



UNIVERSITY *of* MARYLAND
SCHOOL OF NURSING
MARYLAND NURSING
WORKFORCE CENTER

Analysis of COVID-19's Impact on Maryland Nursing Workforce

December 2021

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Executive Summary

Nationwide, nurses are exiting the profession in growing numbers, leaving the health-care system struggling to meet the demand for health care. In Maryland, hospitals, clinics, physician's offices, schools, and long-term care facilities are all experiencing difficulties with recruiting and retaining nurses. Many of the issues that have led nurses to leave their jobs predated COVID-19, but the pandemic has exacerbated challenges due to multiple patient surges over the past two years.

The state of Maryland has 86,954 active licensed registered nurses (RNs), and the Bureau of Labor Statistics reports that 51,480 licensed RNs are employed in Maryland. Hospitals in Maryland are facing a severe shortage of RNs, and many have had to contract with nursing staffing agencies for temporary "travel" nurses.

The purpose of this study is to describe the impact of the pandemic on Maryland's nurses, to explore their intent to stay or leave the profession, and to identify actions that would encourage nurses to remain in their current positions.

An online, anonymous survey was administered October through December 2021. The final study group of 1,999 respondents included RNs, licensed practical nurses (LPNs), advanced practice registered nurses (APRNs), and certified nursing assistants (CNAs) working in inpatient or outpatient settings, academia, and public health roles throughout Maryland during the COVID-19 pandemic.

The specific research questions to address were:

- What is the impact of COVID-19 on the Maryland nursing workforce's physical health, mental health, and financial well-being?
- What is the impact of COVID-19 on the Maryland nursing workforce's intent to stay in the profession?
- What factors would increase nurses' willingness to remain in the Maryland workforce?

Summary of Results

Impact of COVID-19 on the Maryland Nursing Workforce

Nurses are physically exhausted, and 48% report sleeping less than they did prior to the pandemic. Within the week preceding taking the survey:

- 48% of nurses reported feeling nervous, anxious, or on edge for several days
- 43% could not stop or control worrying
- 43% felt down, depressed, or hopeless
- 42% had little interest or pleasure in doing things
- 21% reported an increase in alcohol consumption
- 10% reported an increase in medications to treat anxiety, with another 9% reporting starting medications for anxiety for the first time

- 40% reported moderate to severe stress

Overall, the average nurse suffered 70 times as much COVID-19-related anxiety as did the average member of the population.

Impact of COVID-19 on Maryland Nursing Workforce Intent to Stay or Leave the Profession

The survey also found that nurses reported a high level of moral injury:

- 58.31% felt betrayed by institutional leaders they once trusted
- 54.06% felt betrayed by others outside of the health-care profession
- 61.75% reported that their physical health and safety were compromised without their consent
- 49% reported feeling significant burnout or were completely burned out
- 62% reported an intent to leave their current nursing job

Younger, less-experienced nurses and those rendering direct patient care reported higher levels of betrayal. Also, new graduates and less-experienced nurses felt higher levels of anxiety, stress, and burnout symptoms that do not go away as well as expressed a greater intent to leave their current nursing jobs.

Factors Affecting Willingness to Remain in the Maryland Nursing Workforce

When asked what would encourage them to stay in the Maryland nursing workforce:

- 83% said financial incentives, with salary increases, annual bonuses, hazard pay, and/or increased retirement contributions
- 74% said improved staffing conditions, including nurse-to-patient ratios, ability to self-schedule, and flexibility in required shift work
- 50% said acknowledgment by leadership of nursing's contributions to health care
- 44% said assurances of personal protection and safety during large-scale emergencies
- 37% said time within the workday to access health and wellness resources

Key Recommendations

1. Payment reform and value-based compensation

- Establish contractual triggers that automatically increase nurse salaries in defined situations, such as low nurse-to-patient staffing ratios, reduced support help (patient care technicians (PCTs), CNAs), and hazardous pay in the event of pandemics or other states of emergency.
- Establish a graduated overtime structure, such as 1.5x hourly overtime pay for working 40-50 hours per week, double pay for 50-60 hours, triple pay for 60-70 hours, and quadruple pay for 70+ hours.
- Reward nurses when hospitals achieve and maintain certain safety benchmarks (ex: CLABSI, CAUTI).

- Provide additional compensation for certifications, skills, or specializations.
- Guarantee increased compensation with each year of work at an institution, such as rewarding the wisdom of more-experienced nurses with earnings above less-experienced nurses.

2. Improved staffing

- Establish nurse-to-patient standards for each patient care unit based on acuity, average turnover of patients due to discharges and admissions per shift, and changes in patient conditions.
- Establish nurse support personnel standards and ratios for each patient care unit.
- Provide flexibility in staffing, such as shorter shifts or flex shifts.

3. Acknowledgment of nursing's contribution to the hospital's revenue generation

- Build shared governance into all aspects of care—nurses know their jobs and asking them the best way to do something can be more efficient and effective.
- Provide nurses with the authority to make decisions regarding admissions, discharges, and staff assignments to meet real-time circumstances. Nurses need to be able to assess the conditions of the patients on a unit and determine whether there is adequate staff and resources to accept an admission. For example, a sudden stream of admissions to a unit may tip the balance to an unsafe environment for all patients.
- Develop financial models that assign value in dollars to the work that nurses do. Bundling nursing services with hospital room and board charges is both devaluing and demoralizing. When nurses see how much their work contributes to the organization, they are more committed to quality work.
- View nurses not as a widget to be managed but as valued members of the health-care team in providing for the well-being of patients, families, and the community.

4. Provide multi-pronged and responsive mental health and resilience programs, along with work time to access them, to all nurses.

- Embed programs as part of the organizational culture rather than keep them as an optional service in which nurses have to make extra time to participate.
- Provide regular debriefing sessions on each unit to address stressful, distressing, and unexpected events.

Background

The U.S. health-care system is struggling to meet the demands for hospital-based care due to a lack of nurses to care for the surge of patients created by multiple waves of COVID-19 infections, and Maryland is no exception. According to the Department of Labor, the U.S. has over 4 million RNs, 86,954 of them licensed in Maryland. Yet as of December 2021, several Maryland hospitals had enacted crisis standards of care, a framework for the gradual degradation of health-care services when there are not enough

resources available to meet the demand for care. Maryland hospitals have plenty of beds but not enough available nurses to cover them. Nurses have become a scarce resource during the pandemic, and this is putting patients at risk. By the time the omicron variant pushed the nation into year three of the pandemic, nurses were physically, mentally, and morally exhausted and were leaving the employment situations in large numbers.

Everyone is chasing the travel money and we're left with no one. Running on fumes and working at 40% vacancy as a new norm. (survey respondent)

While the pandemic was the breaking point for many nurses, the current nursing shortage has been in the making for almost a decade. A review of the literature indicates that predictions for a shortage peaking in 2022 were made as far back as 2013.¹

The Maryland Nursing Workforce Center (MNWC) was established in 2018 with a grant through the Maryland Higher Education Commission (MHEC) Nurse Support II program. The purpose of the MNWC is to gather and report data on the current status of nursing in Maryland and to develop and support programs to address the pipeline, education, and retention of the nursing workforce. In August 2021, the MNWC partnered with researchers at the Johns Hopkins School of Nursing and the Johns Hopkins Bloomberg School of Public Health to design and execute a statewide analysis of Maryland's nursing workforce. The purpose of this study was to characterize the impact of the pandemic on Maryland's nurses, to explore their intent to stay or leave the profession, and to identify actions that would encourage nurses to remain in their current positions.

As stated in the executive summary, the specific research questions addressed were:

- *What is the impact of COVID-19 on the Maryland nursing workforce's physical health, mental health, and financial well-being?*
- *What is the impact of COVID-19 on the Maryland nursing workforce's intent to stay in the profession?*
- *What factors would increase nurses' willingness to remain in the Maryland workforce?*

Survey Methodology

The study team administered an online cross-sectional survey composed of questions related to the impact of the COVID-19 pandemic on nurse well-being, mental health, job satisfaction, and pandemic-related challenges experienced in their professional role. Prior to the implementation of the research, the team submitted an application to the University of Maryland Institutional Review Board (IRB), which ruled that since the submission did not involve human subjects research, it wasn't subject to IRB review.

Questionnaire: The online survey comprised 71 close- and open-ended questions that covered key measures of nurse well-being, mental health, and job satisfaction and challenges. The number of questions a respondent answered depended on survey logic. Three of the open-ended questions were further analyzed qualitatively using NVivo software. The survey questions were derived from previously validated surveys and published scales for mental health.²⁻⁷ This survey was designed to take approximately 10 to 15 minutes to complete and was accessible from the last week in October 2021 through the first week of December 2021.

Dissemination: Recruitment of study participants was done via contact with key stakeholders and requests to disseminate the survey through organizational distribution using a snowball sampling approach. Organizations that agreed to disseminate the survey to their constituents included:

- Maryland Nurses Association
- Maryland Organization of Nurse Leaders Nurse Residency Program Inc.
- Maryland Higher Education Nurse Support I and II (NSP I and II) grant recipients (which included leadership at all Maryland hospitals)
- Maryland Council of Deans and Directors of Nursing Schools

The Maryland Nurses Association disseminated the survey via their online membership newsletter that serves their entire membership base, and many of the NSP I and II hospital contacts disseminated the survey link to nursing distribution lists within their organizations. Some individuals sent the invitation to participate via their personal Facebook pages, but no full-scale distribution was conducted via social media outlets.

Survey security: The invitation to participate in the survey included a link to access a secure, cloud-based, multi-item survey hosted in the Qualtrics research suite software.⁸ Respondents were allowed a single survey response per individual, restricted by IP address. Participation was voluntary and consent was obtained at the beginning of the online survey. All survey responses were anonymous and confidential. Qualtrics uses transport layer security, or TLS, encryption for all transmitted data to ensure data security. All data files downloaded from the Qualtrics platform were stored on network-accessed secure servers via Johns Hopkins University and the University of Maryland, School of Nursing, where they were protected by secure firewalls and accessible only via controlled password access.

Response: The final study group of 1,999 respondents included RNs, LPNs, APRNs, and CNAs working in inpatient or outpatient settings or in academia and public health roles throughout the state of Maryland during the COVID-19 pandemic. The survey collected demographic information from the respondents.

Socio-Demographics and Household Characteristics

Gender/ethnicity: Our sample included 1,999 respondents who held a nursing license in Maryland or another Nurse Licensure Compact state.^a The majority were women (90.5%) with a mean age of 47.4 years. Of these, the majority were white (74.6%) followed by Black or African American (8.6%), Asian (4.3%), multiracial (3.3%), or American Indian or Alaskan Native (0.6%); the remaining preferred not to answer (6.9%) (see figure 1). The majority (90.8%) did not self-identify as Hispanic or Latino, 2.7% did identify as Hispanic or Latino, and 6.5% preferred not to identify themselves with regard to Hispanic/Latino decent.

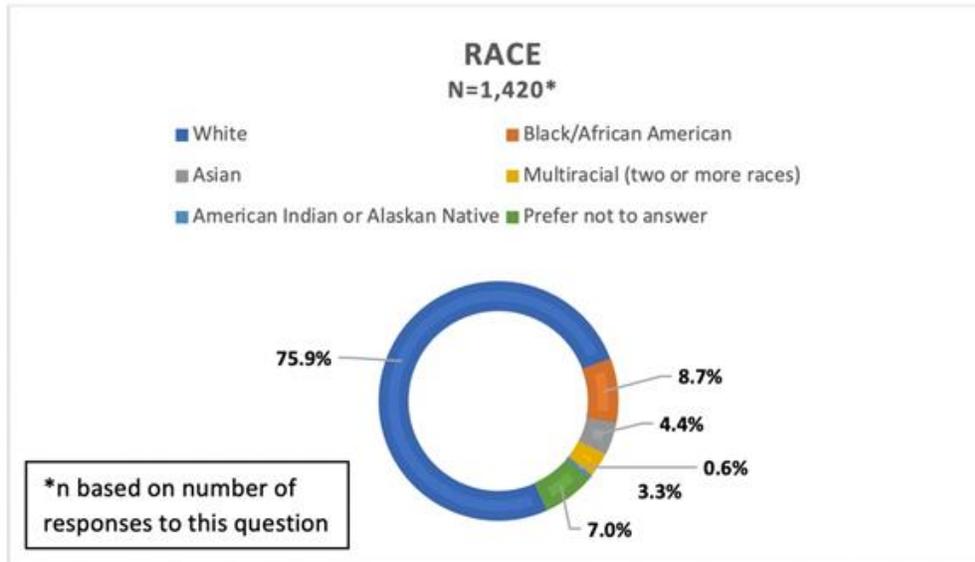


FIGURE 1. SURVEY RESULTS: RACE

Age: The generational distribution of survey respondents is depicted in figure 2. Slightly more than half (56%) of respondents were aged 40 or above.

^a The Nurse Licensure Compact (NLC) allows licensed nurses to practice in other NLC states, without having to obtain additional licenses. States who have adopted NLC status are also referred to as compact states.

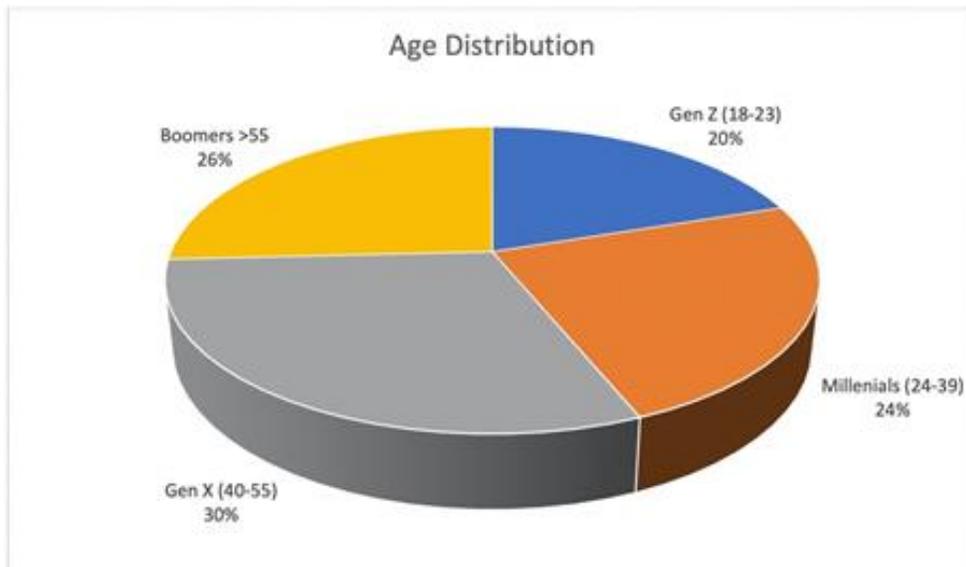


FIGURE 2: SURVEY RESULTS: AGE DISTRIBUTION

Financial security: Overall, 66.8% of respondents were slightly or not at all concerned with their family’s financial situation. A further 20.1% of respondents reported being moderately concerned, and 13.1% reported being very or extremely concerned about their family’s financial situation. See figure 3 for more information.

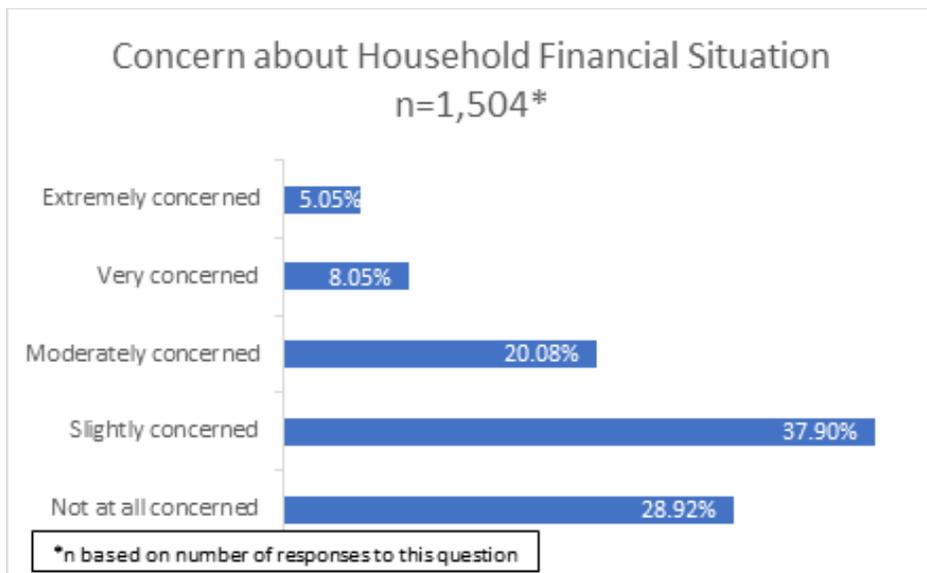


FIGURE 3: HOUSEHOLD FINANCIAL SITUATION

Work characteristics and experience: Respondents were asked about their nursing licensure and certifications, including if they were currently licensed to practice in the state of Maryland, their years working in nursing, their primary place of employment during the COVID-19 pandemic, and if they worked as a travel nurse at any point during the pandemic (see figures 4 through 7). The highest nursing license held by the sample were 7.1% APRN, 90.0% RN, 1.2%

LPN, 1.5% CAN, and 0.2% were pre-license students. The mean time in the nursing field was 20.6 years. At some point during the pandemic, the majority were employed in nursing in Maryland (95.8%), and of these, 97.6% are currently employed in nursing in Maryland.

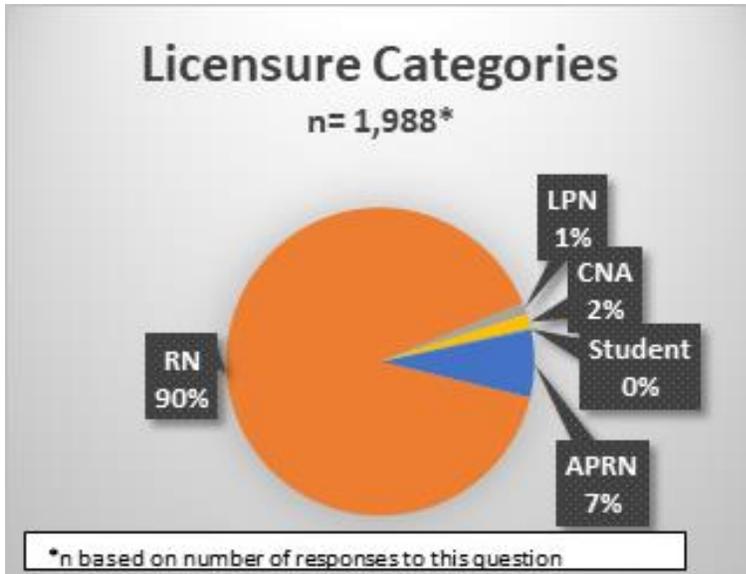


FIGURE 4: LICENSURE CATEGORIES

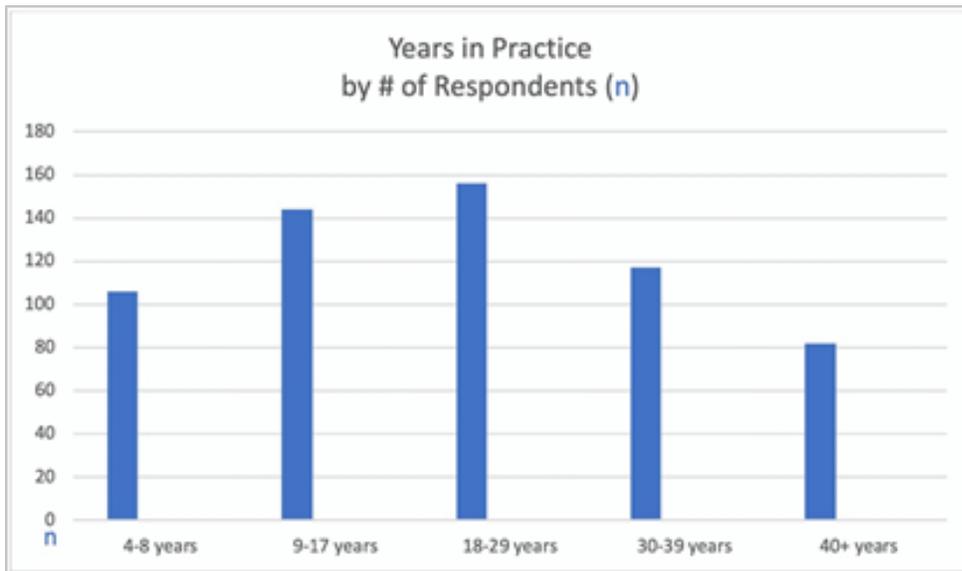


FIGURE 5: YEARS IN PRACTICE

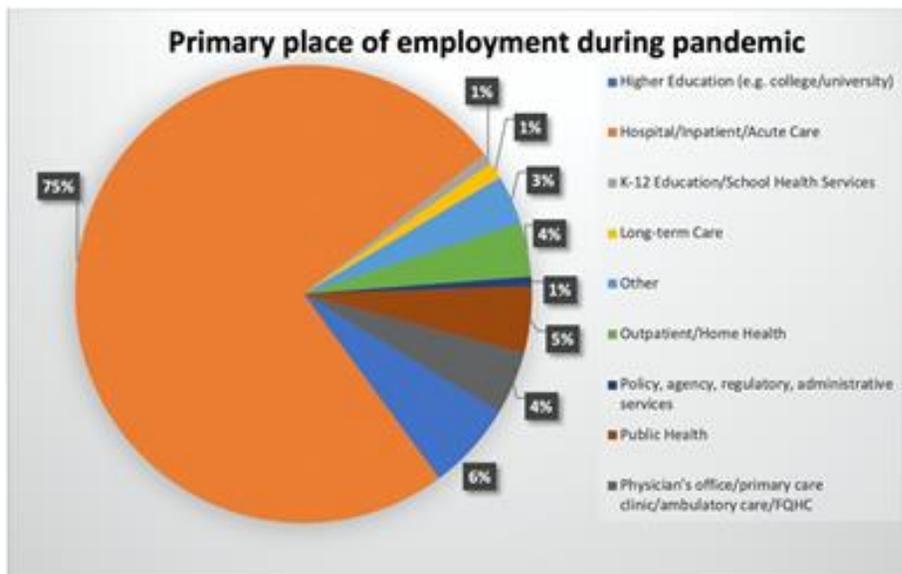


FIGURE 6: PRIMARY PLACE OF EMPLOYMENT

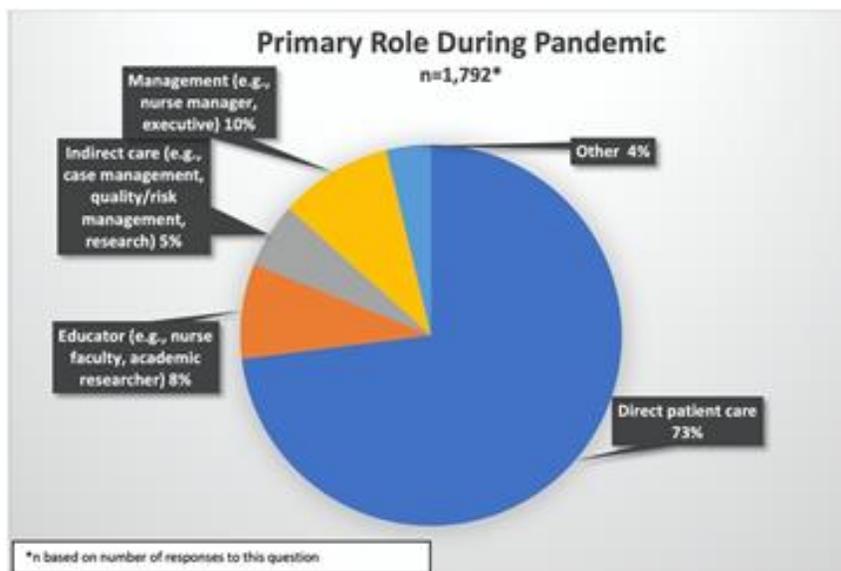


FIGURE 7: PRIMARY ROLE

Findings and Discussion

Impact of COVID-19 on the Maryland Nursing Workforce's Physical, Mental Health, and Distress

Respondents were asked questions related to experiences of work, family, and personal stress related to the COVID-19 pandemic. Their responses are summarized in figures 8 through 12. These questions included rating their level of burnout and indicating any changes in sleep quality

since the beginning of the pandemic. Nurses' current mental distress was assessed through questions on the frequency, over the past week, that they had been bothered by symptoms of anxiety and depression.

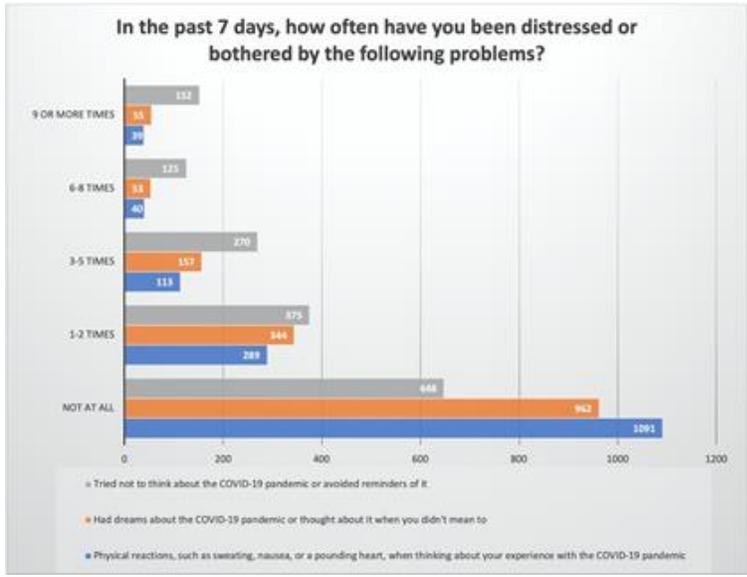


FIGURE 8: DISTRESS, ETC., IN PREVIOUS WEEK

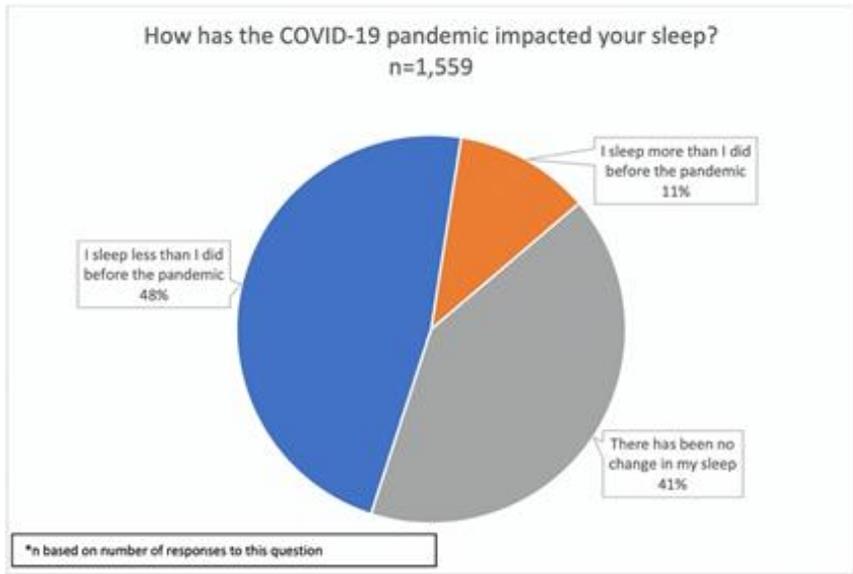


FIGURE 9: PANDEMIC IMPACT ON SLEEP

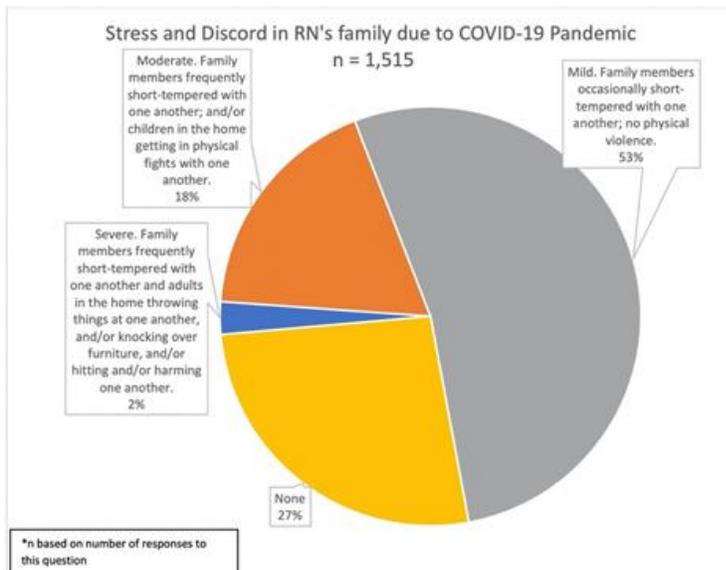


FIGURE 10: STRESS AND DISCORD IN NURSE'S FAMILY

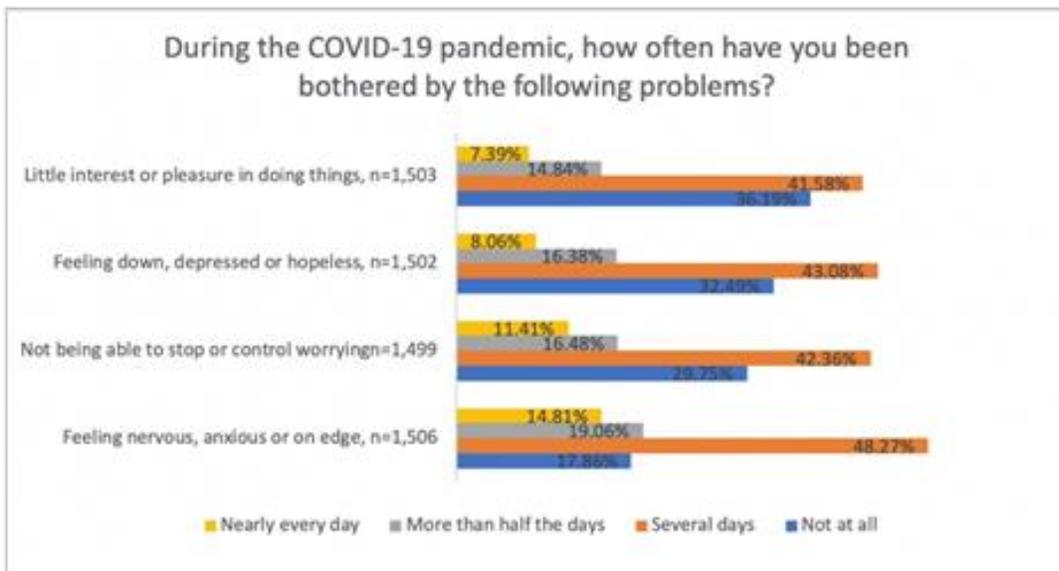


FIGURE 11: FREQUENCY OF PANDEMIC-RELATED ISSUES

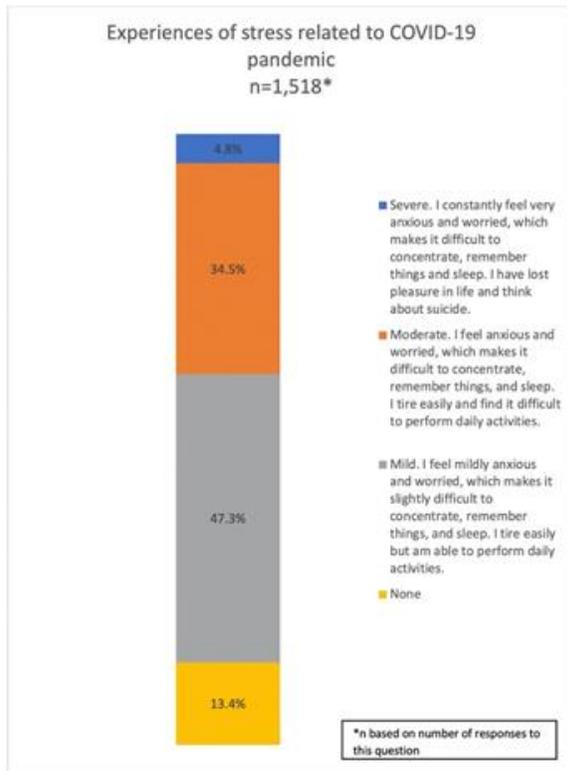


FIGURE 12: PANDEMIC-RELATED STRESS EXPERIENCES

The biggest challenge is the lack of staffing and the insecurity that brings. I want to do my job but don't want to show up for a horrible situation where I am stressed all day and feeling afraid that I am not able to keep my patients safe. (survey respondent)

My biggest challenge is not having enough staff. This is a huge worry for me and often keeps me up at nights. I also worry about burn out of other staff who are willing to endure the long hours and extra days of work. (survey respondent)

Severe short staffing—feels unsafe to work & feel guilt and moral distress about care provided to patients. (survey respondent)

Patient care has significantly worsened in the past few months (long wait times; increase in sentinel events) that is mentally distressing. (survey respondent)

Additional questions addressed changes to prescription medication use for a mental health condition (figure 13), including whether the nurse started taking a new prescription medication, and changes in alcohol consumption since the beginning of the pandemic (figure 14).

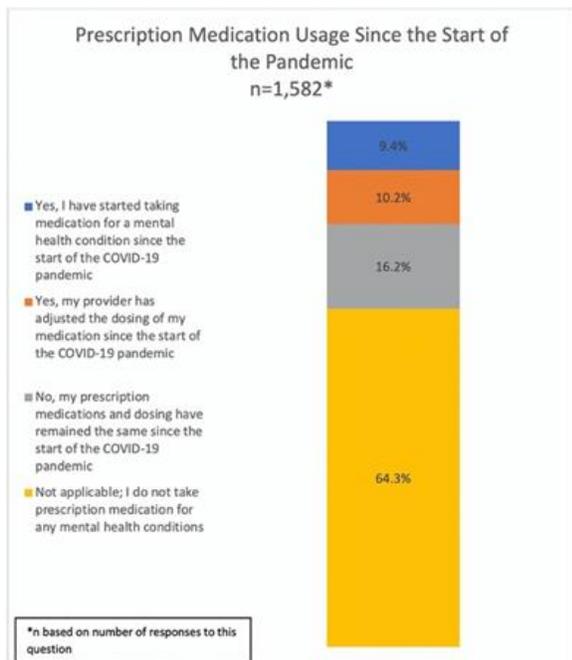


FIGURE 13: PRESCRIPTION MEDICATION USAGE

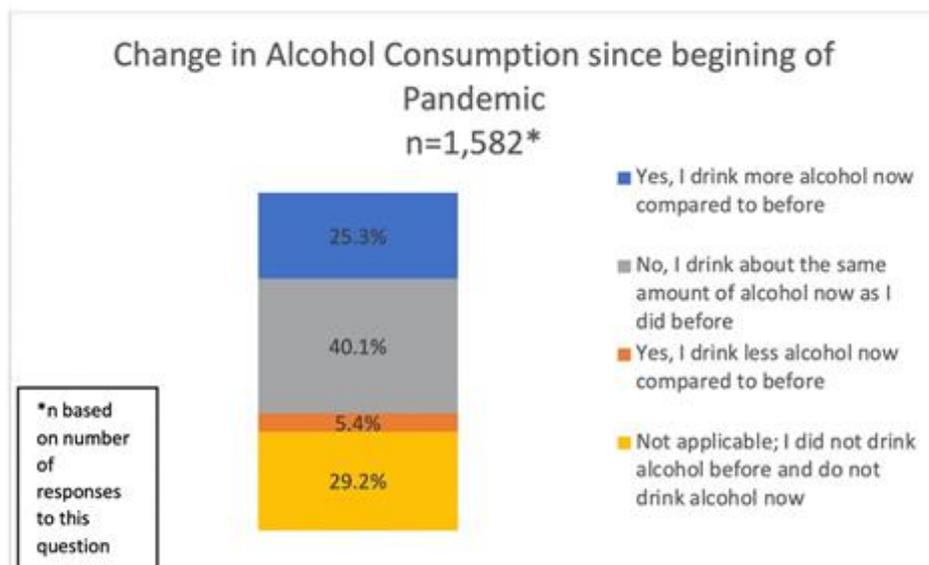


FIGURE 14: CHANGE IN ALCOHOL CONSUMPTION

Cost of Stress and Anxiety

Question 33 of the survey asked nurses to describe their level of anxiety caused by the pandemic and used the exact language used to describe anxiety disorders in the World Health Organization Global Burden of Disease estimates.⁹ This allowed us to calculate the average and total disability adjusted life years (DALYs) suffered by Maryland nurses during the pandemic. The results are summarized in figure 15. A DALY is a measure of disability, where 0 is fully healthy and 1 is

complete lack of function and zero quality of life. Different health conditions cause different levels of disability, with worse conditions having higher numbers.

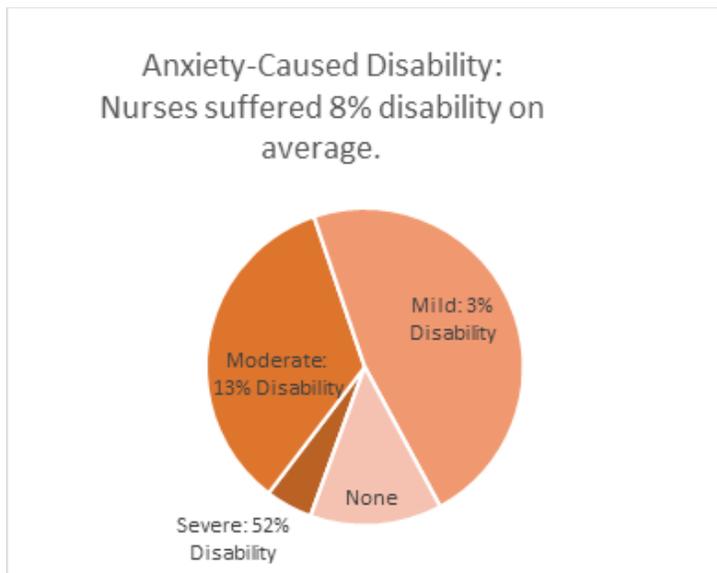


FIGURE 15: ANXIETY-CAUSED DISABILITY

Five percent of the nurses who responded reported severe anxiety, with a DALY adjustment of 0.523; 34% reported moderate anxiety, with an adjustment of 0.133; and 47% reported mild anxiety, with an adjustment of 0.030. When combined with the 13% that reported no anxiety, the average DALYs suffered were 0.085.

To estimate the proportion of this DALY loss due to working as a nurse, we compared our results to the average anxiety-related DALY loss in the population due to the pandemic. In their meta-analysis and summary article, Santomauro et al. report that “the global anxiety disorder additional DALY rate due to the COVID-19 pandemic was 116.1 (79.3–163.8) per 100,000 population” or 0.001 per person.¹⁰ This means that the COVID-19 pandemic caused the nurses in our survey to suffer over 70 times as much anxiety-related harm as a typical member of the population, almost certainly as a result of their working conditions.

The U.S. Department of Health and Human Services values one full quality adjusted life year (QALY) at about \$500,000,¹¹ and losses are valued proportionally. This dollar value of life and health comes from research on compensating differentials, i.e., the increased wages that must be paid to people to induce them to take a more dangerous or unhealthy job. QALY and DALY measurements are interchangeable for this purpose. Therefore, the average nurse during the COVID-19 pandemic suffered a mental-health-related quality-of-life harm valued at about \$42,000 per year.

Key Findings: Physical, Mental Health, and Distress

- 1) The average nurse suffered over 70 times as much COVID-19-related anxiety as the average member of the population.

- 2) This harm is valued at \$42,000 “mental health hazard pay” per year (not counting overtime, physical risks, etc.).

Unless significant steps are taken to reduce nurses’ anxiety by improving their working conditions, they would need additional compensation valued at \$42,000 per year in pandemic situations in order to compensate them for the mental health loss caused by their job in that unhealthy situation and prevent them from leaving for a job that did not cause them this harm.

Influence of COVID-19 on Nursing Role

Respondents were asked a variety of questions related to the impact of the COVID-19 pandemic on their satisfaction and/or dissatisfaction with being a nurse. These items included the number of hours they worked as a nurse during the pandemic compared to hours worked prior to the pandemic (see figure 16) and whether they had been furloughed, laid off, retired, or left the workforce at any point during the pandemic. Respondents were also asked if they had been reassigned within their existing organization to a new unit and/or hospital to render patient care during the pandemic. Respondents also provided the number of times per year they avoided coming to work during the pandemic (figure 17) as well as their perception of their employer’s commitment to safety, training, and access to resources during the pandemic. Finally, respondents were asked about their intent to change jobs or leave the profession entirely and to identify factors that would aid in reducing stress and improving work experience or make them more likely to stay in the workforce.

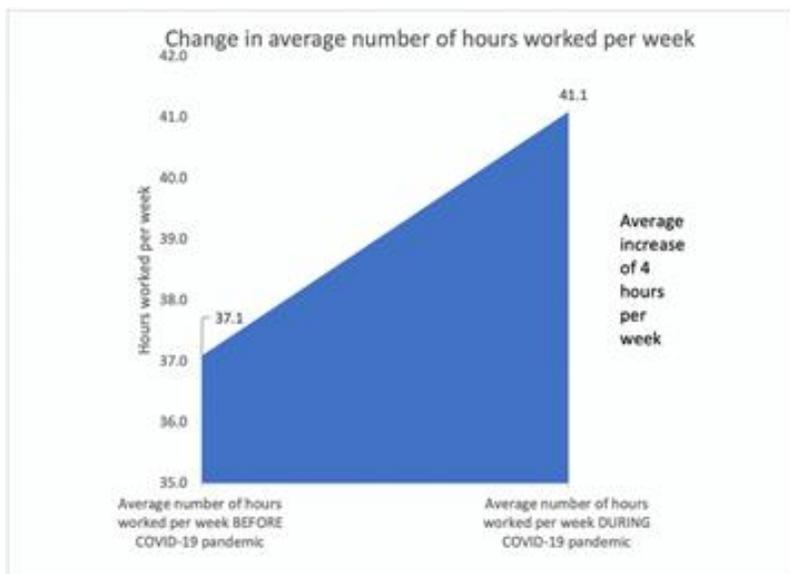


FIGURE 16: CHANGE IN HOURS WORKED PER WEEK

Not being granted leave. I have had off 30 hours total since covid started. I have lost more leave than I have been granted. (survey respondent)

We're tired. Literally exhausted and running on what I wouldn't even consider fumes. (survey respondent)

Thankless, thankless short-staffed work, worse everywhere. Looking to quit every single day. Salaries like everything else in inflation need to increase at least double for the daily work we do. Not enough money is paid to people who have not had a vacation due to staffing crisis since the pandemic. Worthless job. (survey respondent)

Moral Injury: Betrayal and Well-Being

Respondents were asked about experiences of betrayal, which were assessed with three items adapted from the Moral Injury Events Scale.⁶ These items assessed perceived betrayal by fellow health-care workers, institutional leaders, and others outside health care. Two additional items assessed decisions that impacted well-being.

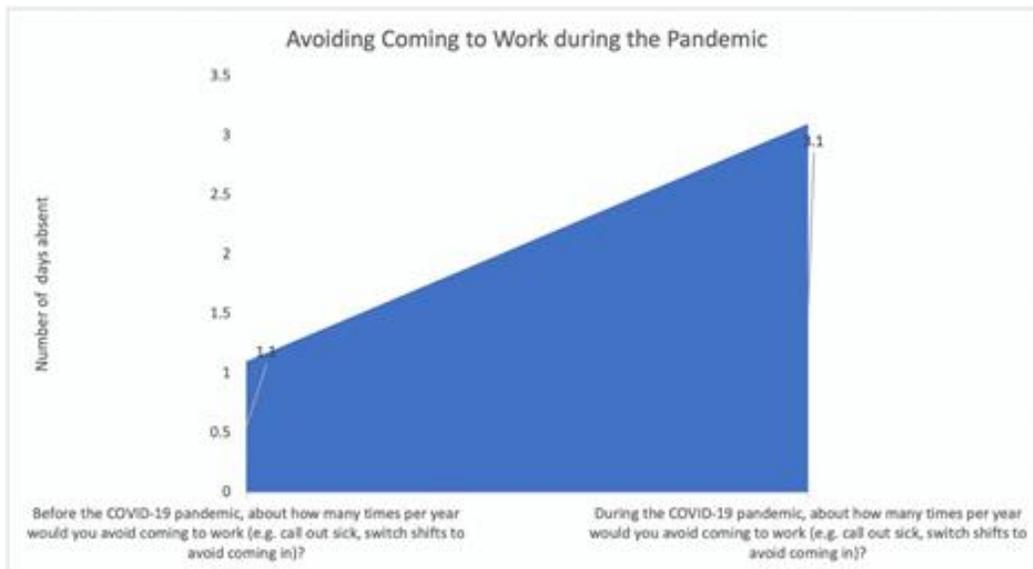


FIGURE 17: WORK AVOIDANCE DURING PANDEMIC

When segmenting the data between those who indicate feelings of betrayal or not, 58.31% reported feeling betrayed by institutional leaders whom they once trusted, and 54.06% reported feeling betrayed by others outside of the health-care profession. In contrast, 26.7% of participants agreed to the statement “I felt betrayed by fellow health-care workers whom I was trusted.” Close to two-thirds (61.75%) of respondents reported that their physical health and safety were compromised without their consent, and 54.46% reported that their health and safety were compromised without care for their well-being.

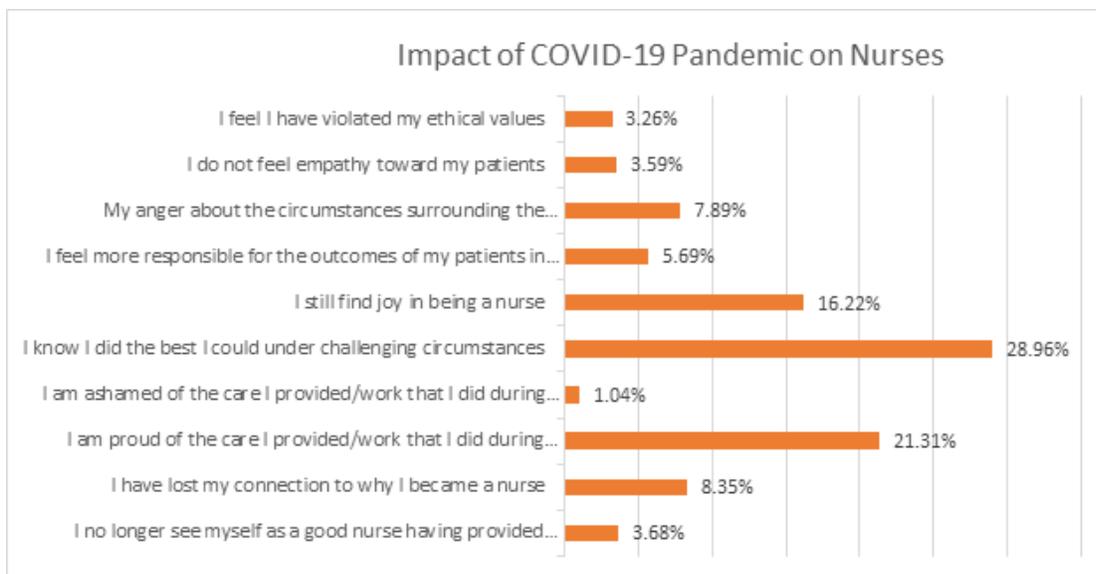


FIGURE 18: IMPACT OF PANDEMIC ON NURSES

Management are profit-centered. They want us to work faster, with resources lacking, to accommodate more patients, and have them earn more. But nothing is given back to employees, for the extra work and extra roles they have to perform. (survey respondent)

Not feeling valued, not supported by management. Loss of trust, betrayed. (survey respondent)

Nurses feel let down by administration-appreciate incentives, but we've never been taken seriously. Throughout the years, we have suffered with corporate ideas of retention, and we just want more pay, better hours, better benefits like childcare, and more hands to help us take care of patients who are getting larger, sicker, meaner. Administration is severely tone deaf to frontline nursing concerns. (survey respondent)

Respondents who feel betrayed by leaders and by others outside of health care were more likely to be younger, have fewer years of experience, work in hospital or inpatient settings, deliver direct patient care, and have violated their ethical values, compared to those who do not feel betrayed. Those who feel betrayed also report drinking more than before the pandemic (28.9%), are more likely to have started new mental health medications, and are experiencing more burnout (78.46%).

Scores on factors that would prevent leaving nursing were significantly higher for those who report feelings of betrayal by their institution; these factors included:

- financial incentives (88.06%)
- staffing (83.48%)
- leadership acknowledgment (57.48%)
- personal protective equipment (PPE) (49.43%)
- legal and policy protections (39.06%)
- increased voice in governance (36.61%)

Of those who reported betrayal by leaders or outside health care, a significantly lower number of respondents (10.94% and 12.97%, respectively) reported that they did not intend to leave nursing compared to 24.96% and 21.25% of those who did not feel betrayed by leaders and by others, respectively.

Nearly 80% of respondents who felt betrayed by leaders reported exhaustion as a factor that influenced their decision to change jobs as compared to those betrayed by others outside health care (66.67%) and of those not feeling betrayed (33.33%). Beyond this, there were significant differences in the influence of unresolved ethical issues, increased disrespect and violence, and lack of administrative support by those nurses who felt betrayal by leaders or coworkers than among those who did not. As for the factors that influenced changing nursing jobs, those who felt betrayed did not appear to make this decision based on family responsibilities, recalibration of life priorities, or moving (i.e., personal factors typically associated with changing jobs) but rather because of factors specifically associated with their workplace.

Of those who reported feeling betrayed by leaders, when combining the top three categories of burnout, 78.46% of respondents reported degrees of burnout: 13.59% are already burned out, 43.43%, are definitely burning out, and 21.44% are experiencing persistent burnout symptoms. In contrast, those experiencing betrayal by others outside health care reported similar, but slightly lower, results. Compared to those who did not experience betrayal, 55.30% reported burnout scores on the same issues. Nurses in this sample who experience betrayal appear to be more anxious, worried, and depressed than those who are not.

Nurses are less likely to feel betrayed by their coworkers, but six out of 10 agree that they felt betrayed by institutional leaders and more than half by others outside of health care. In addition, over 50% reported that their psychological health and safety was compromised without care for their well-being and more than 60% without their consent.

Nurses are perceiving betrayals by those institutional leaders and others outside of health care that they once trusted. Feelings of betrayal are a critical component of moral injury, a psychological response to isolated or sustained situations that transgress core ethical values and commitments. Betrayal is the feeling associated with intentional or unintentional breaches of trust. In this case, the data suggests that these breaches are appraised as being related to another's transgressive behavior and not their own. This perception of breach of trust derives from the lack of agency many nurses experienced during the pandemic, the ability to exert control over systemic issues such as staffing, resource allocation, and decision-making. And once again, these feelings of betrayal are associated with higher percentages of nurses indicating that the factors that influence changing nursing jobs are associated with factors in the workplace, such as lack of

administrative support, staffing, patient safety, and increased disrespect or violence, rather than personal factors, such as family responsibilities, recalibration of life priorities, or moving.

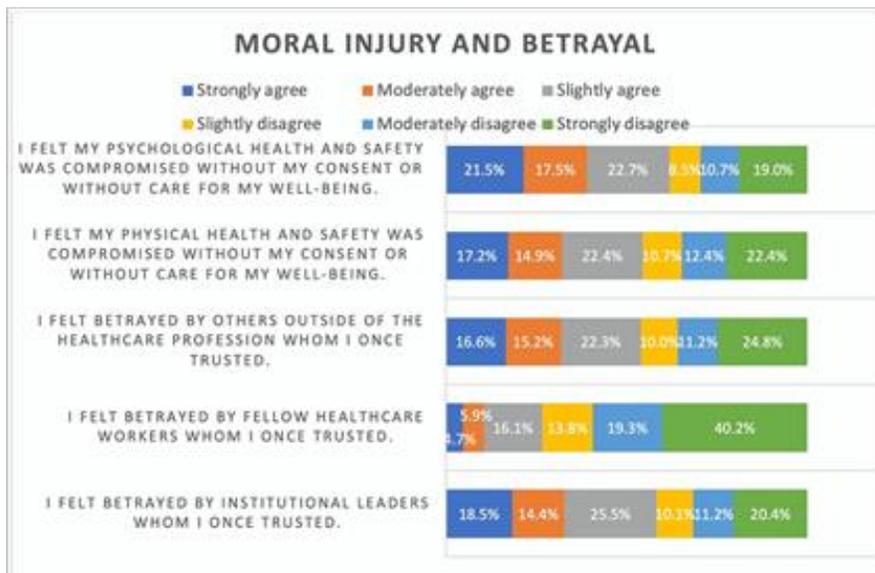


FIGURE 19: MORAL INJURY AND BETRAYAL

Nearly eight out of 10 nurses who felt betrayed by their superiors and others reported experiencing significant burnout. The relationship of burnout and moral injury had been reported previously but not to this extent. This relationship suggests that for those who are not yet burned out but experiencing symptoms (43.43%), there are opportunities for possible intervention to address the underlying contributors to burnout symptoms. The toll this persistent pandemic has taken on trust between nurses and their organizations and externally, and on their physical, psychological and moral well-being, creates an urgent need to understand the leverage points needed to turn the tide of depletion, disengagement, and moral suffering.

Nurses’ responses on the majority of items that relate to what would keep them from leaving nursing are significantly higher for those in the betrayed category. Unsurprisingly, financial incentives, staffing, greater acknowledgment of nursing’s contribution, and legal protections were rated higher by those who felt betrayed by leaders, others outside health care, and coworkers. Of note, those who perceived betrayal by leaders identified additional items related to assurances of supplies such as PPE and increased voice in governance as important items that would keep them from leaving nursing. These key areas offer leaders and others some leverage points to begin restoring trust among our nurses.

Travel Nursing

Our sample included 53 participants who reported being a travel nurse at some point during the COVID-19 pandemic (2.65% of total respondents). Of these, 34.0% are currently full-time travel nurses as their primary employment, 39.6% sometimes work as a traveling nurse, and 26.4% are no longer working as a traveling nurse (see figure 20).

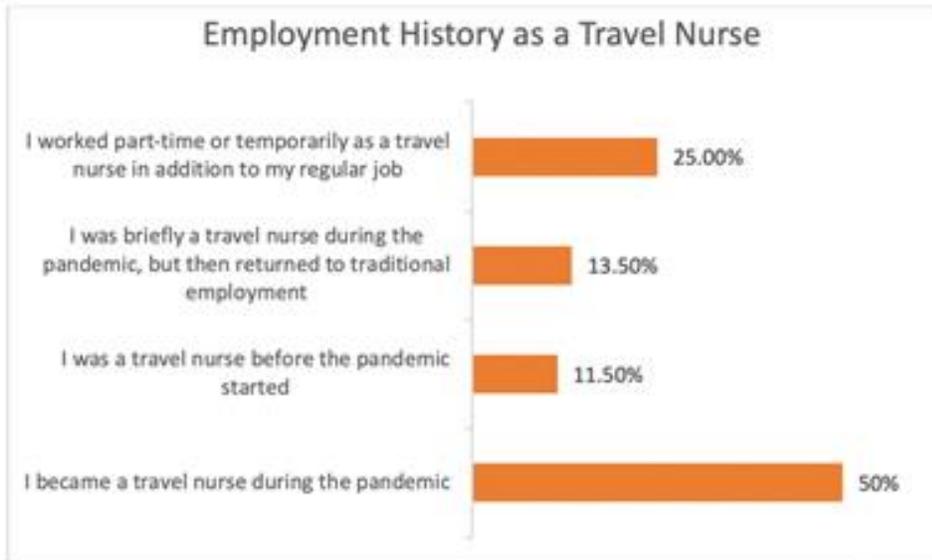


FIGURE 20: EMPLOYMENT HISTORY AS A TRAVEL NURSE

Of those who worked as a travel nurse at any point in the pandemic:

- 50.0% became travel nurses during the pandemic
- 25.0% worked part time or temporarily as a travel nurse in addition to their regular job
- 13.5% worked briefly as a travel nurse during the pandemic but then returned to traditional employment
- 11.5% were travel nurses before the pandemic started

When asked what led them to choose travel nursing, most responded it was due to financial incentives (90.6%), followed by:

- flexibility of scheduling (52.8%)
- dissatisfaction with prior employer(s) or working environment (47.2%)
- empowerment or more control over their career (39.6%)
- ability to travel (30.2%)
- reduction in required documentation (9.4%)
- dissatisfaction with relationship with coworkers (5.7%)

I left to travel nurse to pay for graduate school. (survey respondent)

I am a full-time traveler — being compensated adequately for the work I put in. (survey respondent)

Upon reflection on their time as travel nurses and comparing traditional and travel nursing, respondents felt that pay was much better, work-life was moderately better, their role was more respected, home-life stability was somewhat better, communication with management and job security were about the same, and, finally, camaraderie with coworkers, benefits, and training and career development were a little worse, compared to traditional nursing jobs.

Among travel nurse respondents, 50.9% would transition to traditional nursing positions if the salary and benefits of these positions improved or if pay and hours of travel nursing worsened. Another 34.0% would transition to traditional nursing positions if working conditions of traditional nursing improved, 20.8% would prefer traditional nursing, and 3.8% would not transition to traditional nursing positions, preferring being a travel nurse even if traditional nurses had similar pay and working conditions.

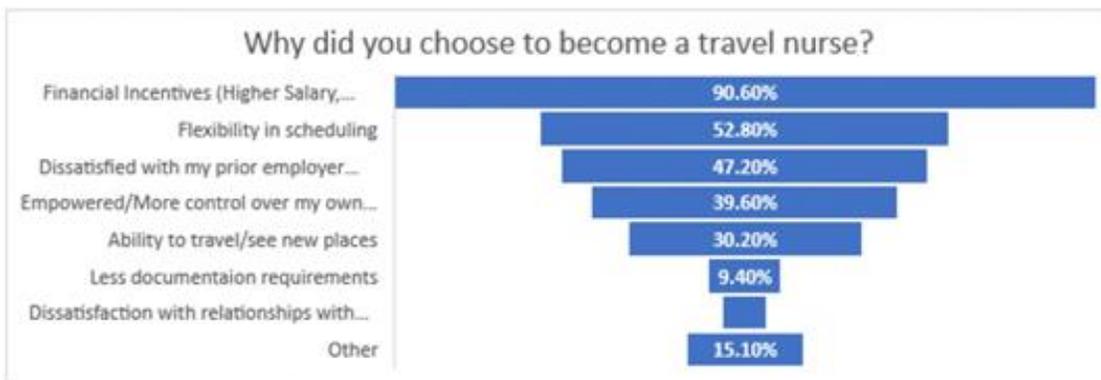


FIGURE 21: REASONS FOR CHOOSING TRAVEL NURSING

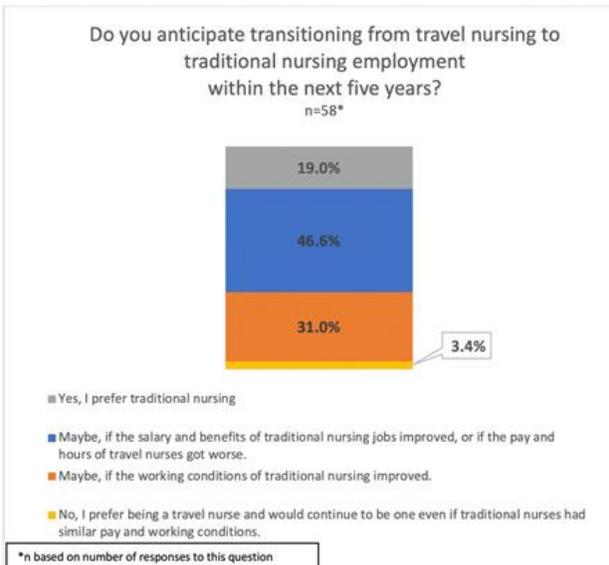


FIGURE 22: TRANSITIONING FROM TRAVEL TO TRADITIONAL NURSING

Comparing Travel Nurses and Traditional Nurses

Figures 23 and 24 depict a comparison of travel nurses with non-travel nurses with respect to their number of years nursing and their self-reported levels of burnout, respectively.

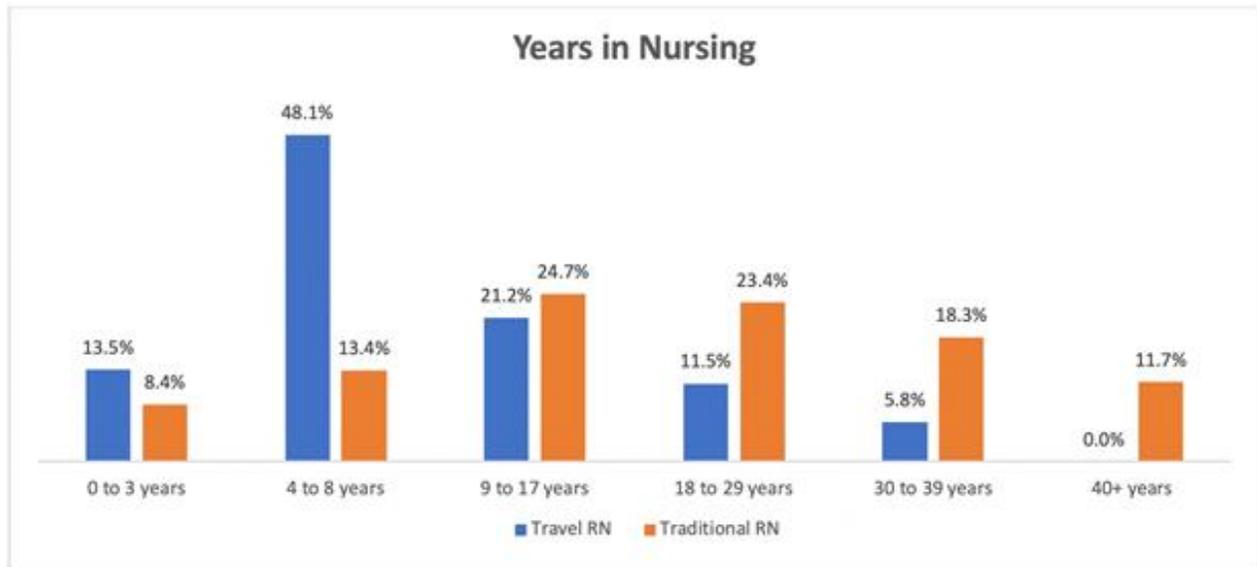


FIGURE 23: TRAVEL VS. TRADITIONAL: YEARS IN NURSING

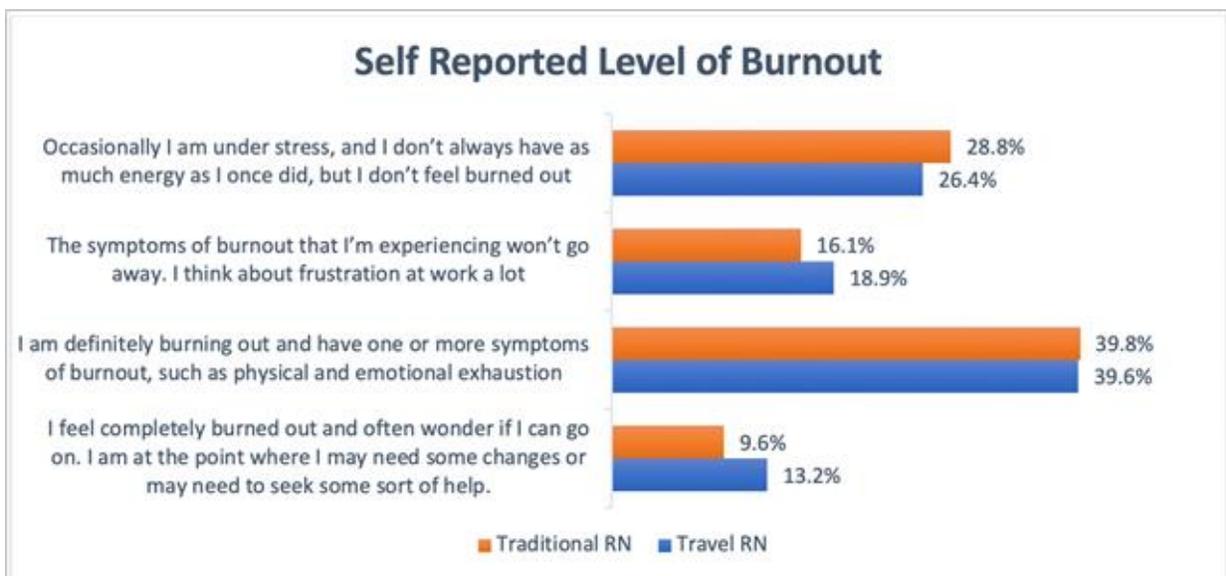


FIGURE 24: TRADITIONAL VS. TRAVEL: BURNOUT

New Graduates in the Workplace

Our sample included 128 respondents who reported being a new nurse/student (0-3 years of experience). Of these respondents, the majority were female (92.74%), with a mean age of 30.76 (SD=8.74). The majority were white (80.17%), followed by Asian (8.26%), multiracial (7.44%)

and Black/African American (4.13) with most identifying as non-Hispanic/Latino (95.83%). See table 1 for more information.

TABLE 1: DEMOGRAPHICS OF EXPERIENCED NURSES VS. NEW GRADUATES

	Experienced nurse		New nurse/student*		P
	N or mean	(%) or (SD)	N or mean	(%) or (SD)	
Age, m (SD)	48.97	41 (12.22)	30.76	(8.74)	<0.0001
Gender, n (%)					0.0782
Female/woman	1235	(93.56)	115	(92.74)	
Male/man	77	(5.83)	6	(4.84)	
Other	8	(0.61)	3	(2.42)	
Race, n (%)					0.0022
Asian	55	(4.36)	10	(8.26)	
Black/African American	123	(9.75)	5	(4.13)	
Multiracial (two or more races)	39	(3.09)	9	(7.44)	
Other	35	(2.78)	0	(0.00)	
White	1009	(80.02)	97	(80.17)	
Hispanic, n (%)					0.3467
Non-Hispanic/Latino	1234	(97.32)	115	(95.83)	
Hispanic or Latino	34	(2.68)	5	(4.17)	
Highest nursing license, n (%)					<.0001
APRN	94	(6.86)	0	(0.00)	
RN	1248	(91.09)	121	(94.53)	
LPN	13	(0.95)	0	(0.00)	
CNA	14	(1.02)	6	(4.69)	
Student	1	(0.07)	1	(0.78)	

When compared to the experienced nurse, new nurses are younger (mean age 48.97 for experienced nurses vs. 30.76 for new nurses, $p < 0.001$), and while both experienced and new nurses were majority white (80.02% vs. 80.17%), there were statistically significant differences in other racial categories: Asian (4.36% vs. 8.26%), Black/African American (9.75% vs. 4.13%), multiracial (3.09% vs. 7.44%), and other (2.78% vs. 0.00%, $p = 0.0022$).

The highest license held by the sample of new nurses included APRN (0.78%), RN (4.69%), and CNA (94.53%). The predominant work setting was inpatient acute care setting (95.31%) while providing direct patient care (98.41%).

Impact on Mental Health of New Graduates

Overall, the burden of the COVID-19 pandemic negatively impacted the mental health and well-being of new nurses. When compared with experienced nurses, new nurses were more likely to report feeling that their ethical values were violated (80.47% vs. 91.60%, $p < .0001$).

New nurses also reported significantly more days of anxiety or nervousness compared to experienced nurses ($p < .0001$), more often reporting daily (13.8% experienced vs. 25.40% new) or multi-day (16.18% vs. 19.84%) feelings of anxiety or nervousness. Conversely, fewer new nurses reported ever having feelings of anxiety or nervousness (18.83% vs. 8.73%) or feeling anxiety or nervousness for more than half the days of the pandemic (43.65% vs. 42.17%, $p < .0001$). Additionally, there was a significant difference in new nurses reporting feelings of uncontrolled worry ($p = .0005$) or little interest or pleasure in doing things ($p < .0001$) ranging from several days to every day.

Likewise, feelings of depression were reportedly felt more often on a daily basis (7.33% experienced nurses vs. 15.87% new nurses), or for several days (15.19% vs. 26.98%), less often more than half the days (43.33% vs. 42.06%), no depression at all (18.83% vs. 8.73%, $p < .0001$). There was a significant difference in the perceived levels of burnout between experienced and new nurses ($p = .0002$). In this sample, a few nurses reported no feelings of burnout. But of those, experienced nurses reported it at a higher frequency (5.77% vs. 0.78%). New nurses reported feelings of persistent burnout more often (15.35% experienced nurses vs. 25.78% new nurses), reporting either one or more symptoms of burnout (39.47% vs. 45.31%), or feeling completely burned out (9.50% vs. 11.72%).

The COVID-19 pandemic also impacted family relationships. For new nurses, when compared to experienced nurses, family stress and discord was reported more frequently ($p = .0098$).

Health-Seeking Behaviors of New Graduates

In seeking treatment, significant differences exist ($p = .0011$) between new and experienced nurses: 69% of new nurses reported no change in medication to treat mental health compared to 81% of experienced nurses. Conversely, more new nurses reported starting a new medication or increasing dosage than did experienced nurses (30.71% vs. 18.64%). Disrupted sleep patterns and sleeping too much or not enough were reported significantly more often by new nurses than by experienced nurses ($p = .0007$).

In thinking about incentives to prevent nurses from leaving in the next two to three years, 95.9% of new nurses listed financial incentives of salary increase, annual bonuses, hazard pay, and increased retirement contributions followed by improving staffing (92.62%). Access to confidential mental health services was cited as an incentive by 29.51% of new nurses.

A selection of comments from experienced nurses about new graduates are below:

- *Staffing, inexperienced staff, increased burden on me to train new nurses and be a leader on my unit with only two years of nursing experience, lack of support from management, not enough pay.*

- *Staffing. Only new hires are new graduates most of whom have never done actual patient care because they finished nursing school during COVID. A nurse joined my unit and her rotation of my specialty was done entirely online with a program and clicking buttons. NOT the same thing as being able to see the actual environment.*

A selection of comments from new graduate nurses are below:

- *Getting the orientation that I need on the floor, but the pandemic causing short staffing interferes with my learning and safety.*
- *Learning the new job. Everyone in this unit is learning a new job at the same time ... none of us know what we are doing. We are doing the best we can.*

Key Findings: New Graduates

- 1) New nurses more often reported disruptions in sleep, family relationships, and the need to seek treatment for mental health.
- 2) While all nurses are reporting burnout, new nurses are experiencing more symptoms of persistent burnout and symptoms that do not go away.

Faculty and Educators

This survey sought to gain insight into the nursing faculty shortage in the context of the COVID-19 pandemic. One hundred nurses with educator roles in hospitals or academic settings (8% and 6.3% of the total participants surveyed, respectively) responded to questions about the effect the pandemic has had on their ability to perform their roles and their intentions to remain in the profession. The respondents were mainly female (96%), racially white (75%), and with a mean age of 54 years. Respondents had been in the nursing profession for an average of 30 years and the majority (84.85%) were RNs.

I'm an educator and I worry for the students we are sending out into the workforce. To my knowledge, we haven't integrated anything new into our curriculum since the onset of the pandemic to (1) prepare them to advocate for themselves under the current conditions or (2) consider some of the decisions presented in your survey such as increased pay versus safe/supportive working environment. It's one thing for an experienced nurse to chase travel money in exchange for poor working environments, but it's very dangerous for novice nurses to do the same thing. (survey respondent)

Respondents reported being happy or very happy (68%) with their decision to work in health care. A small percentage (3.37%) regretted their decisions. Nurses identifying as educators admitted they were stressed but did not identify themselves as burned out (47%). Nurses who did identify with being burned out also reported having symptoms of burnout such as physical and

emotional exhaustion. Respondents reported the top three things that would reduce stress during COVID-19 were respect from administration (82%), clear care standards (55%), and coworkers acting in ethical ways (47.62). The majority of nurse educators did not feel they had violated their ethical values (78%).

Most nurse educator respondents (72%) answered that financial incentives (e.g., increases in salary, bonuses, hazard pay, and increased retirement contributions) would keep them from leaving the nursing profession within the next two to three years. Acknowledgment by their organizations' leadership of the contributions made by nurses to health care (51%) was also a factor. To a lesser degree, staffing (37%), the ability to take advantage of health and wellness resources during the workday (28%), and the assurance of personal protection and safety (27%) were other common responses. Most respondents remained in their positions (87%). Those who chose to leave were mainly influenced by a lack of administrative support (31%) and personal priorities (31%). Many respondents thought of retiring (41%), changing employers (32%), or leaving the nursing profession (24%) because of the pandemic. Also, because of the pandemic, others have made career changes in nursing for higher pay and better working conditions (23%) or transitioned to another unit (22%). Smaller percentages left nursing temporarily (6%), made career changes outside of the profession for better working conditions (4%), or have left nursing indefinitely (2%) because of the pandemic.

Educator nurses were asked a number of questions about situations that made them consider changing jobs or leaving the nursing profession. The majority of respondents were not influenced at all or a little by the situations. Of all the situations presented, respondents were moderately influenced by personal safety (28%), access to PPE (23%), and the safety of family and friends (31%).

Keeping Maryland Nurses in the Workforce

Respondents provided multiple answers for what would keep them in the nursing field in the next two to three years, however the most frequently cited reason was financial incentives (83.3%).

The pay for travelers of \$4500-\$6500 PER WEEK for well over a year while they just gave us a measly 2% raise I am angry and feel used and not valued not just monetarily, but as a trusted and loyal nurse, and even a person. (survey respondent)

Current staff leave to receive higher pay traveling. There are no incentives for retaining current staff. Management treats a 1-2-year nurse the same as a 10+ year nurse. Experienced nurses are worth much more and provide better, safer patient care. It is unsafe to run a unit with so many inexperienced staff. (survey respondent)

Salary increases, annual bonuses, hazard pay, and/or increased retirement contributions were the leading responses. Next cited was improved staffing (74.1%), including improved nurse-to-patient ratios, the ability for self-scheduling, and flexibility in required shift work. Respondents cited acknowledgment by leadership of nursing’s contribution to health care (49.9%), assurances of personal protection and safety during large-scale emergencies (43.4%), having time within the work day to use health and wellness resources (37.3%), legal and policy protections during crisis situations (31.9%), increased governance (29.1%), caregiver support for children and the elderly and other family support (24.2%), and reliable and confidential on-site access to mental health services (20.6%).

The reasons respondents cited for staying in the nursing workforce within the next two to three years are detailed in figures 25 and 26 and in table 2.

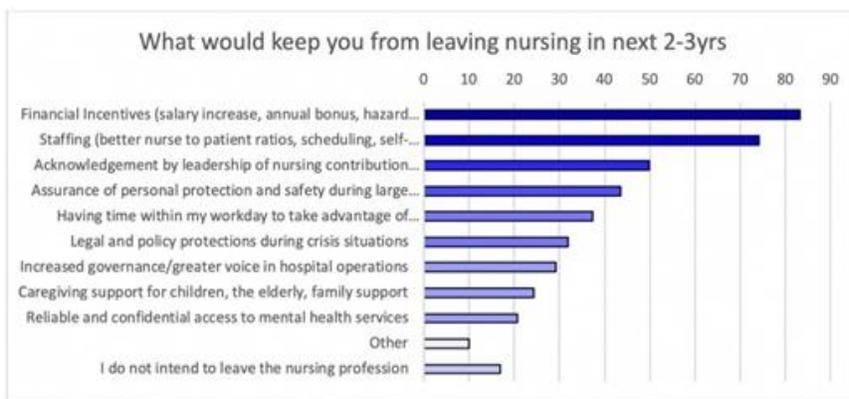


FIGURE 25: FACTORS KEEPING NURSES IN THE PROFESSION

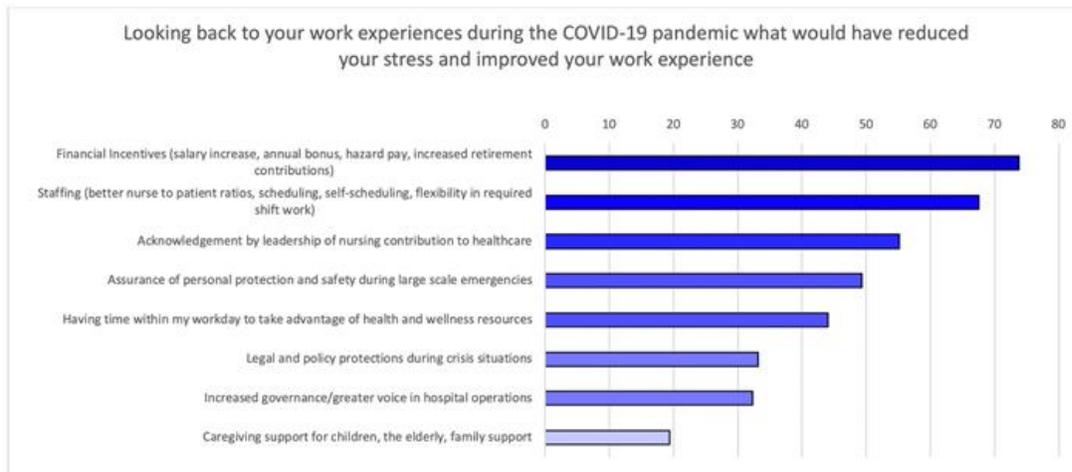


FIGURE 26: FACTORS REDUCING STRESS AND IMPROVING WORK

TABLE 2: FACTORS LEADING NURSES TO CONSIDER LEAVING NURSING

In your primary nursing role during the COVID-19 pandemic, how much did each of the following make you think about changing jobs or leaving the profession?

Question	Not at all	A little	Moderately	Extremely (I was close to leaving because of this)	I actually did leave or change jobs because of this	Not applicable in my role
Personal safety (e.g., contracting COVID-19)	24.6%	22.7%	30.2%	17.6%	3.4%	1.5%
Accessing PPE	27.4%	21.9%	29.6%	17.1%	1.9%	2.2%
Safety of friends and family	18.3%	23.7%	34.4%	20.4%	2.0%	1.2%
Staffing	12.9%	15.2%	27.3%	34.3%	7.6%	2.7%
Experiencing negative consequences at work (e.g., being fired, demoted, furloughed, etc.) if you voiced safety concerns	49.4%	16.4%	14.3%	12.4%	2.7%	4.9%
Inequities in compensation with other nurses	20.2%	13.7%	23.2%	33.6%	6.2%	3.1%
Insufficient training to safely care for patients	41.0%	22.9%	21.2%	11.2%	2.8%	5.0%
Repeated requests to work extra shifts when I was scheduled to be off	38.5%	19.2%	18.2%	13.6%	3.1%	7.4%
Inequitable distribution of COVID-19 risk exposure among members of the health-care team	38.9%	20.9%	17.4%	14.1%	2.7%	6.1%
Losing my ability to advocate for my individual patient because of	36.5%	21.8%	20.6%	12.1%	2.3%	6.8%

resource constraints						
Lack of clarity on crisis-of-care standards	31.6%	22.3%	24.2%	14.1%	2.8%	5.1%
Legal protections when resources were scarce	35.7%	21.9%	21.4%	13.5%	2.0%	5.6%
Access to mental health and wellness resources	45.6%	24.0%	16.9%	8.5%	1.6%	3.6%
Disrespect or violence by patients or families	36.3%	19.9%	18.2%	17.5%	3.0%	5.1%
Other	36.4%	3.0%	5.5%	21.1%	6.3%	27.6%

Current staff leave to receive higher pay traveling. There are no incentives for retaining current staff. Management treats a 1–2-year nurse the same as a 10+-year nurse. Experienced nurses are worth much more and provide better, safer patient care. It is unsafe to run a unit with so many inexperienced staff. (survey respondent)

The lack of respect and lack of pay. I could withstand a lot of stress if my time was compensated more and according to the skills I possess I am treated as unskilled labor, not a professional with a college degree and a skill set not everyone has. (survey respondent)

Recommendations

As our survey shows, many things will need to change to address nurses’ needs and ensure that enough nurses are willing to continue working in the future to maintain a high level of quality care. As our findings demonstrate, value-based compensation is at the top of the list. An industry pay structure is needed that gives hospitals a strong incentive to invest in surge capacity, i.e., a reserve force of nurses to call on in an emergency. If hospitals have such a strong incentive to hire more nurses, and make contingency plans to do so, then the next pandemic should have fewer issues with staffing and burnout.

We recommend the following policies to ensure that nurses are properly compensated for the work they are being asked to do, both in routine situations and in emergencies, and to ensure that hospitals no longer have a financial incentive to overwork nurses in any situation:

- 1) Guaranteed minimum nurse-to-patient staffing standards with nurses being paid extra if those standards are not met. An example would be doubling extra pay during periods of extra workload.
- 2) Established standards for the number of technicians, PCTs, and CNAs per patient, with nurses being paid extra if those standards aren't met. For example, doubling the salary of the personnel not present as the extra pay, with the resulting bonus divided equally among all shift nurses.
- 3) Hazard pay in the event of pandemics or other states of emergency.
- 4) Graduated overtime: For example: 1.5x hourly pay for working 40-50 hours a week, double overtime for 50-60 hours, triple for 60-70 hours, and quadruple for 80+ hours.
- 5) Rewarding nurses when hospitals achieve certain patient-safety benchmarks (e.g., for CLABSI rates, etc.).
- 6) Ending the idea that “a nurse is a nurse” and adopting a system of qualifications or certifications for skills or specializations, with extra pay for nurses who have those qualifications or do those duties, such as:
 - when a nurse is a student preceptor
 - when a nurse is designated as the shift charge nurse
 - when a nurse has additional technical skills (i.e., electrical, mechanical, mathematical, etc.) that are valuable in a hospital setting beyond those necessary for base RN certification

Conclusion

The COVID-19 pandemic has directly affected the physical, mental, and emotional well-being of Maryland's nursing workforce. Nurses are anxious, physically exhausted, and mentally burned out. Many report such severe stress that they are unable to sleep or to control their worrying. They have experienced a sense of betrayal by institutional leaders they once trusted to create and sustain a safe, supportive environment in which they could render care. As a result, nurses are revisiting their decisions regarding choice of workplace setting and, in some cases, their decision to remain in the nursing workforce. Our study suggests that up to two-thirds of the Maryland nursing workforce will leave their current job and some will leave the profession altogether. It is entirely within the realm of possibility that the state of Maryland will not have enough nurses in the next 5 years to staff our hospitals, clinics, long-term care facilities, and other health-care settings. This would result in the gradual degradation of health-care services and impose severe limitations on access to clinical services for many people.

The good news is that it's not too late to improve working conditions within the state and to implement meaningful payment reform policies in order to increase nurses' willingness to remain in the Maryland nursing workforce. The Maryland state legislature should develop and implement policies to mandate that hospitals and health-care organizations implement meaningful and sustained payment reform for nurses. This means instituting financial incentives such as significant and permanent salary increases, annual bonuses, hazard pay, and increased retirement contributions that would encourage nurses to remain in the workforce. Improved financing, above all, will help to stabilize the workforce. Additionally, the MHEC should consider refocusing its programmatic funding toward directly funding the salaries of nurse

educators and nursing students, with a focus on preparing associate-degree and baccalaureate-prepared nurses who will work at the bedside.

Hospitals and health-care organizations that take rapid action to improve staffing conditions, including instituting sensible and realistic nurse-to-patient standards, facilitating self-scheduling, and implementing flexibility in required shift work, will improve recruitment and retention in their institutions. Hospitals and other health-care organizations need to make nurse safety a visible priority, providing assurances of access to appropriate and adequate PPE when needed, supporting work environments that promote safety and well-being, and providing nurses with physical security against workplace violence. These organizations need to build time into the nurse's weekly schedule, within the workday, to access health and wellness resources. Finally, and long overdue, hospital leadership needs to publicly acknowledge nursing's contributions to revenue generation, quality of care and patient safety, and improvements in health-care outcomes. The health and well-being of all Marylanders depends on it.

References

- 1) Bureau of Labor Statistics. Table 8. occupations with the largest projected number of job openings due to growth and replacement needs, 2012 and projected 2022. bls.gov. Published December 19, 2013. Accessed March 5, 2022. <https://www.bls.gov/news.release/ecopro.t08.htm>.
- 2) Veenema TG, Closser S, Thrul J, et al. *Mental health and social support for health care and hospital workers during the COVID-19 pandemic*. The Johns Hopkins Center for Health Security; 2021. https://www.centerforhealthsecurity.org/our-work/pubs_archive/pubs-pdfs/2021/20210923-C19-mental-health.pdf.
- 3) Kroenke K, Spitzer RL, Williams JBW, Löwe B. An ultra-brief screening scale for anxiety and depression: the PHQ-4. *Psychosomatics*. 2009;50(6):613-621.
- 4) Stoddard J and Kaufman J. *Coronavirus impact scale*. National Institutes of Health. Accessed September 6, 2021. https://www.nlm.nih.gov/dr2/Coronavirus_Impact_Scale.pdf
- 5) Dolan ED, Mohr D, Lempa M, et al. Using a single item to measure burnout in primary care staff: a psychometric evaluation. *J Gen Intern Med*. 2015;30(5):582-587.
- 6) Nash WP, Marino Carper TL, Mills MA, Au T, Goldsmith A, Litz BT. Psychometric evaluation of the Moral Injury Events Scale. *Mil Med*. 2013;178(6):646-652.
- 7) Nguyen J, Mullins A, Sturdivant J, et al. *Washington Center for Nursing: COVID-19 impact on the nursing workforce study*. Washington Center for Nursing; 2021. <https://www.wcnursing.org/wp-content/uploads/documents/reports/2021-June-WCN-SIA-COVID-19-Impact-on-the-Nursing-Workforce-Study.pdf>.
- 8) Qualtrics homepage. <https://www.qualtrics.com>. Accessed March 5, 2022.
- 9) World Health Organization. *WHO methods and data sources for global burden of disease estimates 2000-2019*. Global Health Estimates Technical Paper WHO/DDI/DNA/GHE/2020.3; 2020. https://cdn.who.int/media/docs/default-source/gho-documents/global-health-estimates/ghe2019_daly-methods.pdf.
- 10) Santomauro DF, Mantilla Herrera AM, Shadid J, Zheng P, et al. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *The Lancet*. 2021;398(10312), 1700–1712. [https://doi.org/10.1016/s0140-6736\(21\)02143-7](https://doi.org/10.1016/s0140-6736(21)02143-7).
- 11) Robinson LA, Hammitt JK, Baxter JR. *Guidelines for regulatory impact analysis*. U.S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation; 2016. https://aspe.hhs.gov/sites/default/files/migrated_legacy_files/171981/HHS_RIAGuidance.pdf.