employed by well-funded, academic medical centers.<sup>6</sup>

There is also compelling evidence for a relationship between poor occupational health outcomes for workers, especially psychosocial ones, and both payers' costs and patient outcomes. Burnout among healthcare workers is associated with high absenteeism, low productivity, turnover, and attrition.<sup>15</sup> Studies have also found burnout is independently associated with physicians' intent to leave their practice in the short term.<sup>38,39</sup> Given that high staff turnover results in reduced productivity and higher recruitment costs, these data should be of concern to payers. Burnout-attributed costs are estimated at \$16,736<sup>41</sup> per worker and replacing a nurse costs \$37,700-\$58,400.<sup>40</sup>

Burnout and other occupational harms experienced by healthcare workers also have negative implications for the patients they serve. Poor mental health and burnout among nurses and physicians are consistently associated with lower quality of care, medical errors, and other risks to patient safety, including mortality.<sup>17,42-44</sup> One study analyzing cost containment data on hospital infections and secondary survey data from the American Hospital Association and 7,076 registered nurses estimated that in hospitals where burnout is reduced by 30%, urinary tract and surgical infections could be reduced by over 6,000, for an annual cost saving of up to \$68 million.<sup>25</sup> An important mechanism for this effect appears to be low nurse staffing levels which lead to job dissatisfaction,<sup>22,45,46</sup> as well as other elements of the nurse work environment, including nurse participation in hospital affairs; nursing foundations for quality care; nurse manager leadership, ability, and support; and collegial nurse-physician relationships.<sup>47</sup> An

association between burnout and measures of medical error has been reported in dentistry. One analysis based on a national sample of survey data found dentists with high burnout risk were more likely to report concern that they had committed a dental error in the past six months than dentists with lower burnout risk.<sup>48</sup>

Burnout also jeopardizes efforts to promote equity in healthcare delivery, with a longitudinal cohort study of about 3,500 medical students and resident physicians finding symptoms of burnout to be associated with greater explicit and implicit racial bias.<sup>49</sup>

### Occupational Health and Safety is a Health Equity Issue

- Poor occupational health and safety is preventable & affects health care workers more than any industry.
- The effects of unsafe and unfair work conditions affect different occupations within the health workforce, settings, women, and people of color differently.
- These disparities also exacerbate patient-level inequities.

### Policies & Programs That Impact Health Care Worker Safety & Wellbeing

While some hazards are inherent to caretaking, such as proximity to infectious diseases, others may be mitigated by changing environmental factors, such as the supply of appropriate PPE and training in its proper use, adequate staffing levels, and policies regarding violence. Many of these factors could be implemented at the organizational level, but when they are not, government, and sometimes accreditors, may step in and impose standards or regulations.

With regard specifically to burnout, in 2018, the National Academies of Medicine published a conceptual model of factors affecting clinician wellbeing and resilience. They point out that a focus on individual-level factors, such as resilience, has been ineffective.<sup>50</sup> For example, a new randomized study on mindfulness to reduce burnout among pediatricians showed no evidence of effectiveness.<sup>51</sup> In this review, we focus on organizational and governmental level policies that may be of particular interest.

Organizational level factors are consistently cited as prominent drivers of poor occupational health and safety among healthcare workers.<sup>7,8,17,52-54</sup> Conversely, **organizational strategies have shown to be effective in mitigating organizational hazards and improving provider and patient safety and wellbeing.** These include optimizing workflow and reducing clinician demands by increasing nurse staffing levels, implementing team-based models of care, and incorporating medical scribes;<sup>55,56</sup> implementing leadership models that create a culture of inclusion, control, and empowerment among employees;<sup>17,57,58</sup> and ensuring adequate access to crisis supports for workers. Organizations can also show a commitment to a safety culture through policies and

protocols that help protect all workers, such as adopting Safety & Health Management Systems and zero-tolerance policies for abuse and violence. These are actions that OSHA and the Joint Commission advocate all organizations adopt.<sup>59,60</sup>

**Federal and state policies play a critical role in incentivizing and mandating specific actions by employers to protect health care workers. An important area in this regard is protecting the right to organize.** Collective bargaining agreements often go beyond salaries and benefits to include worker safety issues such as: barring mandatory overtime, rest periods, health and safety provisions, grievance processes, protest of assignment when deemed unsafe, requirements to report injuries and hazards, non-discrimination, and practices relating to scheduling changes and shift length.<sup>61</sup> Research shows that unionization is associated with a safer work environment and lower turnover. In addition, studies show that union workers are less likely than nonunionized workers to face retaliation for speaking out against inadequate safety procedures, as observed during the COVID-19 pandemic.<sup>62</sup> Unionization of health care workers has remained relatively low throughout the 2000s, at about 7%.<sup>63</sup> The process for forming a labor union at a worksite is notoriously difficult, which has led to numerous attempts to modify the laws regulating unionization. Currently, the proposed Protecting the Right to Organize Act of 2021 (PRO Act) attempts to make unionization easier.<sup>64</sup> The legislation passed the U.S. House of Representatives but, as of 2021, does not have sufficient votes in the Senate.

A second major area of federal policy is **the mandates and enforcement regulations that protect worker safety.**<sup>65</sup> COVID-19 spotlighted the need for federal occupational standards for healthcare workers. This was evident by the widespread shortages of PPE early in the pandemic,<sup>66</sup> nearly 4,000 healthcare industry complaints filed with OSHA at the time of writing,<sup>67</sup> and over 3,600 recorded U.S. healthcare worker deaths in the first year of the pandemic alone.<sup>6</sup> In response, federal agencies issued emergency regulations, including a Centers for Medicare and Medicaid Services (CMS) rule mandating that most healthcare workers are vaccinated against COVID-19 and an OSHA-adopted Healthcare Emergency Temporary Standard requiring healthcare facilities to conduct hazard assessments, have a virus mitigation plan, and ensure the provision of PPE to workers, among other actions.<sup>68</sup> However, compliance with federal standards remains a challenge,<sup>69</sup> and pushback from states and employers healthcare institutions persists.<sup>70,71</sup> Further, temporary emergency standards are time-limited, and there are reports that federal agencies have ignored or overlooked regulatory non-compliance.<sup>4,5,36,72</sup> Advocates have called on OSHA to make the Healthcare Emergency Temporary Standard permanent.<sup>73</sup> There have also been widespread calls for OSHA to develop airborne pathogen standards, similar to the agency's 1991 bloodborne pathogen standard,<sup>74</sup> which has prevented numerous healthcare worker injuries and illnesses.<sup>75,76</sup> California's airborne pathogen standard, adopted in 2009, may serve as a model for a federal standard.<sup>77</sup>

Over the last twenty years, advocates have called on states and the federal government to **mandate safe staffing levels for nurses.** Multiple research reviews have found a significant relationship between low nurse staffing levels and poor nurse, employer, and patient outcomes, including burnout, workplace injuries, turnover, medical errors, adverse patient events, quality of care, and mortality.<sup>22,25</sup> California is the only state thus far to have mandated staffing levels.

Research on the outcomes of this law shows that it increased both RN and nurse assistant staffing levels. However, the research on whether those increases improved patient outcomes is mixed, possibly because of the phased rollout of the law.<sup>78</sup> Legislation is pending at the federal level that would impose staffing mandates,<sup>79</sup> and several states are considering strengthening laws that require nurse staffing committees and/or public reporting of nurse staffing levels to consider mandates.

Many professional regulatory policies may have a detrimental effect on the mental health of licensed health personnel, and there have been calls for change. A 2018 analysis found that **medical licensure boards in 32 states still asked questions about a history of mental illness** that may violate the Americans with Disabilities Act.<sup>82</sup> These questions may deter applicants from seeking licenses, stigmatize mental illness, and prevent help-seeking behavior. Consequently, both the American Psychiatric Association and the American Medical Association have recommended that state licensing boards not ask about mental illness.<sup>83–85</sup>

Another instance of an adverse effect of professional regulation concerns **state scope of practice laws for advanced practice clinicians**. A 2019 review of empirical literature found that nurse practitioners and physician assistants have higher job satisfaction and lower burnout when they perceive greater control and independence, a finding that is consistent with the general research on worker upskilling and expanded roles.<sup>86</sup> Thus, easing state scope of practice laws regulating most health professionals to be consistent with their education and training would also help reduce burnout among this particular group of health care workers.

Federal and state programs that facilitate **reporting and enforcement regarding worker compensation, health, and safety are key areas that could be strengthened**. At the federal level, these include the Department of Justice, the Civil Rights Reporting Portal, and five Department of Labor agencies charged with enforcing whistleblower protections (OSHA being the most relevant for health worker safety and wellbeing). OSHA administers more than 20 whistleblower protection laws that prevent retaliation against employees for reporting unsafe or unfair working conditions.<sup>87</sup> In addition, many states have whistleblower protections for healthcare workers,<sup>88</sup> and the Joint Commission accreditation provides an online platform for reporting a patient safety concern or complaint about a health care organization.<sup>89</sup> A review of the literature on whistleblowing in healthcare revealed positive consequences, including improved patient safety, successful employment claims, and retraction of published articles with fraudulent data. However, the whistleblower's negative occupational, legal, financial, and socioemotional consequences were also cited.<sup>90</sup> Experts have called for strengthening the occupational complaint reporting systems and whistleblower laws given current concerns of worker intimidation, underreporting, lack of compliance and enforcement, and barriers to reporting for vulnerable workers, including immigrants.<sup>90–93 92</sup>

Lastly, it is worth considering the role of **voluntary accreditation initiatives** that aim to improve workplace conditions. Two examples exist in nursing: the ANCC Magnet® for large hospitals and AANC Pathways to Excellence, which is similar, but for smaller hospitals. While critics are suspicious of a “pay to play” mentality, whereby poor performance may be overlooked to

increase the number of organizations seeking accreditation status (and revenues to accreditor), studies of Magnet hospitals show working conditions and worker outcomes are better than equivalent hospitals without Magnet status.<sup>94</sup>

## **Policies and Programs that Impact Occupational Health & Safety**

Organizational factors often drive poor occupational health outcomes in the health care sector. Conversely, organizational strategies like increasing nurse staffing levels, implementing team-based models of care, and incorporating medical scribes have been shown to be effective in improving healthcare worker safety and well-being. Federal and state policies also play a critical role in protecting healthcare workers. Specifically, evidence supports policies protecting workers' right to unionize, expanding scope of practice for advanced practice clinicians, and setting and enforcing occupational health standards as effective strategies for promoting worker safety and well-being.

## Part 2: Healthcare Worker Compensation

### The Problem

The nation's 7 million healthcare support workers provide critical patient care and support, especially for vulnerable populations like the elderly and Medicaid recipients. Demand for these occupations, which include direct care workers (DCWs), clinical and allied health aides, and health care service workers, is growing.<sup>95</sup> The critical role these professionals play stands in sharp contrast with their compensation levels regarding wages and benefits.<sup>96</sup>

As of 2019, nearly half of healthcare support workers earned less than \$15 per hour,<sup>97</sup> with a median wage of \$13.48, or about \$28,000/year. Direct care workers (DCW), like home health and personal care aides and nursing assistants, earned a median wage of \$12.80 per hour before COVID-19.<sup>32</sup> In every state and DC, the median wage for DCWs is lower than other occupations with similar entry-level requirements, such as retail workers and janitors.<sup>32</sup> Further, until COVID-19, when hazard pay was introduced in many states,<sup>98</sup> wages for healthcare support workers were virtually stagnant for years and had not kept pace with inflation. Median wages for DCWs rose only \$0.10 between 2009 and 2010.<sup>32</sup>

Many healthcare support workers also lack access to employer benefits like health insurance and paid leave. Studies show that benefits improve worker retention,<sup>99–101</sup>. Yet, only about half of home health and personal care aides have employer-based health insurance (13% have no insurance), while just 30% of the lowest wage workers have paid leave (in contrast to over 90% of the highest-paid workers).<sup>102</sup> There are also gaps in federally mandated leave benefits that disproportionately affect healthcare support workers. For example, about one-fifth of healthcare workers excluded from emergency paid sick leave during COVID earned less than \$22,000/year,<sup>103</sup> and criteria for even receiving unpaid Family and Medical Leave Act (FMLA) (minimum hours, job tenure, employer size) disproportionately exclude women and people of color<sup>104</sup>— demographics heavily concentrated in the healthcare support workforce.

### Problem Statement

Approximately seven million healthcare support workers in the United States are severely under-compensated, earning less than \$15 dollars an hour and often lacking basic benefits like sick leave and health insurance.

### Relationship to Health Equity

The demographics of the healthcare support workforce – and DCWs in particular – make their poor compensation an inherent issue of equity. The workforce is disproportionately composed of women, people of color, and immigrants.<sup>32,96</sup> We know that among DCWs, non-white women earn less than all other demographic groups, while White men earn the most.<sup>32</sup> One study

showed that wages for Black women in the healthcare support workforce were declining over time.<sup>105</sup>

Research suggests that low compensation impacts other areas of healthcare workers' lives. Direct care workers, for example, experience high rates of financial instability and reliance on public assistance, as well as food insecurity.<sup>32,106</sup> Nearly half of DCWs receive one or more public benefits like food stamps or Medicaid, while 45% live below 200% of the federal poverty line. Studies further indicate a negative relationship between wages and health outcomes for healthcare support workers. For example, a 2021 analysis of Behavioral Risk Factor Surveillance System (BRFSS) data found that about one-quarter of home health workers report fair or poor general health due to the inability to see a doctor because of cost.<sup>107</sup> There is also ample research highlighting a relationship between worker wages and health outcomes, although these studies are not specific to health care workers. For example, low wages or income have been associated with obesity,<sup>108,109</sup> hypertension,<sup>110</sup> high rates of smoking continuation and low quit rates,<sup>111</sup> and shorter life expectancy<sup>111</sup> compared to higher-income earners.

Since most healthcare support workers are drawn from racial and ethnic minority groups, the adverse health effects of low wages further compound racial health disparities. Among DCWs, one study showed that Black and Hispanic individuals are 2–3 times more likely to live in poverty than their White direct care worker counterparts. Additionally, workers belonging to these racial groups spent more time working and commuting and less time on other activities and leisure, which study authors posit contributes to the lower quality of life reported by Black direct care workers.<sup>112</sup>

To date, no research establishes a causal relationship between poor compensation of health care support workers and patient care or patient health outcomes. However, there is evidence that low compensation is associated with worker turnover and shortages,<sup>113–115</sup> which is likely to affect patient access and quality of care negatively. Moreover, these negative outcomes are likely to disproportionately affect groups already at risk for poor health, such as elderly, poor, or disabled home-bound and long-term care patients. For example, a 2020 study found the highest turnover rates among nursing assistants at long-term care facilities occurred in those that predominantly serve Medicaid patients, were located in low-income communities, and low-rated facilities. The author posited that these high turnover rates contributed to the devastating COVID mortality rate in nursing homes, especially those most under-resourced.<sup>116</sup>

## Health Care Support Worker Compensation is a Health Equity Issue

Poor compensation disproportionately affects women, people of color, and immigrants, thereby exacerbating the financial and social disadvantages these communities already face. Studies show that low compensation is associated with a high turnover of these workers and that this, in turn, has negative effects on the health of patients, particularly for Medicaid beneficiaries in long-term care facilities.

### Policies & Programs That Improve HealthCare Support Worker Compensation

It is important to acknowledge that there are deeply rooted social and historical determinants of this problem in many areas of health workforce equity. As such, there is a need for changes in the larger context of societal values and the distribution of power for real progress.<sup>32,117</sup> At the same time, there are numerous ways the state and federal government policy can affect health workers' wages and benefits. This section reviews the research on several major areas, recognizing that a combination of policies is likely to have the most impact.<sup>32,118,119</sup>

One policy lever for addressing low healthcare worker compensation is the state, local, and federal **minimum wage laws**. The federal government sets the wage floor, but states – and to some extent, cities and counties – have jurisdiction to set minimum wages higher. The federal minimum wage is stagnated at \$7.25/hour since 2009, and, as a result, 30 states and DC have set higher rates.<sup>120</sup> However, only DC and a handful of local governments have raised wages to \$15/hour,<sup>121</sup> which is often cited as the minimum to qualify as a 'living wage' and far higher than median wages of direct care and other healthcare support workers nationally.<sup>97,122</sup> Rigorous simulations demonstrate that raising the minimum wage would lift hundreds of thousands of healthcare support workers and their children out of poverty, significantly reduce their reliance on public assistance, and increase retirement savings and home ownership rates among this workforce; these effects would be most substantial for women of color.<sup>123,124</sup> Further, there is ample evidence that increases in minimum wages improve the physical and mental health of low-wage workers<sup>125</sup> and population health outcomes, including reduced prevalence of smoking and low birth weight babies.<sup>126</sup> A minimum wage increase could help alleviate staffing shortages among direct care workers and decrease turnover while increasing productivity.<sup>124,127</sup> A 2020 simulation published by researchers at the Washington Center for Economic Growth found that a 10% increase in wages for the direct care workforce could prevent at least 15,000 patient deaths.<sup>128</sup> Studies show the societal return-on-investment of increased minimum wage can be measured in increased productivity, reduced turnover, higher tax revenue, and increased spending by workers.<sup>124,127</sup>

The second area of policy that is central to addressing this problem is **the right to unionize**. Union membership has been shown to result in better compensation and benefits for workers.<sup>129,130</sup> On average, unionized workers earn 11% more in wages than nonunionized workers in the same jobs,<sup>131</sup> and unionized direct care workers earn over \$1/hour more than their nonunionized counterparts.<sup>132</sup> The pay boost from unionization is especially pronounced among Black and Hispanic workers, who make 14% and 20% more, respectively.<sup>131</sup> Unions also reduce gender wage gaps; unionized women earn 6% more than comparable nonunionized women.<sup>131</sup> Compared to nonunionized workers, unionized workers in the civilian, private industry, and government sectors have greater access to paid leave, retirement, medical care, life insurance benefits, and pay a low share of their employer-based medical care plans.<sup>129</sup> There is also some evidence unions can benefit healthcare employers and patients, with studies finding unionization to be associated with lower turnover rates, a safer work environment, and reduced patient mortality.<sup>61,100,133,134</sup> As described in Part I of this brief, because employers have had considerable success in intimidating workers and making it difficult to form a union, policymakers are considering strengthening the protection of workers' right to organize at the federal level through the proposed PROAct.<sup>64</sup>

A third policy area is the **provision of health insurance**. Employer-sponsored health insurance is associated with lower intent to leave the job among home health workers<sup>99</sup> and reduced odds of turnover among nursing assistants.<sup>100</sup> In addition, workers who receive paid sick time are more likely to seek medical care for themselves and family members and stay home when sick.<sup>135</sup> Evidence for the impact of paid sick leave policies can be gleaned from the temporary federal paid sick leave mandate enacted in response to COVID-19, which showed an increase in staying at home behavior based on cellular data.<sup>136</sup> However, 18 million healthcare workers were not guaranteed access to this emergency measure due to employer exemptions, 75% of whom were women, 40% of whom were people of color, and 18% of whom were low-wage workers making less than \$22,000 annually.<sup>103</sup> A recent CMS proposed rule attempts to address this by enabling states to make payments to third parties on behalf of direct care workers,<sup>137</sup> which would presumably increase the opportunities for health workers to obtain health and other benefits.

Mandates are important, but it is also critical that the revenue to fund enhanced compensation be part of the policy equation. Many healthcare support workers like DCWs are employed in the long-term services and supports (LTSS) sector, of which Medicaid is the primary payor.<sup>138</sup> Compensation of healthcare support workers employed in this sector is thus likely partially constrained by Medicaid reimbursement rates. Increasing rates, however, must be accompanied by **wage pass-through laws** to ensure that the funds reach workers. Twenty-two states currently have pass-through laws for DCWs.<sup>139</sup> DCWs in states with wage pass-through laws earn up to 12% more than those in states without them.<sup>140</sup> Beyond the financial implications of these laws, they have also been associated with increased staffing levels in nursing homes,<sup>141</sup> which has been shown to improve patient safety and care quality.<sup>142</sup>

Lastly, some have suggested another promising policy area is the shift to **value-based payment**. The speculation has been that these new payment models should incentivize employers to invest in upskilling of health care support workers to expand their scopes and provide career ladders

with better wages.<sup>143</sup> While a few studies suggest upskilling direct care workers results in a better quality of care,<sup>144</sup> studies suggest this has not increased compensation.<sup>32,143</sup> States such as Tennessee and Kansas serve as examples of value-based payment models for long-term care that provide financial incentives to service providers based on performance measures, including staff training and retention.<sup>145</sup> Future research on compensation levels in those states will be important to track.

### **Policies and Programs that Impact HealthCare Support Worker Compensation**

Key policies to address this problem include increasing the minimum wage, protecting workers' rights to unionize, and requiring sick leave and health care benefits. Increased Medicaid reimbursement rates could also help improve compensation if coupled with wage pass-through mandates. Value-based payment models have the potential to incentivize employers to invest in health care support staff, but whether these models result in higher worker compensation is unknown.

## References

1. Rogers B. *Occupational and Environmental Health Nursing: Concepts and Practice*. 2nd ed. Saunders; 2003.
2. Industries at a Glance: Health Care and Social Assistance: NAICS 62. U.S. Bureau of Labor Statistics. Accessed February 14, 2022. [www.bls.gov/iag/tgs/iag62.htm](http://www.bls.gov/iag/tgs/iag62.htm)
3. Employer-Reported Workplace Injuries and Illnesses - 2020. Press release. U.S. Bureau of Labor Statistics. November 3, 2021. Accessed April 1, 2022. [www.bls.gov/news.release/pdf/osh.pdf](http://www.bls.gov/news.release/pdf/osh.pdf)
4. Jewett AP Robert Lewis, Christina. OSHA let employers decide whether to report health care worker deaths. many didn't. *Kaiser Health News*. November 30, 2020. Accessed January 20, 2022. <https://khn.org/news/article/osha-let-employers-decide-whether-to-report-health-care-worker-deaths-many-didnt/>
5. Hanage WP, Testa C, Chen JT, et al. COVID-19: US federal accountability for entry, spread, and inequities—lessons for the future. *Eur J Epidemiol*. 2020;35(11):995-1006. doi:10.1007/s10654-020-00689-2
6. Lost on the frontline: US healthcare workers who died fighting COVID-19. *The Guardian*. April 8, 2021. Accessed November 22, 2021. [www.theguardian.com/us-news/ng-interactive/2020/aug/11/lost-on-the-frontline-covid-19-coronavirus-us-healthcare-workers-deaths-database](http://www.theguardian.com/us-news/ng-interactive/2020/aug/11/lost-on-the-frontline-covid-19-coronavirus-us-healthcare-workers-deaths-database)
7. Healthcare. Occupational Safety and Health Administration. Accessed November 22, 2021. [www.osha.gov/healthcare](http://www.osha.gov/healthcare)
8. Walton AL, Rogers B. Workplace hazards faced by nursing assistants in the United States: a focused literature review. *Int J Environ Res Public Health*. 2017;14(5):544. doi: <http://dx.doi.org/10.3390/ijerph14050544>
9. Horwitz IB, McCall BP. The impact of shift work on the risk and severity of injuries for hospital employees: an analysis using Oregon workers' compensation data. *Occup Med Oxf Engl*. 2004;54(8):556-563. doi:10.1093/occmed/kqh093
10. Clarke SP, Sloane DM, Aiken LH. Effects of hospital staffing and organizational climate on needlestick injuries to nurses. *Am J Public Health*. 2002;92(7):1115-1119.
11. Workplace violence in healthcare, 2018. U.S. Bureau of Labor Statistics. April 8, 2020. Accessed November 23, 2021. [www.bls.gov/iif/oshwc/cfoi/workplace-violence-healthcare-2018.htm](http://www.bls.gov/iif/oshwc/cfoi/workplace-violence-healthcare-2018.htm)
12. Occupational Safety and Health Administration. *Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers*. 2016. Accessed April 1, 2022. [www.osha.gov/sites/default/files/publications/osha3148.pdf](http://www.osha.gov/sites/default/files/publications/osha3148.pdf)
13. Fasanya BK, Dada EA. Workplace violence and safety issues in long-term medical care facilities: Nurses' Perspectives. *Saf Health Work*. 2016;7(2):97-101. doi:10.1016/j.shaw.2015.11.002
14. Poghosyan L, Aiken LH, Sloane DM. Factor structure of the Maslach Burnout Inventory: an analysis of data from large scale cross-sectional surveys of nurses from eight countries. *Int J Nurs Stud*. 2009;46(7):894-902. doi:10.1016/j.ijnurstu.2009.03.004
15. National Academies of Sciences, Engineering, and Medicine; National Academy of Medicine; Committee on Systems Approaches to Improve Patient Care by Supporting Clinician Well-Being. *Taking action Against Clinician Burnout: A Systems Approach to Professional Well-Being*. National Academies Press (US); October 23, 2019. Accessed January 20, 2022. [www.ncbi.nlm.nih.gov/books/NBK552618/](http://www.ncbi.nlm.nih.gov/books/NBK552618/)
16. The mental health of healthcare workers in COVID-19. Mental Health America. Accessed January 20, 2022. <https://mhanational.org/mental-health-healthcare-workers-covid-19>
17. Dyrbye LN, Shanafelt TD, Sinsky CA, et al. Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care. National Academy of

- Medicine. July 5, 2017. Accessed August 5, 2021. <https://nam.edu/burnout-among-health-care-professionals-a-call-to-explore-and-address-this-underrecognized-threat-to-safe-high-quality-care/>
18. Suicide prevention for healthcare professionals. American Foundation for Suicide Prevention. September 20, 2021. Accessed November 22, 2021. <https://afsp.org/suicide-prevention-for-healthcare-professionals/>
  19. AMA efforts aimed at preventing medical student and physician suicide. Press release. American Medical Association. June 12, 2019. Accessed July 10, 2021. [www.ama-assn.org/press-center/press-releases/ama-efforts-aimed-preventing-medical-student-and-physician-suicide](http://www.ama-assn.org/press-center/press-releases/ama-efforts-aimed-preventing-medical-student-and-physician-suicide)
  20. Shah MK, Gandrakota N, Cimiotti JP, Ghose N, Moore M, Ali MK. Prevalence of and factors associated with nurse burnout in the US. *JAMA Netw Open*. 2021;4(2):e2036469. doi:10.1001/jamanetworkopen.2020.36469
  21. Schlak AE, Rosa WE, Rushton CH, Poghosyan L, Root MC, McHugh MD. An expanded institutional- and national-level blueprint to address nurse burnout and moral suffering amid the evolving pandemic. *Nurs Manag (Harlow)*. 2022;53(1):16-27. doi:10.1097/01.NUMA.0000805032.15402.b3
  22. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA*. 2002;288(16):1987-1993. doi:10.1001/jama.288.16.1987
  23. Stimpfel AW, Brewer CS, Kovner CT. Scheduling and shift work characteristics associated with risk for occupational injury in newly licensed registered nurses: an observational study. *Int J Nurs Stud*. 2015;52(11):1686-1693. doi:10.1016/j.ijnurstu.2015.06.011
  24. Garrett C. The effect of nurse staffing patterns on medical errors and nurse burnout. *AORN J*. 2008;87(6):1191-1204. doi:10.1016/j.aorn.2008.01.022
  25. Cimiotti JP, Aiken LH, Sloane DM, Wu ES. Nurse staffing, burnout, and health care-associated infection. *Am J Infect Control*. 2012;40(6):486-490. doi:10.1016/j.ajic.2012.02.029
  26. Young RA, Burge SK, Kumar KA, Wilson JM, Ortiz DF. A time-motion study of primary care physicians' work in the electronic health record era. *Fam Med*. 2018;50(2):91-99. doi:10.22454/FamMed.2018.184803
  27. Arndt BG, Beasley JW, Watkinson MD, et al. Tethered to the EHR: Primary care physician workload assessment using EHR event log data and time-motion observations. *Ann Fam Med*. 2017;15(5):419-426. doi:10.1370/afm.2121
  28. Asan O, D Smith P, Montague E. More screen time, less face time - implications for EHR design. *J Eval Clin Pract*. 2014;20(6):896-901. doi:10.1111/jep.12182
  29. Litz BT, Stein N, Delaney E, et al. Moral injury and moral repair in war veterans: a preliminary model and intervention strategy. *Clin Psychol Rev*. 2009;29(8):695-706. doi:10.1016/j.cpr.2009.07.003
  30. Talbot S, Dean W. Physicians aren't "burning out." They're suffering from moral injury. *STAT*. July 26, 2018. Accessed December 20, 2021. [www.statnews.com/2018/07/26/physicians-not-burning-out-they-are-suffering-moral-injury/](http://www.statnews.com/2018/07/26/physicians-not-burning-out-they-are-suffering-moral-injury/)
  31. Davidson JE, Proudfoot J, Lee K, Terterian G, Zisook S. A longitudinal analysis of nurse suicide in the United States (2005-2016) with recommendations for action. *Worldviews Evid Based Nurs*. 2020;17(1):6-15. doi:10.1111/wvn.12419
  32. Campbell S, Drake ADR, Espinoza R, Scales K. Caring for the future: The power and potential of America's direct care workforce. PHI. 2021. Accessed November 23, 2021. <https://phinational.org/wp-content/uploads/2021/01/Caring-for-the-Future-2021-PHI.pdf>

33. Friedberg MW, Reid RO, Timbie JW, et al. Federally qualified health center clinicians and staff increasingly dissatisfied with workplace conditions. *Health Aff (Proj Hope)*. 2017;36(8):1469-1475. doi:10.1377/hlthaff.2017.0205
34. Barrett ES, Horton DB, Roy J, et al. Prevalence of SARS-CoV-2 infection in previously undiagnosed health care workers in New Jersey, at the onset of the U.S. COVID-19 pandemic. *BMC Infect Dis*. 2020;20(1):853. doi:10.1186/s12879-020-05587-2
35. Hurtado DA, Sabbath EL, Ertel KA, Buxton OM, Berkman LF. Racial disparities in job strain among American and immigrant long-term care workers. *Int Nurs Rev*. 2012;59(2):237-244. doi:10.1111/j.1466-7657.2011.00948.x
36. National Nurses United. Sins of omission: How government failures to track COVID-19 data have led to more than 3,200 health care worker deaths and jeopardize public health. Updated March 2021. Accessed April 1, 2022. [www.nationalnursesunited.org/sites/default/files/nnu/documents/0321\\_Covid19\\_SinsOfOmission\\_Data\\_Report.pdf](http://www.nationalnursesunited.org/sites/default/files/nnu/documents/0321_Covid19_SinsOfOmission_Data_Report.pdf)
37. Occupational Safety and Health Administration. *Caring for Our Caregivers: Facts About Hospital Worker Safety*. September 2013. Accessed April 1, 2022. [www.osha.gov/sites/default/files/1.2\\_Factbook\\_508.pdf](http://www.osha.gov/sites/default/files/1.2_Factbook_508.pdf)
38. Shanafelt TD, Raymond M, Kosty M, et al. Satisfaction with work-life balance and the career and retirement plans of US oncologists. *J Clin Oncol Off J Am Soc Clin Oncol*. 2014;32(11):1127-1135. doi:10.1200/JCO.2013.53.4560
39. Shanafelt T, Sloan J, Satele D, Balch C. Why do surgeons consider leaving practice? *J Am Coll Surg*. 2011;212(3):421-422. doi:10.1016/j.jamcollsurg.2010.11.006
40. NSI Nursing Solutions, Inc. 2016 national healthcare retention & RN staffing report. March 2016. Accessed April 1, 2022. <https://avanthealthcare.com/pdf/NationalHealthcareRNRetentionReport2016.pdf>
41. Muir KJ, Wanchek TN, Lobo JM, Keim-Malpass J. Evaluating the costs of nurse burnout-attributed turnover: a Markov modeling approach. *J Patient Saf*. Preprint posted online December 27, 2021. doi:10.1097/PTS.0000000000000920
42. Salyers MP, Bonfils KA, Luther L, et al. The relationship between professional burnout and quality and safety in healthcare: a meta-analysis. *J Gen Intern Med*. 2017;32(4):475-482. doi:10.1007/s11606-016-3886-9
43. Melnyk BM, Orsolini L, Tan A, et al. A national study links nurses' physical and mental health to medical errors and perceived worksite wellness. *J Occup Environ Med*. 2018;60(2):126-131. doi:10.1097/JOM.0000000000001198
44. Melnyk BM, Tan A, Hsieh AP, et al. Critical care nurses' physical and mental health, worksite wellness support, and medical errors. *Am J Crit Care*. 2021;30(3):176-184. doi:10.4037/ajcc2021301
45. Aiken LH, Clarke SP, Sloane DM. Hospital staffing, organization, and quality of care: cross-national findings. *Nurs Outlook*. 2002;50(5):187-194. doi:10.1067/mno.2002.126696
46. Aiken LH, Clarke SP, Sloane DM, Lake ET, Cheney T. Effects of hospital care environment on patient mortality and nurse outcomes. *J Nurs Adm*. 2008;38(5):223-229. doi:10.1097/01.NNA.0000312773.42352.d7
47. Lake ET. Development of the practice environment scale of the Nursing Work Index. *Res Nurs Health*. 2002;25(3):176-188. doi:10.1002/nur.10032
48. Yansane A, Tokede O, Walji M, et al. Burnout, engagement, and dental errors among U.S. dentists. *J Patient Saf*. 2021;17(8):e1050-e1056. doi:10.1097/PTS.0000000000000673
49. Dyrbye L, Herrin J, West CP, et al. Association of racial bias with burnout among resident physicians. *JAMA Netw Open*. 2019;2(7):e197457. doi:10.1001/jamanetworkopen.2019.7457

50. Brigham T, Barden C, Dopp AL, et al. A journey to construct an all-encompassing conceptual model of factors affecting clinician wellbeing and resilience. National Academy of Medicine. January 29, 2018. Accessed December 7, 2021. <https://nam.edu/journey-construct-encompassing-conceptual-model-factors-affecting-clinician-well-resilience/>
51. Fraiman YS, Cheston CC, Cabral HJ, et al. Effect of a novel mindfulness curriculum on burnout during pediatric internship: a cluster randomized clinical trial. *JAMA Pediatr*. Published online January 24, 2022. doi:10.1001/jamapediatrics.2021.5740
52. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: a theoretical review. *Hum Resour Health*. 2020;18(1):41. doi:10.1186/s12960-020-00469-9
53. De Simone S, Vargas M, Servillo G. Organizational strategies to reduce physician burnout: a systematic review and meta-analysis. *Aging Clin Exp Res*. 2021;33(4):883-894. doi:10.1007/s40520-019-01368-3
54. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *The Lancet*. 2016;388(10057):2272-2281. doi:10.1016/S0140-6736(16)31279-X
55. DeChant PF, Acs A, Rhee KB, et al. Effect of organization-directed workplace interventions on physician burnout: a systematic review. *Mayo Clin Proc Innov Qual Outcomes*. 2019;3(4):384-408. doi:10.1016/j.mayocpiqo.2019.07.006
56. Ziemann M, Erikson C, Krips M. The use of medical scribes in primary care settings. *Med Care*. 2021;59(10 Suppl 5):S449-S456. doi:10.1097/MLR.0000000000001605
57. McCaffrey R, Reinoso H. Transformational leadership: a model for advanced practice holistic nurses. *J Holist Nurs*. 2017;35(4):397-404. doi:10.1177/0898010116685242
58. Findorff MJ, McGovern PM, Wall M, Gerberich SG, Alexander B. Risk factors for work related violence in a health care organization. *Inj Prev*. 2004;10(5):296-302. doi:10.1136/ip.2003.004747
59. Occupational Safety and Health Administration. *OSHA Safety and Health Program Management Guidelines: November 2015 Draft for Public Comment*. Occupational Safety and Health Administration; 2015. Accessed April 1, 2022. [www.osha.gov/sites/default/files/SHPM\\_guidelines.pdf](http://www.osha.gov/sites/default/files/SHPM_guidelines.pdf)
60. The Joint Commission. Improving patient and worker safety: opportunities for synergy, collaboration and innovation. November 2012. Accessed April 1, 2022. [www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/patient-safety/tjc-improvingpatientandworkersafety-monograph.pdf](http://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/patient-safety/tjc-improvingpatientandworkersafety-monograph.pdf)
61. Hagedorn J, Paras CA, Greenwich H, Hagopian A. The role of labor unions in creating working conditions that promote public health. *Am J Public Health*. 2016;106(6):989-995. doi:10.2105/AJPH.2016.303138
62. Carville O, Court E, Brown KV. Hospitals tell doctors they'll be fired if they speak out about lack of gear. *Bloomberg*. March 31, 2020. Accessed January 20, 2022. [www.bloomberg.com/news/articles/2020-03-31/hospitals-tell-doctors-they-ll-be-fired-if-they-talk-to-press](http://www.bloomberg.com/news/articles/2020-03-31/hospitals-tell-doctors-they-ll-be-fired-if-they-talk-to-press)
63. U.S. Bureau of Labor Statistics, The Economics Daily. Union membership rate 8.6 percent in manufacturing, 23.4 percent in utilities, in 2019. February 3, 2020. Accessed February 14, 2022. [www.bls.gov/opub/ted/2020/union-membership-rate-8-point-6-percent-in-manufacturing-23-point-4-percent-in-utilities-in-2019.htm](http://www.bls.gov/opub/ted/2020/union-membership-rate-8-point-6-percent-in-manufacturing-23-point-4-percent-in-utilities-in-2019.htm)
64. *Text - H.R.842 - 117th Congress (2021-2022): Protecting the Right to Organize Act of 2021*. Vol 842; 2021. Accessed January 20, 2022. [www.congress.gov/bill/117th-congress/house-bill/842/text](http://www.congress.gov/bill/117th-congress/house-bill/842/text)

65. OSH Act of 1970. Occupational Safety and Health Administration. Accessed January 20, 2022. [www.osha.gov/laws-regs/oshact/completeoshact](http://www.osha.gov/laws-regs/oshact/completeoshact)
66. Kirzinger A, Kearney A, Hamel L, Brodie M. KFF/The Washington Post Frontline Health Care Workers Survey: Toll of the Pandemic. Kaiser Family Foundation. April 6, 2021. Accessed November 22, 2021. [www.kff.org/report-section/kff-the-washington-post-frontline-health-care-workers-survey-toll-of-the-pandemic/](http://www.kff.org/report-section/kff-the-washington-post-frontline-health-care-workers-survey-toll-of-the-pandemic/)
67. COVID-19 Response Summary. Occupational Safety and Health Administration. Accessed January 20, 2022. [www.osha.gov/enforcement/covid-19-data#complaints\\_essential](http://www.osha.gov/enforcement/covid-19-data#complaints_essential)
68. Centers for Medicare & Medicaid Services. *Guidance for the Interim Final Rule - Medicare and Medicaid Programs; Omnibus COVID-19 Health Care Staff Vaccination*. December 28, 2021. Accessed January 20, 2022. [www.cms.gov/medicareprovider-enrollment-and-certificationsurveycertificationgeninfopolicy-and-memos-states-and/guidance-interim-final-rule-medicare-and-medicaid-programs-omnibus-covid-19-health-care-staff-0](http://www.cms.gov/medicareprovider-enrollment-and-certificationsurveycertificationgeninfopolicy-and-memos-states-and/guidance-interim-final-rule-medicare-and-medicaid-programs-omnibus-covid-19-health-care-staff-0)
69. Brown A. OSHA to states: protect workers from COVID or forfeit authority. *The Pew Charitable Trusts*. October 22, 2021. Accessed January 21, 2022. <https://pew.org/3vvCWxy>
70. *Biden v. Missouri*, 595 U.S. (2022). [www.supremecourt.gov/opinions/21pdf/21a240\\_d18e.pdf](http://www.supremecourt.gov/opinions/21pdf/21a240_d18e.pdf)
71. AHA urges OSHA to withdraw Emergency Temporary Standard for COVID-19. American Hospital Association. August 20, 2021. Accessed January 20, 2022. [www.aha.org/news/headline/2021-08-20-aha-urges-osha-withdraw-emergency-temporary-standard-covid-19](http://www.aha.org/news/headline/2021-08-20-aha-urges-osha-withdraw-emergency-temporary-standard-covid-19)
72. Kirkham C, Lesser B. Special Report-U.S. regulators ignored workers' COVID-19 safety complaints amid deadly outbreaks. *Reuters*. January 6, 2021. Accessed January 20, 2022. [www.reuters.com/article/us-health-coronavirus-workplace-safety-s-idUSKBN29B1FQ](http://www.reuters.com/article/us-health-coronavirus-workplace-safety-s-idUSKBN29B1FQ)
73. U.S. Department of Labor. *Statement on the Status of the OSHA COVID-19 Healthcare ETS*. December 27, 2021. Accessed January 21, 2022. [www.osha.gov/coronavirus/ets](http://www.osha.gov/coronavirus/ets)
74. U.S. Department of Labor. *OSHA: 1910.1030 - Bloodborne pathogens*. Accessed January 21, 2022. [www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030](http://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030)
75. Phillips EK, Conaway MR, Jagger JC. Percutaneous injuries before and after the Needlestick Safety and Prevention Act. *N Engl J Med*. 2012;366(7):670-671. doi:10.1056/NEJMc1110979
76. Centers for Disease Control. Guidelines for prevention of transmission of Human Immunodeficiency Virus and Hepatitis B Virus to health-care and public-safety workers: a response to P.L. 100-607 The Health Omnibus Programs Extension Act of 1988. *Morb Mortal Wkly Rep*. 1989;38(S-6):3-37.
77. California Code of Regulations, Title 8, Section 5199. Aerosol Transmissible Diseases. Accessed January 20, 2022. [www.dir.ca.gov/title8/5199.html](http://www.dir.ca.gov/title8/5199.html)
78. Pittman P. Evidence on hospital staffing and outcomes: implications for Washington. Fitzhugh Mullan Institute for Health Workforce Equity. Washington, DC: George Washington University, 2022.
79. Schakowsky JD. Text - H.R.2581 - 116th Congress (2019-2020): Nurse Staffing Standards for Hospital Patient Safety and Quality Care Act of 2019. May 9, 2019. Accessed February 15, 2022. [www.congress.gov/bill/116th-congress/house-bill/2581/text](http://www.congress.gov/bill/116th-congress/house-bill/2581/text)
80. Courtney J. Text - H.R.1195 - 117th Congress (2021-2022): Workplace Violence Prevention for Health Care and Social Service Workers Act. April 19, 2021. Accessed February 15, 2022. [www.congress.gov/bill/117th-congress/house-bill/1195/text](http://www.congress.gov/bill/117th-congress/house-bill/1195/text)
81. Criminal Law – Threat Against Public Health Official or Hospital Staff Member, HB 267. (MD 2022). Accessed February 15, 2022. <https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/HB0267?ys=2022rs>

82. Jones JTR, North CS, Vogel-Scibilia S, Myers MF, Owen RR. Medical licensure questions about mental illness and compliance with the Americans with Disabilities Act. *J Am Acad Psychiatry Law Online*. 2018;46(4):458-471. doi:10.29158/JAAPL.003789-18
83. Bonnie R, Appelbaum P, Recupero P. Position statement on inquiries about diagnosis and treatment of mental disorders in connection with professional credentialing and licensing. Council on Psychiatry and the Law, American Psychiatric Association. May 2018. Accessed April 1, 2022. [www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-2018-Inquiries-about-Diagnosis-and-Treatment-of-Mental-Disorders-in-Connection-with-Professional-Credentialing-and-Licensing.pdf](http://www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-2018-Inquiries-about-Diagnosis-and-Treatment-of-Mental-Disorders-in-Connection-with-Professional-Credentialing-and-Licensing.pdf)
84. Moran Mark. AMA vows to destigmatize medical license applications. *Psychiatric News* December 18, 2009. Accessed April 1, 2022. [https://psychnews.psychiatryonline.org/doi/full/10.1176/pn.44.24.psychnews\\_44\\_24\\_007](https://psychnews.psychiatryonline.org/doi/full/10.1176/pn.44.24.psychnews_44_24_007)
85. Moran M. AMA to state medical boards: don't ask about past mental illness. *Psychiatric News*. December 9, 2016. Accessed April 1, 2022. <https://psychnews.psychiatryonline.org/doi/full/10.1176/appi.pn.2016.12b6#:~:text=The%20AMA%20wants%20state%20medical,by%20mental%20illness%20or%20addiction.>
86. Hoff T, Carabetta S, Collinson GE. Satisfaction, burnout, and turnover among nurse practitioners and physician assistants: a review of the empirical literature. *Med Care Res Rev*. 2019;76(1):3-31. doi:10.1177/1077558717730157
87. Whistleblower Protection Program. U.S. Department of Labor. Accessed January 20, 2022. [www.whistleblowers.gov/](http://www.whistleblowers.gov/)
88. Whistleblower Protection Laws for healthcare workers. National Nurses United. September 21, 2017. Accessed January 21, 2022. [www.nationalnursesunited.org/whistleblower-protection-laws-for-healthcare-workers](http://www.nationalnursesunited.org/whistleblower-protection-laws-for-healthcare-workers)
89. Report a Patient Safety Concern or File a Complaint. The Joint Commission. Accessed January 21, 2022. [www.jointcommission.org/resources/patient-safety-topics/report-a-patient-safety-concern-or-complaint/](http://www.jointcommission.org/resources/patient-safety-topics/report-a-patient-safety-concern-or-complaint/)
90. Lim CR, Zhang MWB, Hussain SF, Ho RCM. The consequences of whistle-blowing: an integrative review. *J Patient Saf*. 2021;17(6):e497-e502. doi:10.1097/PTS.0000000000000396
91. Kerwin D. The US labor standards enforcement system and low-wage immigrants: recommendations for legislative and administrative reform. *J Migr Hum Secur*. 2013; 1(1):32-57. doi:10.1177/233150241300100103
92. U.S. Government Accountability Office. *Fair Labor Standards Act: Tracking Additional Complaint Data Could Improve DOL's Enforcement*. December 2020. GAO-21-13 Accessed April 1, 2022. [www.gao.gov/assets/gao-21-13.pdf](http://www.gao.gov/assets/gao-21-13.pdf)
93. Shojania KG. The elephant of patient safety: what you see depends on how you look. *Jt Comm J Qual Patient Saf*. 2010;36(9):AP1-AP3. doi:10.1016/S1553-7250(10)36058-2
94. Kelly LA, McHugh MD, Aiken LH. Nurse outcomes in Magnet® and non-Magnet hospitals. *J Nurs Adm*. 2012;42(SUPPL. 10):S44-S49. doi:10.1097/01.NNA.0000420394.18284.4f
95. Occupational Outlook Handbook: Home health and personal care aides. U.S. Bureau of Labor Statistics. September 8, 2021. Accessed January 21, 2022. [www.bls.gov/OOH/healthcare/home-health-aides-and-personal-care-aides.htm#tab-6](http://www.bls.gov/OOH/healthcare/home-health-aides-and-personal-care-aides.htm#tab-6)
96. Kinder M. Essential but undervalued: millions of health care workers aren't getting the pay or respect they deserve in the COVID-19 pandemic. Brookings. May 28, 2020. Accessed January 21, 2022. [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/](http://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/)

97. Van Dam A. Fewer Americans are earning less than \$15 an hour, but Black and Hispanic women make up a bigger share of them. *Washington Post*. March 3, 2021. Accessed April 1, 2022. [www.washingtonpost.com/business/2021/03/03/15-minimum-wage-black-hispanic-women/](http://www.washingtonpost.com/business/2021/03/03/15-minimum-wage-black-hispanic-women/)
98. Kinder M, Stateler L, Du Julia. The COVID-19 hazard continues, but the hazard pay does not: why America's essential workers need a raise. Brookings. October 29, 2020. Accessed January 21, 2022. [www.brookings.edu/research/the-covid-19-hazard-continues-but-the-hazard-pay-does-not-why-americas-frontline-workers-need-a-raise/](http://www.brookings.edu/research/the-covid-19-hazard-continues-but-the-hazard-pay-does-not-why-americas-frontline-workers-need-a-raise/)
99. Stone R, Wilhelm J, Bishop CE, Bryant NS, Hermer L, Squillace MR. Predictors of intent to leave the job among home health workers: analysis of the National Home Health Aide Survey. *The Gerontologist*. 2017;57(5):890-899. doi:10.1093/geront/gnw075
100. Temple A, Dobbs D, Andel R. Exploring correlates of turnover among nursing assistants in the National Nursing Home Survey. *J Nurs Adm*. 2011;41(7-8 Suppl):S34-42. doi:10.1097/NNA.0b013e318221c34b
101. Paid sick leave to protect income, health and jobs through the COVID-19 crisis. Organisation for Economic Co-operation and Development. July 2, 2020. Accessed November 23, 2021. [www.oecd.org/coronavirus/policy-responses/paid-sick-leave-to-protect-income-health-and-jobs-through-the-covid-19-crisis-a9e1a154/](http://www.oecd.org/coronavirus/policy-responses/paid-sick-leave-to-protect-income-health-and-jobs-through-the-covid-19-crisis-a9e1a154/)
102. Table 31. Leave benefits: access, private industry workers. U.S. Bureau of Labor Statistics. 2019. Accessed April 1, 2022. [www.bls.gov/ncs/ebs/benefits/2019/ownership/private/table31a.pdf](http://www.bls.gov/ncs/ebs/benefits/2019/ownership/private/table31a.pdf)
103. Long M, Rae M. Gaps in the emergency paid sick leave law for health care workers. Kaiser Family Foundation. June 17, 2020. Accessed November 22, 2021. [www.kff.org/coronavirus-covid-19/issue-brief/gaps-in-emergency-paid-sick-leave-law-for-health-care-workers/](http://www.kff.org/coronavirus-covid-19/issue-brief/gaps-in-emergency-paid-sick-leave-law-for-health-care-workers/)
104. Heymann J, Sprague A, Earle A, McCormack M, Waisath W, Raub A. US sick leave in global context: US eligibility rules widen inequalities despite readily available solutions. *Health Aff (Millwood)*. 2021;40(9):1501-1509. doi:10.1377/hlthaff.2021.00731
105. Appelbaum E. Black women in healthcare face declining real wages. Center for Economic and Policy and Research. July 13, 2017. Accessed April 1, 2022. <https://cepr.net/black-women-in-healthcare-face-declining-real-wages/>
106. Srinivasan M, Cen X, Farrar B, Pooler JA, Fish T. Food insecurity among health care workers in the US. *Health Aff (Millwood)*. 2021;40(9):1449-1456. doi:10.1377/hlthaff.2021.00450
107. Sterling MR, Li J, Cho J, Ringel JB, Silver SR. Prevalence and predictors of home health care workers' general, physical, and mental health: findings from the 2014–2018 Behavioral Risk Factor Surveillance System. *Am J Public Health*. 2021;111(12):2239-2250. doi:10.2105/AJPH.2021.306512
108. Kim D, Leigh JP. Estimating the effects of wages on obesity. *J Occup Environ Med*. 2010;52(5):495-500. doi:10.1097/JOM.0b013e3181dbc867
109. Meltzer DO, Chen Z. The impact of minimum wage rates on body weight in the United States. National Bureau of Economic Research Working Paper 15485. November 2009. Accessed April 1, 2022. [www.nber.org/system/files/working\\_papers/w15485/w15485.pdf](http://www.nber.org/system/files/working_papers/w15485/w15485.pdf)
110. Leigh JP, Du J. Are low wages risk factors for hypertension? *Eur J Public Health*. 2012;22(6):854-859. doi:10.1093/eurpub/ckr204
111. Chetty R, Stepner M, Abraham S, et al. The association between income and life expectancy in the United States, 2001-2014. *JAMA*. 2016;315(16):1750. doi:10.1001/jama.2016.4226
112. Muench U, Spetz J, Jura M, Harrington C. Racial disparities in financial security, work and leisure activities, and quality of life among the direct care workforce. *The Gerontologist*. 2021;61(6):838-850. doi:10.1093/geront/gnaa190
113. McCall S, Scales K, Spetz J. Workforce displacement and re-employment during the COVID-19 Pandemic: implications for direct care workforce recruitment and retention. UCSF Health

- Workforce Research Center on Long-Term Care. October 2021. Accessed April 1, 2022. <https://phinational.org/wp-content/uploads/2021/10/Workforce-Displacement-and-Re-Employment-During-the-Covid-19-Pandemic-2021-PHI-and-UCSF-1.pdf>
114. Frogner B, Spetz J. Entry and exit of workers in long-term care. UCSF Health Workforce Research Center on Long-Term Care. January 20, 2015. Accessed April 1, 2022. [https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/Report-Entry\\_and\\_Exit\\_of\\_Workers\\_in\\_Long-Term\\_Care.pdf](https://healthworkforce.ucsf.edu/sites/healthworkforce.ucsf.edu/files/Report-Entry_and_Exit_of_Workers_in_Long-Term_Care.pdf)
  115. 8 signs the shortage in paid caregivers is getting worse. *PHI*. February 2, 2017. Accessed February 15, 2022. <https://phinational.org/8-signs-the-shortage-in-paid-caregivers-is-getting-worse/>
  116. Gandhi A, Yu H, Grabowski DC. High nursing staff turnover in nursing homes offers important quality information. *Health Aff (Millwood)*. 2021;40(3):384-391. doi:10.1377/hlthaff.2020.00957
  117. Yearby R. Structural racism and health disparities: reconfiguring the social determinants of health framework to include the root cause. *J Law Med Ethics*. 2020;48(3):518-526. doi:10.1177/1073110520958876
  118. Osterman P. Improving long-term care by finally respecting home-care aides. *Hastings Cent Rep*. 2018;48 Suppl 3:S67-S70. doi:10.1002/hast.917
  119. Spetz J, Stone RI, Chapman SA, Bryant N. Home and community-based workforce for patients with serious illness requires support to meet growing needs. *Health Aff (Millwood)*. 2019;38(6):902-909. doi:10.1377/hlthaff.2019.00021
  120. U.S. Department of Labor. Consolidated minimum wage table. January 1, 2022. Accessed January 21, 2022. [www.dol.gov/agencies/whd/mw-consolidated](http://www.dol.gov/agencies/whd/mw-consolidated)
  121. UC Berkeley Labor Center. Inventory of US city and county minimum wage ordinances. January 31, 2022. Accessed January 31, 2022. <https://laborcenter.berkeley.edu/inventory-of-us-city-and-county-minimum-wage-ordinances/>
  122. PHI. Direct care workers in the United States: key facts. September 7, 2021. Accessed February 15, 2022. <https://phinational.org/resource/direct-care-workers-in-the-united-states-key-facts-2/>
  123. Himmelstein KEW, Venkataramani AS. Economic vulnerability among US female health care workers: potential impact of a \$15-per-hour minimum wage. *Am J Public Health*. 2019;109(2):198-205. doi:10.2105/AJPH.2018.304801
  124. Weller C, Almeida B, Cohen M, Stone R. Making care work pay. *LeadingAge*. September 2020. Accessed April 1, 2022. <https://leadingage.org/sites/default/files/Making%20Care%20Work%20Pay%20Report.pdf>
  125. Shook J, Goodkind S, Engel RJ, Wexler S, Ballentine KL. Moving beyond poverty: effects of low-wage work on individual, social, and family wellbeing. *Fam Soc J Contemp Soc Serv*. 2020;101(3):249-259. doi:10.1177/1044389420923473
  126. Leigh JP, Du J. Effects of minimum wages on population health. Robert Wood Johnson Foundation. October 4, 2018. Accessed January 21, 2022. [www.rwjf.org/en/library/research/2018/10/effects-of-minimum-wages-on-population-health.html](http://www.rwjf.org/en/library/research/2018/10/effects-of-minimum-wages-on-population-health.html)
  127. Jabola-Carolus I, Luce S, Milkman R. The case for public investment in higher pay for New York State home care workers: estimated costs and savings. City University of New York (CUNY); 2021. <https://slu.cuny.edu/wp-content/uploads/2021/03/The-Case-for-Public-Investment-in-Higher-Pay-for-New-York-State-H.pdf>
  128. Ruffini K. Worker earnings, service quality, and firm profitability: evidence from nursing homes and minimum wage reforms. Washington Center for Equitable Growth. June 2020. Accessed

- April 1, 2022. <https://equitablegrowth.org/wp-content/uploads/2020/06/060420-WP-Worker-earnings-service-quality-and-firm-profitability-Ruffini.pdf>
129. Employee Benefits in the United States - March 2021. U.S. Bureau of Labor Statistics. Press release. September 23, 2021. Accessed April 1, 2022. [www.bls.gov/news.release/pdf/ebs2.pdf](http://www.bls.gov/news.release/pdf/ebs2.pdf)
  130. Mishel L. Unions, inequality, and faltering middle-class wages. Economic Policy Institute. August 29, 2012. Accessed February 15, 2022. [www.epi.org/publication/ib342-unions-inequality-faltering-middle-class/](http://www.epi.org/publication/ib342-unions-inequality-faltering-middle-class/)
  131. McNicholas C, Rhinehart L, Poydock M, Shierholz H, Perez D. Why unions are good for workers—especially in a crisis like COVID-19: 12 policies that would boost worker rights, safety, and wages. Economic Policy Institute. August 25, 2020. Accessed February 15, 2022. [www.epi.org/publication/why-unions-are-good-for-workers-especially-in-a-crisis-like-covid-19-12-policies-that-would-boost-worker-rights-safety-and-wages/](http://www.epi.org/publication/why-unions-are-good-for-workers-especially-in-a-crisis-like-covid-19-12-policies-that-would-boost-worker-rights-safety-and-wages/)
  132. Espinoza R. Would you stay? Rethinking direct care job quality. PHI. October 13, 2020. Accessed February 15, 2022. <https://phinational.org/resource/would-you-stay-rethinking-direct-care-job-quality/>
  133. Ash M, Seago JA. The effect of registered nurses' unions on heart-attack mortality. *ILR Rev.* 2004;57(3):422-442. doi:10.1177/001979390405700306
  134. Dean A, Venkataramani A, Kimmel S. Mortality rates from COVID-19 Are lower in unionized nursing homes. *Health Aff (Millwood)*. 2020;39(11):1993-2001. doi:10.1377/hlthaff.2020.01011
  135. DeRigne L, Stoddard-Dare P, Quinn L. Workers without paid sick leave less likely to take time off for illness or injury compared to those with paid sick leave. *Health Aff (Millwood)*. 2016;35(3):520-527. doi:10.1377/hlthaff.2015.0965
  136. Andersen M, Maclean JC, Pesko MF, Simon KI. Paid sick-leave and physical mobility: evidence from the United States during a pandemic. National Bureau of Economic Research Working Paper 27138. May 2020. Updated April 2021. Accessed April 1, 2022. [www.nber.org/papers/w27138](http://www.nber.org/papers/w27138)
  137. CMS proposes rule to support home care workers access to benefits. Press release. Centers for Medicare & Medicaid Services. July 30, 2021. Accessed January 21, 2022. [www.cms.gov/newsroom/news-alert/cms-proposes-rule-support-home-care-workers-access-benefits](http://www.cms.gov/newsroom/news-alert/cms-proposes-rule-support-home-care-workers-access-benefits)
  138. O' M, Watts M, Musumeci M, Chidambaram P. Medicaid home and community-based services enrollment and spending. Kaiser Family Foundation. February 4, 2020. Accessed April 1, 2022. [www.kff.org/medicaid/issue-brief/medicaid-home-and-community-based-services-enrollment-and-spending/](http://www.kff.org/medicaid/issue-brief/medicaid-home-and-community-based-services-enrollment-and-spending/)
  139. Yearby PR, Gardner N, Davis S, et al. Direct care worker wage pass-through law final report. The Institute for Health Justice & Equity. September 2020. Accessed April 1, 2022. [https://ihje.org/wp-content/uploads/2020/12/Direct-Care-Worker-Wage-Pass-Through-Law-Final-Report\\_September-2020\\_Institute-of-Healing-Justice-and-Equity.pdf](https://ihje.org/wp-content/uploads/2020/12/Direct-Care-Worker-Wage-Pass-Through-Law-Final-Report_September-2020_Institute-of-Healing-Justice-and-Equity.pdf)
  140. Baughman RA, Smith K. The effect of Medicaid wage pass-through programs on the wages of direct care workers. *Med Care*. 2010;48(5):426-432. doi:10.1097/MLR.0b013e3181d6888a
  141. Feng Z, Lee YS, Kuo S, Intrator O, Foster A, Mor V. Do Medicaid wage pass-through payments increase nursing home staffing? *Health Serv Res*. 2010;45(3):728-747. doi:10.1111/j.1475-6773.2010.01109.x
  142. Harrington C, Dellefield ME, Halifax E, Fleming ML, Bakerjian D. Appropriate nurse staffing levels for U.S. nursing homes. *Health Serv Insights*. 2020;13:1178632920934785. doi:10.1177/1178632920934785
  143. Scales K. It is time to resolve the direct care workforce crisis in long-term care. *Gerontologist*. 2021;61(4):497-504. doi:10.1093/geront/gnaa116

144. Pittman P, Ziemann M, Bodas M, Chapman S. Advancing the home care workforce: a review of program approaches, evidence and the challenges of widespread adoption. Fitzhugh Mullan Institute for Health Workforce Equity. 2021. Accessed April 1, 2022.  
[www.gwhwi.org/homecareworkforce.html](http://www.gwhwi.org/homecareworkforce.html)
145. Twomey M. State options for making wise investments in the direct care workforce. Center for American Progress. April 10, 2019. Accessed January 21, 2022.  
[www.americanprogress.org/article/state-options-making-wise-investments-direct-care-workforce/](http://www.americanprogress.org/article/state-options-making-wise-investments-direct-care-workforce/)