THE GEORGE WASHINGTON UNIVERSITY
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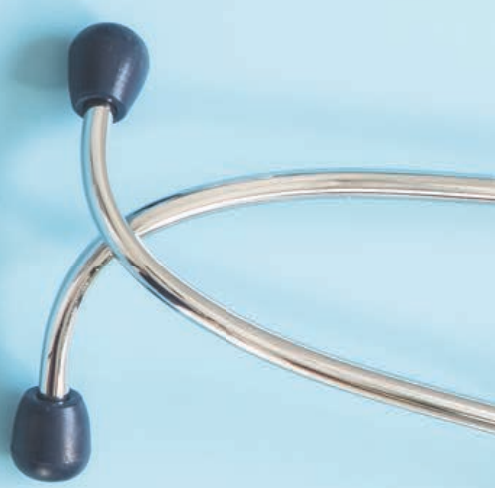
GW COVID-19 NATIONAL HEALTH WORKER SURVEY

FIRST RESULTS

The George Washington University Milken Institute
School of Public Health

Executive Summary



This report summarizes results of a national COVID-19 health care worker (HCW) anonymous online survey conducted by students and staff with support from faculty mentors of the Department of Environmental and Occupational Health at The George Washington University Milken Institute School of Public Health. The survey was launched in May 2020 to capture the COVID-19 related workplace experiences of a group of HCWs, frontline US workers who have worked since the onset of the pandemic to provide care for millions of Americans. This report discusses survey responses of 1,200 HCWs collected during May and June 2020.

There are over 18 million HCWs in the US (1) and HCWs on the frontlines of the COVID-19 pandemic have much to say about what should be done to prevent future COVID-19 exposures and infections. Unfortunately, their voices have often been unheard in the national COVID-19 response. The objective of this survey was to give voice to the experiences of these workers who are caring for and healing millions of people under extraordinary circumstances.

The following concerns were repeatedly mentioned in survey responses:

- Frustration with the unsafe working conditions, especially failed access to personal protective equipment (PPE).
- Instances of retaliation and at times bullying for voicing their safety concerns to employers.
- Perceptions that employers prioritized hospital profits over worker safety and created an unhealthy work environment where workers felt devalued and threatened.

In their responses, survey participants asked for evidence-based protections, improved access to PPE, and greater respect and support from employers, researchers, and the general public.

INTRODUCTION

The COVID-19 pandemic has created a worker safety crisis, and the response in many health care institutions and facilities has been inadequate given the significant risks of exposure and serious illness faced by their employees.

Across the US, the structure of work has been drastically transformed by the pandemic. While many office based workers have been able to work remotely, essential workers have had to be physically present at their workplace, risking exposure to severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the virus causing COVID-19.

Health care workers (HCWs), encompassing the entire range of workers in hospitals, nursing homes and other health and long-term care facilities, are among those at greatest risk of workplace exposure to the virus because they provide care to patients with COVID-19 **(2,3).** During the pandemic they have often been characterized as heroes and commended for their sacrifices and their willingness to remain on the frontlines of fighting the COVID-19 pandemic. Yet, many of these workers have not had proper virus or airborne pathogen protection at work, and often have not been given adequate personal protective equipment (PPE).

Inadequate care and failure to prioritize worker safety has placed HCWs at greater risk of COVID-19 infections and deaths, and they have experienced other adverse physical and mental health consequences **(4,5).** In addition, the COVID-19 pandemic has exacerbated health inequities in the US and has amplified patterns of racism and classism that oppress society's most marginalized members **(6,7).** Occupational status is an important social determinant of health, with low income workers experiencing the greatest burden of disease and injury.

HCWs nationally and internationally continue to be affected by COVID-19. The exact number of HCWs who have been infected with SARS CoV-2 is unknown because few studies are focusing specifically on COVID-19 and occupation **(8),** and no national reporting standards exist to track morbidly and mortality among all HCWs **(9).** In the most recent report comparing US HCW infections to the general population, which was published in April 2020 and early in the pandemic, the Centers for Disease Control (CDC) reported that nearly 1 in 5 of all COVID-19 cases nationally were health care personnel **(10).** By July 2020, COVID-19 infections among HCWs increased tenfold from April **(11).**

As of May 9, 2021, based upon the limited data available, the CDC reported nearly half a million COVID-19 cases and 1,585 deaths among HCWs **(12),** although true cases and deaths are likely much higher. A separate investigation conducted by The Guardian and Kaiser Health News reported 3,607 HCW lives lost in the first year of the pandemic **(13).** Of the lives lost, over two thirds were HCWs of color, and more than 50 percent were nurses (32 percent) and healthcare support staff (20 percent) most frequently tasked with everyday COVID-19 patient interaction **(13,14).**

Whereas prior reports have provided important quantitative information about the regional and national COVID-19 experiences of HCWs, this report provides a narrative picture of workers' experiences, in their own words.

"Take your employees' concerns or questions seriously. Do not treat them as though they are disposable."

-Hospital Supervisor, NJ

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METHODS

A research team of students and staff, with guidance from faculty mentors at The George Washington University Milken Institute School of Public Health developed an online survey to better understand the experiences of frontline HCWs, including how they are being exposed to SARS-CoV-2, and what can be done to prevent future infections. The survey was developed using REDCap (Research Electronic Data Capture), a secure web-based application for online surveys and databases. It was then tested among volunteers from health care worker organizations before it was finalized and made public. The final survey collected data on demographic characteristics such as age, gender, race/ethnicity, and occupation, as well as work site location(s), health care facilities, personal protective equipment (PPE) received, employer-imposed conditions and restriction to PPE use, and worker exposure to COVID-19 patients.

In addition, the survey included the option for HCWs to assess their working conditions and safety-related concerns through open-ended questions and comments. The open-ended questions were as follows:

- Is there anything else you would like to add about your experience working as a health care worker during the COVID-19 pandemic (for example, the adequacy of protections and procedures to prevent exposure and infection)?

- Do you have suggestions or recommendations on what should be done to prevent future exposures to and infections from COVID-19?

- Please describe any policies or actions that have been taken at your workplace that have helped reduce risk of exposure to COVID-19.

Several outlets were used to advertise the survey, including in-person communication, emails, a press release, Twitter, Facebook, flyers, and newsletters. The survey was also sent to state departments of health, professional health care organizations, nurses and hospital associations, and worker unions.

The data summarized in this report were collected during Phase I of the survey **(5/4/2020 - 6/29/2020);** Phase II of the survey continues to actively collect data (https://publichealth.gwu.edu/covidsurvey). In Phase I, 1,200 health care workers responded. Respondents represented over forty health care worker occupations from all 50 states and the District of Columbia.

The survey and participant recruitment were approved by the George Washington University Institutional Review Board (IRB# NCR202438). Participants were asked to review and affirm an online consent form prior to taking the survey.

RESULTS

I. Quantitative Results

A total of 1,200 Healthcare Workers (HCWs) responded to Phase 1 of the survey, from May 4 to June 29, 2020. **Tables 1 and 2** display their demographic characteristics, job titles, worksite type(s), and work locations.

Table 1. Demographics of Survey Respondents

Participants (N=1,200)	N (%)
Age (n=740)	
Median (Range)	46 (21-80)
Under 30	86 (11.6)
30-49	356 (48.1)
50-69	286 (38.6)
70 or older	12 (1.6)
Sex (n=748)	
Male	126 (16.8)
Female	607 (81.1)
Another or Prefer not to answer	15 (2.0)
Hispanic, Latino or Spanish Origin (n=746)	
Yes	36 (4.4)
No	682 (91.4)
Prefer not to answer	26 (3.5)
Unknown	2 (0.3)
Race (n=754)	
White	616 (82.7)
Black or African American	54 (7.2)
Asian or Pacific Islander	27 (3.6)
American Indian or Alaska Native	10 (1.3)
Another	12 (1.6)
Prefer not to Answer or Unknown	35 (4.7)
State (Most frequent, n=952)	
Ohio	303 (31.8)
Virginia	85 (8.9)
New York	74 (7.8)
New Jersey	38 (4.0)
Montana	36 (3.8)
Maryland	31 (3.3)
California	27 (2.8)
Texas	24 (2.5)
District of Columbia	23 (2.4)
Massachusetts	23 (2.4)
Pennsylvania	20 (2.1)
*Missing values not included	

Respondents were predominantly female and White and the largest single occupation reported was registered nurse. Registered nurse respondents in the survey were comparable in race and sex to national data **(15).**

Table 2. Most Common Occupations and Facility Type Among Survey Respondents

Job Title (n=868)	N (%)
Registered Nurse	464 (51.7)
Licensed Practical Nurse	63 (7.0)
Emergency Department Physician	51 (5.7)
Nurse Practitioner	47 (5.2)
Surgeon	32 (3.6)
Physician (not otherwise listed)	20 (2.2)
Other	40 (4.5)
Facility Type (n=1,096)	
Hospitals	678 (61.9)
Nursing Care	103 (9.4)
Physician Office	88 (8.0)
Health Care Center	79 (7.2)
Home Health Care	31 (2.8)
Dentist	19 (1.6)
Health Practitioner	18 (1.5)
COVID-19 Testing Facility	10 (0.9)
Prison	9 (0.8)
Other	61 (5.6)
No. of Facilities Worked (n=952)	
1	776 (81.5)
2	101 (10.6)
3	75 (7.9)
*Missing values not included	

Hospitals were the primary worksite for most survey participants. Approximately 18 percent of respondents reported working at more than one healthcare facility during the COVID-19 pandemic.

Table 3 displays reported PPE use provided to respondents by their employer during the COVID-19 outbreak.

Table 3. PPE Provided During the COVID-19 Outbreak	
Type (n=1,200)	**N (%)**
Gloves	733 (61.1)
Gown	620 (51.7)
Protective Goggles	507 (42.3)
Face Shield	519 (43.3)
N95 Respirators	561 (46.8)
P100 Respirators	103 (8.6)
Air Respirators	111 (9.3)
Elastomeric Respirators	12 (1.0)
Surgical Mask	651 (54.3)
Face Cover	77 (6.4)
None	24 (2.0)
Other PPE	42 (3.5)
Unknown	5 (0.4)
Type of supplied PPE was appropriate to protect from COVID-19 exposure (n=769)	
Yes	585 (76.0)
No	184 (24.0)
Amount of supplied PPE was adequate to protect from COVID-19 exposure (n=769)	
Yes	419 (54.4)
No	350 (45.5)
Employer provided PPE Training (n=761)	
Yes	643 (84.5)
No	118 (15.5)
Employer provided PPE training after January 1, 2020	
Yes	556 (73.3)
No	202 (26.6)
Had to reuse own PPE	
Yes	448 (37.3)
No	752 (62.7)
Had to reuse others' PPE	
Yes	86 (7.2)
No	1,114 (92.8)
*Missing values not included	

The most commonly provided type of PPE was gloves. Almost half of participants reported receiving N95 respirators. Nearly 1 in 4 respondents reported that the type of PPE provided by their employer was inappropriate to protect them from exposure to the COVID-19 virus and other workplace hazards, and nearly 1 in 2 reported the supply of PPE was inadequate. Approximately 16 percent did not receive PPE training from their current employers, and 27 percent did not receive such training after January 1, 2020.

II. Qualitative Results

Participants had the option of providing write-in comments. Respondents reported significant variation in the efforts made by employers to help protect HCWs throughout the COVID-19 pandemic. The **appendix** lists the identified themes, which are discussed below through the voices of HCWs. Several respondents expressed feeling adequately protected and informed by their employer's efforts:

"Initially, we did not feel safe because we had a PPE shortage and a shortage of cleansing wipes. I did not feel like I should wear a gown and goggles with every patient because we were worried that we would run out of PPE. I feel like I have enough of both these items now."

- Registered Nurse (Nursing and Residential Care Facility), VA

"I believe our hospital is taking all precautions available to protect us from COVID 19."

- Registered Nurse (Hospital), MT

"My facility did an excellent job of keeping all staff up to date with changes by having daily or even twice daily email updates. I believe they act with the best interests of patients and staff in mind. It was one of the few facilities in the area that did not layoff or furlough staff."

- Registered Nurse (Hospital), VA

"We have very strict yet appropriate guidelines for PPE due to trying to maintain appropriate supply."

- Registered Nurse (Hospital), VA

"I feel very safe and protected at my work."

- Registered Nurse (Ambulatory health care service), MT

"My hospital has been more than generous with PPE while maintaining good stewardship of supplies on hand."

- Registered Nurse (Ambulatory health care service), MT

Yet, many other responses depicted a demanding work environment fraught with a shortage of PPE - particularly N95 respirators - and inadequate fit testing. Many HCWs reported being scared of infecting people they lived with, fear of losing their jobs, or chastised and retaliated against for voicing their safety concerns to their employers. Many respondents also expressed frustration with constantly changing employer policies, and called on the need for national policy change - particularly the invocation of the Defense Production Act - to increase PPE stockpiles.

Major themes of concern that emerged from survey respondents are described below:

A. Fear of Infecting Patients and Family

Because of a continual shortage of PPE, many HCWs expressed concerns for their own safety and the safety of their loved ones. Respondents cited improper occupational safety measures as inducing fear of becoming infected and bringing the virus home to their families:

"We are scared to death that we may infect our families. I tested negative recently and it was a HUGE relief."

- Registered Nurse (Hospital), VA

"Lots of staff still felt a lot of fear about being exposed to patients and what they might need to do to care for them or come into our specialized unit. There was also a lot of fear from the public at first towards healthcare workers which was hard to deal with as well on top of everything else."

- Radiologic Technician (Hospital), MD

B. PPE - Inadequate Supply, Fit, and Distribution Prompts Hoarding and Fear

PPE is of fundamental importance in protecting HCWs from airborne hazards. Its effectiveness is dependent on how adequately workers are trained to use it. Additionally, PPE needs to be fitted properly and used correctly and consistently **(16).** Inadequate access to PPE has been a significant problem in health care facilities since the start of the pandemic and lack of access to PPE has undoubtedly resulted in many cases of COVID-19 among HCWs. Survey respondents described multiple concerns over PPE supply, adequacy, and fit, and a subsequent culture of hoarding and fear:

Concerns over PPE Shortages

"The inadequacy of PPE is appalling! I am expected to use a 'procedure mask' for a month and even longer. My office manager states we cannot get in anymore masks for the time being. Yet, we went back to seeing patients on a full time basis today...I see people at the grocery wearing better masks than I wear at work!"

- Medical Assistant (Office of Physician), OH

"From the week of our very first positive COVID-19 patient the availability of PPE was inadequate. The recommendations for what PPE to use changed from day to day. It was a struggle to obtain PPE and received pushback every step of the way while trying to protect ourselves and our patients."

- Physician Assistant (Hospital), NY

"We are not allowed to wear gowns to transport covid patients. We are in extremely close proximity and physical contact [with] beds in elevators and do not have proper PPE. We were not allowed to be fit tested for the new N95 masks and there is a limited amount of the masks that we were previously fit tested for."

- Registered Nurse (Hospital), NJ

"My N95 is a month old, the straps broke I was told to staple [them] back together and wear it. It no longer fits my face."

- Registered Nurse (Hospital), OH

Concerns over PPE Fit

In addition to an overall lack of PPE, respondents described inaccessibility to fit testing and having to wear misfitting PPE. Appropriate fit testing and fit of PPE are crucial in reducing the risk of exposure to SARS-CoV-2. So much so, the CDC requires supplementary testing after the occurrence of physical changes that could affect the fit of respirators **(17).**

"...fit testing has been completely inaccessible and the masks we are administered are not what we were fit tested for."

- Researcher (Hospital), NY

"We are fitted to various sized n95 masks. Recently we have run out of all the normal supply, and have been given new, almost generic n95s. They are adequate at best. None of us feel protected wearing these masks."

- Registered Nurse (Hospital), District of Columbia

Hoarding PPE and Devaluing Health Care Workers

In some instances, the shortage of PPE prompted meticulous supervision of PPE supply, storage and distribution. These existing problems were compounded by greater emphasis on the "financial" bottom line among some employers, as opposed to employee safety. Some respondents reported that employers kept PPE away from workers on the frontlines of the COVID-19 pandemic by hoarding PPE. Workers expressed these actions made them feel as if their employers deemed them as disposable:

"Working as a nurse during the COVID-19 pandemic is terrible. There was sufficient evidence that COVID-19 was being community spread and asymptomatically spread. My coworkers and I kept asking administration if we could use PPE, or bring our own masks to wear. Admin [Administration] lied to us continuously saying that we are only seeing asymptomatic patient[s] and we are at zero risk. Several days after asking for PPE I was exposed to COVID-19 by a patient who lied about not having symptoms. I developed COVID-like symptoms and was in the hospital for trouble breathing. My work has made me use my vacation hours that I saved up for almost a year. Every day my manager asks me to come back in but I'm still recovering and don't feel physically able yet. I keep reaching out to HR about short-term disability or workers comp but they don't respond to me. I'm still sick but I run out of vacation time this week and so sick or not I have to return or lose my job."

- Registered Nurse (Hospital), CA

"During the first round of outbreak, my manager locked up PPE. You could only get it if the MD ordered COVID-19 testing. On a suspected case we were only allowed to wear the surgical masks."

- Registered Nurse (Hospital), OH

"The hospital received a large donation of N95s, they refused to fit test us to the new masks. When I asked if we can donate them to a hospital that could use them they refused - they are hoarding them."

- Registered Nurse (Hospital), CO

"Our policy now states if our hospital incidence is less than 5%, we no longer test and we cannot wear N95 even for airway cases, bronchs, trachs. My concern is that while we don't currently have a shortage of N95 and I understand [the] need to conserve, there seems to be more [concerns] about saving PPE rather than saving us from being infected."

- Surgeon (Hospital), TX

C. Engendering Mistrust: Inconsistent and Lack of Evidence-Based PPE Policies

Some survey respondents described being asked to follow non evidence-based policies during the COVID-19 pandemic, and repeatedly declared it necessary for COVID-19 occupational guidelines to be based on science and not politics nor PPE supply and demand. The survey found an urgent call for consistency and transparency in occupational safety and health policies. The respondents denounced erratic changes to existing guidelines because they created confusion and inconsistency. These inconsistent guidelines engendered mistrust among health care workers in agencies of all levels:

"General theme is that CDC and then hospital recommendations for PPE and testing (indications) have been driven by supply/demand rather than medicine or science. This has been an especially frustrating aspect of this fight and has caused many clinicians to lose trust in CDC, state health dept and other regulatory bodies."

- Emergency Department Physician (Hospital), VA

"The lack of trust with research foundations has diminished almost completely in regards to how they treat frontline workers. The inadequacy is appalling and free food or being called heroes doesn't remedy the situation. Give us the proper ppe and don't lie to us."

- Registered Nurse (Hospital), MD

"The pandemic was overall poorly managed. There was [not] enough training [on] how to use PPE. There was [not] enough PPE. The FDA and other authorities have changed the guidelines too often and made it impossible to adhere to."

- Critical Care Physician (Nursing and residential care facility),PA

"PPE guidelines have been based on availability and supply and not on what would be safest. [There are] reports or cases where likely aerosol spread took place or super spreaders proliferate large viral loads that would best be protected using an N95. Our hospital system has told us we only need a surgical mask when in close proximity to a Covid PUI [person under investigation] or a Covid positive patient. I DON'T BELIEVE OR TRUST THIS RECOMMENDATION."

-Emergency Department Physician, IN

D. Work Culture of Intimidation and Retaliation

A prevailing concern expressed by respondents was that the national shortage of PPE evoked objectionable actions by employers under the guise of optimizing PPE supply. Individuals noted retaliatory behavior from hospital management, administrators, and employers, stating that employers refused to test, provide proper equipment, and created work environments making health care workers feel intimidation and fear:

"We were told that we were just supposed to follow the PPE policy and not question it. I felt very intimidated about asking questions about the ever changing and very confusing policies."

- Registered Nurse (Hospital), DE

"Administrator publicly chastised employees for concerns over covid...refuses to wear a mask, refuses to have temp taken."

- Registered Nurse (Hospital), MT

"Punitive assignments which bring additional exposure to punish me for requesting appropriate PPE for intubations. Then told I would not be able to use my own face shield as a punishment."

- Anesthesiologist (Hospital), MA

"Employer has ostracized and marginalized emergency department leadership who have advocated for reasonable measures for protection for all (not just ED) employees."

- Emergency Department Physician (Hospital), VA

"Chastised and instructed not to wear surgical mask on medical floor three weeks before it became policy for all 'patient facing employees' to wear masks at all times. This was following exposure to positive patient while waiting for testing to come back."

- Food service (Hospital), WI

E. Agencies, Administrators and Policymakers: Failing to Protect Workers

Respondents also commented on the role of policy makers, regulatory agencies and administrators during the pandemic, who ultimately failed to effectively perform their duty to protect workers. The Occupational Health Safety Administration (OSHA) failed to use its power to enforce protective measures during the largest occupational health crisis of modern times.

"OSHA is completely useless they are also in the pocket of the AHA [American Hospital Association]. Force hospitals to provide adequate PPE. Fine them if they refuse to do so. OSHA needs to do their job and protect employees. Govt [Government] needs to go into defense mode and have factories make PPE."

- Registered Nurse (Hospital), MD

"At a minimum, all medical workers should have N-95 masks throughout our contact time with patients. OSHA regulations are clear on this point.

The limited supply of proper PPE defines hospital administrators' and politicians' failure to provide proper protection. Multiple recent lawsuits by nursing unions on this issue [will] be crushing to Hospitals."

-Emergency Department Physician (Hospital), SC

To better the working environment, one respondent recommended "allowing workers to take sick leave," implying that the hospital system or clinic did not allow for sick or other forms of leave during the pandemic.

F. Power Relations and Health Inequities

The root causes of health inequities — structural systems of oppression — have exacerbated the impact of COVID-19 among vulnerable and marginalized communities. Integral to systemic oppression are power and power relations. Participants expressed different situations in which power differences influenced their accessibility to occupational safety. HCWs with less formal education were delegated tasks with higher risk level of exposure to COVID-19.

Power differentials often deprived health care workers of the opportunity to voice safety concerns. Furthermore, lack of preparation at institutions, poor planning and coordination perpetuated existing power relations:

"...obvious classism has further splintered efforts at a unified, compassionate approach that keeps all staff and patients safe. A divide exists between clinical and other 'non-clinical' staff. Leadership determined that my entire Patient Transport department did not qualify to receive N95's, for example, whereas I've seen some doctors and nurses sporting two at a time, or other p100 respirator masks of the 3M variety. The class divide is causing anger and resentment among those who now see the leadership as cold and inhumane."

Surgeon (Hospital), NY

"I was asked to go into a COVID-19 patient room with inadequate PPE. I called a 'safety stop' for the unsafe behavior per hospital policy. The assistant manager who gave me the unsafe assignment told me, 'No, this is not a safety stop.' After I offered to go home, I was reassigned and was called to a meeting with the manager and assistant manager later that day regarding my assignment refusal."

- Registered Nurse (Hospital), CA

"My coworkers are terrified. Many nurses are taking unpaid leave rather than be exposed. Many doctors do not go bedside to assess covid patients, all care is performed by nursing staff."

- Registered Nurse, (Hospital) District of Columbia

DISCUSSION

The responses to this survey, provided by volunteer anonymous HCWs from around the nation, are not representative of all HCWs. However, we believe that they contain important insights into the conditions facing HCWs on the frontlines of this pandemic and remind us that much about the experience of these HCWs cannot be characterized by statistics alone — there are voices and experiences of real people behind every statistic. These workers described a variety of experiences, some positive and some not. Some reported employers who helped protect them from COVID-19 infection; other respondents shared excruciating experiences, ranging from retaliation from employers to being treated as disposable.

It is estimated that 40 percent of the US population has worked in "essential" industries during the COVID-19 pandemic. HCWs represent the largest share of these workers **(18).** The COVID-19 crisis and this survey's findings highlight the immense challenges they have faced. Many HCWs have reported these challenges causing them to feel unsafe. Separate surveys conducted by the American Nurses Association (ANA), National Nurses United (NNU), and Health Professionals and Allied Employees (HPAE) reported similar concerns about PPE among nurses to those expressed by the respondents of this survey **(19,20,21)**. A total of 87% of nurses reported re-use of single-use PPE in their workplace **(19),** and more than half (53%) of nurses expressed feeling unsafe due to being forced to re-use and decontaminate single-use PPE **(20).**

The experiences of HCWs are shaped by their specific occupational environment, including risk of exposure to COVID-19. Unfortunately, this is not confined to work location. The possibility of taking the virus to their respective homes and exposing others was tangible and induced fear among HCWs in our study, a sentiment echoed in other studies **(22,23).** Respondents in our study also reported hostile work environments created by employers engaging in egregious retaliatory behavior upon workers' voicing safety concerns. Similar experiences have also been reported in separate surveys **(21).**

Further, multiple respondents described how the COVID-19 health care workforce is not immune to oppressive systems. In the US, formal educational attainment creates and sustains an occupational hierarchy. A higher level of formal education facilitates access to higher paying occupations, deemed skilled labor. Occupations requiring less formal training are described as unskilled or low-skill labor, despite their undeniable skill requirements. Access to formal education is not equitable, helping sustain varying income levels and classism. This creates inequitable access to the resources needed to achieve optimal health. Among survey respondents on the frontlines of the COVID-19 pandemic, the occupational hierarchy affected access to occupational health protections and illustrates how power relations should be an important focus of future occupational health research.

HCWs are one segment of the workforce among many who are performing critical frontline jobs during the COVID-19 pandemic. While HCWs are providing direct care to COVID-19 patients, farmworkers and workers in meat and food factories continue to feed the country, mail and delivery workers ensure vital packages and documents are safely transported, grocery workers continue to restock shelves, and pharmacists continue to refill prescriptions. Millions of workers continue to face COVID-19 risks each day to keep the country operating.

There are major equity-related challenges for essential frontline workers. Due to the nature of their day-to-day work, these workers are disproportionately at risk for contracting COVID-19 from the general public; if infected, they are also disproportionately burdened by existing US economic inequalities in household income, health insurance coverage and other factors **(18).**

There are also major ethnic and racial disparities, with Black and Hispanic individuals disproportionately represented in the healthcare and other essential industry workforce. Black workers account for nearly 17% of all frontline workers in essential industries **(24,25).** They also represent nearly 30% of the worker population in one of the six frontline industry groups compared with less than 20% White workers **(24,25).** As a comparison, 60% of Americans identify as White while only 13% as Black **(26).** Hence, occupational health and safety policies and protections — or the lack thereof — have a much larger adverse impact on Black Americans who already face layered challenges of anti-Black racism and workplace discrimination.

As is the case among the general population, Black and HCWs of color have been disproportionately impacted by the COVID-19 pandemic **(1,13,14,27,28).**

The US Food and Drug Administration (FDA) has issued emergency use authorization for several COVID-19 vaccines. HCWs in many parts of the country have since been prioritized for vaccination. This is an important and encouraging development amid the devastating impact the virus has had on the nation's hospitals and healthcare system. The responses to this survey represent important lessons and considerations as states and health care settings continue administering these vaccines to its health workforce. On its own, a vaccine cannot ensure the safety of workers in an environment fraught with unstable employer-employee power dynamics and fears of employer retaliation. In fact, such conditions would likely adversely affect the vaccine distribution in these settings. In the months ahead, vaccine distribution must complement existing and effective infection-control measures and policies within these work environments.

Recommendations from Health Care Workers

An objective of our survey is to help amplify the voices of HCWs. As workers on the frontlines of the COVID-19 pandemic, HCWs possess invaluable insight and first-hand knowledge to inform occupational best practices and recommendations. Their voices are critical to addressing occupational health and safety now and in the future. It is of utmost importance that greater attention is given to the impact these circumstances have on the health and well-being of HCWs.

Among the recommendations offered by survey respondents, HCWs stressed the need for improved communication amid a hectic work environment characterized by evolving guidance and policy changes:

"Streamline communication and have a designated source for the information not coming from multiple sources in several different emails that you have to read before you are up to speed on the latest policies and procedures - should be discussed in brief huddle at the start of the shift for all to hear and be a part of."

- Paramedic (Hospital), VA

Yet, the clearest theme that emerged from respondents was the need for the federal government to increase PPE stockpiles:

"Have an emergency supply of PPE and get rid of the 'highest bidder gets the masks' notion."

- Registered Nurse (Hospital), MD

"We need to have emergency stores of PPE available for these situations with new viruses emerging."

- Registered Nurse (Hospital), VA

"All HCW's [in] all [settings] should be fit tested for N95 masks at a minimum. PPE needs to be manufactured in the US and stockpiled in the US. Period."

-Physician of Occupational Medicine, WA

"Use a system like the military's to signal the adequate PPE and response to the nuclear, biological, or chemical threat."

- Dental Assistant, AZ

Overall, the most prominent recommendations voiced by health care workers include:

- Worker protection policies based on scientific evidence.
- Consistency and transparency from agencies and employers on science and policies.
- Stockpiles of PPE to ensure workers always have access to adequate amounts and types of PPE to perform work duties and responsibilities.
- Respect and support from employers, researchers and the general public, including clear centralized communication, labor rights protecting their vacation time, mental health care, and zero tolerance for bullying and retaliation from employers and/or co-workers when voicing safety concerns.
- That researchers and the general public move beyond simply labeling HCWs as heroes to engaging in behaviors that prevent the spread of COVID-19 and supporting occupational safety and health needs of HCWs.
- Recommendations that are enforced; if not, they are futile. HCWs urge regulation and enforcement from agencies and policymakers to protect HCW occupational safety and health.

CONCLUSION

Health care workers are a critical segment of the workforce on the frontlines who continue to provide services for this nation during the ongoing pandemic. It is imperative to listen to the voices of HCWs, engage in measures that reduce the spread of COVID-19, and enforce scientifically sound occupational health policies.

The GW Healthcare Workers COVID-19 survey is ongoing, and we hope this report will help encourage new and diverse participants in the future. We thank the past and future participants of this survey for providing valuable insight into this and future pandemics and entrusting the research team with their experiences and recommendations. We are also grateful for all of the HCWs nationwide who continue to provide critical services during the COVID-19 pandemic.

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Appendix
Summary of Themes Found & Example Quotes

Positive Experiences	"My facility did an excellent job of keeping all staff up to date with changes by having daily or even twice daily email updates. I believe they act with the best interests of patients and staff in mind. It was one of the few facilities in the area that did not layoff or furlough staff."
Fear of Infecting Friends and Family	"We are scared to death that we may infect our families. I tested negative recently and it was a HUGE relief."
Concerns over PPE Shortages	"From the week of our very first positive COVID-19 patient the availability of PPE was inadequate."
Concerns over PPE Fit	"Fit testing has been completely inaccessible and the masks we are administered are not what we were fit tested for."
Hoarding PPE and Devaluing Health Care Workers	"...while we don't currently have a shortage of N95 and I understand need to conserve, there seems to be more [concerns] about saving PPE rather than saving us from being infected."
Engendering Mistrust: Inconsistent and Lack of Evidence-Based PPE Policies	"General theme is that CDC and then hospital recommendations for PPE and testing (indications) have been driven by supply/demand rather than medicine or science. This has been an especially frustrating aspect of this fight and has caused many clinicians to lose trust in CDC, state health dept and other regulatory bodies."
Work Culture of Intimidation and Retaliation	"We were told that we were just supposed to follow the PPE policy and not question it. I felt very intimidated about asking questions about the ever changing and very confusing policies."
Agencies, Administrators and Policymakers: Failing to Protect Workers	"OSHA is completely useless they are also in the pocket of the AHA [American Hospital Association]. Force hospitals to provide adequate PPE. Fine them if they refuse to do so. OSHA needs to do their job and protect employees. Govt [Government] needs to go into defense mode and have factories make PPE."
Power Relations & Health Inequities	"...obvious classism has further splintered efforts at a unified, compassionate approach that keeps all staff and patients safe. A divide exists between clinical and other 'non-clinical' staff."
Recommendations	"We need to have emergency stores of PPE available for these situations with new viruses emerging."