ASPE ASSISTANT SECRETARY FOR PLANNING AND EVALUATION

OFFICE OF BEHAVIORAL HEALTH, DISABILITY, AND AGING POLICY

ISSUE BRIEF

September 12, 2022

COVID-19 Pandemic Increased Nursing Homes' Reliance on Contract Staff to Address Staffing Shortages in 2020

KEY POINTS

- Nursing homes used 24% more contract staff in 2020 than in 2019.
- Stakeholders confirmed that nursing homes relied more on contract staff due to the COVID-19 pandemic increasing staff turnover.
- The increased use of contract staff during the first year of the pandemic (2020) varied by the characteristics of the facility and its resident population:
  - Nonprofit chains increased their use of contract staff more than for-profit chains, for-profit nonchains, and nonprofit nonchains.
  - 1-star (lowest quality) nursing homes employed the highest levels of contract nurse staffing prior to the start of the pandemic and increased their contract nurse staffing levels the most during the pandemic.
  - Before the pandemic, nursing homes with fewer racial-ethnic minority residents used the most contract staff and increased their use of contract nurses the least in 2020.
- Competition for nursing staff from other health care settings and nonhealth care industries (e.g., retail, service) grew throughout 2020, increasing the need for contract staffing, raising the cost of contract staff, and threatening the stability of the long-term care nursing workforce.

BACKGROUND

Nursing homes require adequate staffing, including registered nurses (RNs), licensed practical nurses (LPNs) and certified nursing assistant (CNAs), to provide quality care to their residents; staffing is an important predictor of nursing home quality.[1] Despite the importance of staffing, nursing homes have historically struggled to maintain adequate staffing, especially of CNAs, which is often attributed to low wages, limited opportunities for advancement, and difficult working conditions.[2]

The COVID-19 pandemic has substantially exacerbated staffing shortages as already difficult working conditions have become more challenging, requiring staff to shoulder many new caregiving and infection control responsibilities and face hazardous working conditions often without the needed personal protective equipment.[3,4] Both nursing and CNA staffing shortages have increased as competition across other health care settings brings higher wages, signing bonusses and benefits. This has resulted in more CNAs leaving their positions and opting for better-paying jobs in other industries.[5] Competition for nurses is growing as other opportunities offer more lucrative pay.[6]

This issue brief, one of three produced under this mixed methods research study* examining the impact of COVID-19 on nursing home staffing, focuses on nursing home use of contract staffing. Quantitative data

* The other two issue briefs are: *Nursing Home Nurse Staff Hours Declined Notably During the COVID-19 Pandemic in 2020, with CNAs Experiencing the Largest Decreases*[7] and *Nursing Home Staffing Disparities were Exacerbated during the COVID-19 Pandemic in 2020.*[8]

analysis revealed an increase in the use of contract staff in nursing homes and important differences between different types of nursing homes. Interviews with nursing home industry experts, providers, and academic experts detail and explain reasons for these changes.

DATA AND METHODS

This issue brief integrates descriptive and multivariate data analyses with interviews to describe the use of contract nurse staffing during the COVID-19 pandemic. Contract staff are defined as any staff that are not employees of a nursing home and are "engaged by the facility under contract or through an agency."[9] We used data from the Payroll-Based Journal (PBJ) for the resident census and staffing, and linked those data with other publicly available data sources with information on nursing home characteristics and other key information, as described in ***Appendix A***. We measured contract nurse staffing in hours per resident day (HPRD), and this measure included contracted RNs, LPNs, and CNAs combined. We calculated the contract nurse HPRD for each month in 2019 and 2020 for each facility, and we present those averaged across facilities for each month and by various nursing home characteristics.

We then estimated regression models to predict the monthly change (based on comparing a given month in 2020 to the corresponding month in 2019) in contract nurse HPRD per facility, with key nursing home characteristics used as predictor variables. These characteristics included the profit and chain affiliation status, star rating in 2019 from the Centers for Medicare & Medicaid Services' (CMS's) 5-star quality rating system, and the percentage of racial-ethnic minority residents in 2018 (quartiles). We also controlled for other factors including other nursing home characteristics. We present the full model specifications and results in ***Appendix A***.

We interviewed three experts from academia, three from industry associations and three nursing home providers about the effects of COVID-19 on nursing home staffing. We presented high-level quantitative findings to all stakeholders and asked for their added interpretation and insights as well as their opinions about policies that address staffing shortages. For this brief, we analyzed their comments on facilities' use of contract staffing and other staffing strategies.

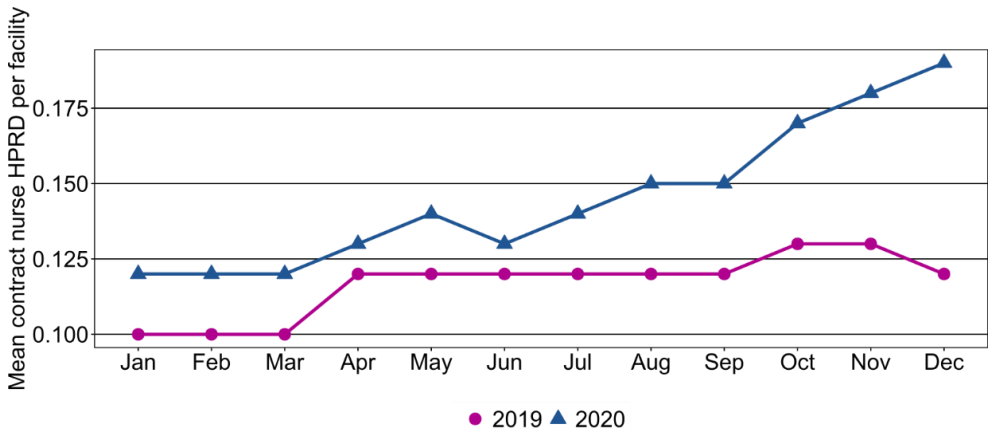
FINDINGS

Contract Nurse Staffing Levels Increased in 2020

Contract nurse staffing HPRD, which includes contracted RNs, LPNs, and CNAs, averaged 24% higher in 2020 than in 2019 across the months. Contract nurse staffing levels were higher in 2020 in all months than in 2019, and especially increased in October through December of 2020 (***Exhibit 1***). For example, the facility-level average contract nurse HPRD in May increased from 0.12 in 2019 to 0.14 in 2020 (17% increase), and in December it increased from 0.12 in 2019 to 0.19 in 2020 (58% increase).

The stakeholders we interviewed were familiar with the dramatic increase in the use of contract staff reported in 2020. Industry and provider representatives reported their own experiences hiring more contract staff. One large chain executive stated they increased their annual staffing budget for contract staff from 12% to 25%. Most interviewees shared that contract staffing agencies have become their competition and have recruited staff away from nursing homes in 2020 by offering higher wages and signing bonuses.

Exhibit 1. Contract Nurse HPRD by Month, 2019-2020



Notes: The number of facilities included varies by month. We included fewer facilities in quarter 1 because CMS waived the requirement to submit PBJ data in quarter 1, 2020 (see ***Appendix A***).

Most providers also described challenges with finding available contract staff. This is primarily because of the higher wages contract staffing agencies have reportedly started to charge facilities as the pandemic has progressed. Nonprofit providers interviewed stated it was impossible to use strike or contract staffing teams to fill staffing gaps because of the associated costs. One nonprofit provider also added that given the time commitment required (e.g., a 2-month to 3-month contract), it was a challenge to using strike teams or travel nursing staff; another nonprofit provider added that there was a lack of housing supply in both rural and metropolitan communities to house traveling staff. A for-profit provider indicated they were just starting to use more strike teams (composed of contracted travel nurses) to help fill gaps in staffing.

One stakeholder commented about the growing competition over nursing staff with agencies
"they are sort of poaching them and then selling them back to these organizations."

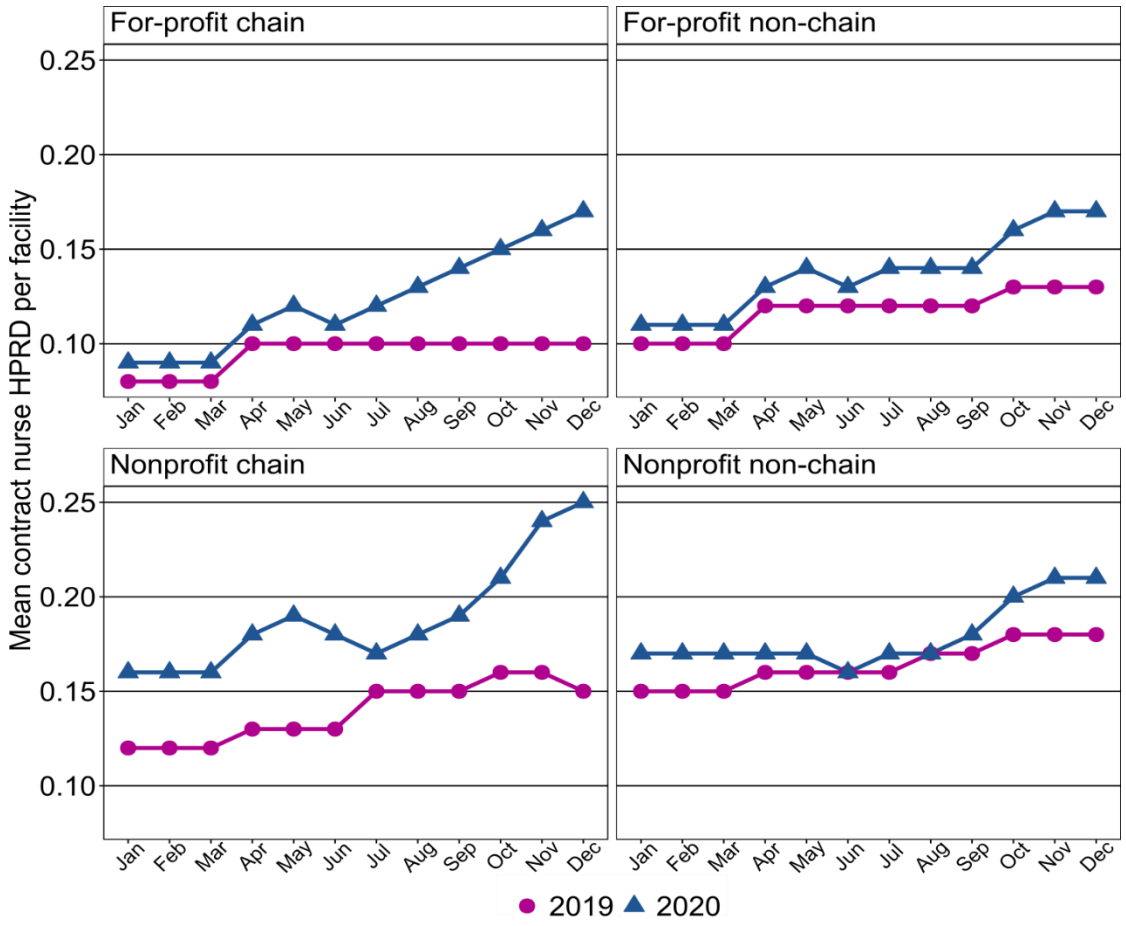
Nonprofit nursing homes affiliated with a chain increased their contract nurse staff the most in 2020.

In 2019, nonprofit nursing homes not affiliated with a chain had the highest contract nurse HPRD, whereas for-profit nursing homes affiliated with a chain had the lowest contract nurse HPRD. Nonprofit chain nursing homes had higher contract staffing levels than for-profit nonchain nursing homes. In 2020, all types of nursing homes increased their contract nurse staffing levels, but nonprofit chains increased their contract nurse staffing levels by the greatest magnitude in all months and especially in December (***Exhibit 2***). Across all the months of 2020, nonprofit chains increased their use of contract staff by 35% on average, which was greater than the increase in for-profit chains (29% average increase), for-profit nonchains (16% average increase), and nonprofit nonchains (9% average increase). For December, nonprofit chains increased their contract nursing staff HPRD from 0.15 in 2019 to 0.25 in 2020 (a 67% increase), which was larger in magnitude than the increase for any other type of nursing home, although there was a larger percentage increase in the use of contract staff in for-profit chains (from 0.10 to 0.17, or 70%). After controlling for various other nursing home characteristics, contract nurse HPRD in nonprofit nursing homes affiliated with a chain increased by 0.05 hours ($p < 0.01$) or about 3 minutes per resident per day more than contract nurse HPRD in for-profit chain nursing homes (see ***Appendix A*** for multivariate results).

Some stakeholders thought that nonprofit nursing homes increased their use of contract staff more than for-profits (which we found to be true in the case of chains, and we also found higher absolute levels of contract

staffing in nonprofits among both chains and nonchains) because these facilities "highly value keeping their staff levels up" and also because they have a higher percentage of private-pay residents and thus have more resources to pay contract staff wages. Consistent with this assertion, we note that there are in fact studies which show that nursing homes with a higher proportion of Medicaid-funded residents are more likely to be for-profits.[10,11] An industry expert added that sharing staff across levels of care was a common practice among nonprofit nursing homes who were part of a chain or continuing care retirement community; this practice may have enabled those facilities to use fewer contract staff. A for-profit provider confirmed that they were able to use staff across levels of care to minimize staffing shortages.

Exhibit 2. Contract Nurse HPRD by Month and by Profit and Chain Status, 2019-2020



Notes: The number of nursing homes included varies by month. We included fewer facilities in quarter 1 because CMS waived the requirement to submit PBJ data in quarter 1, 2020 (see ***Appendix A***).

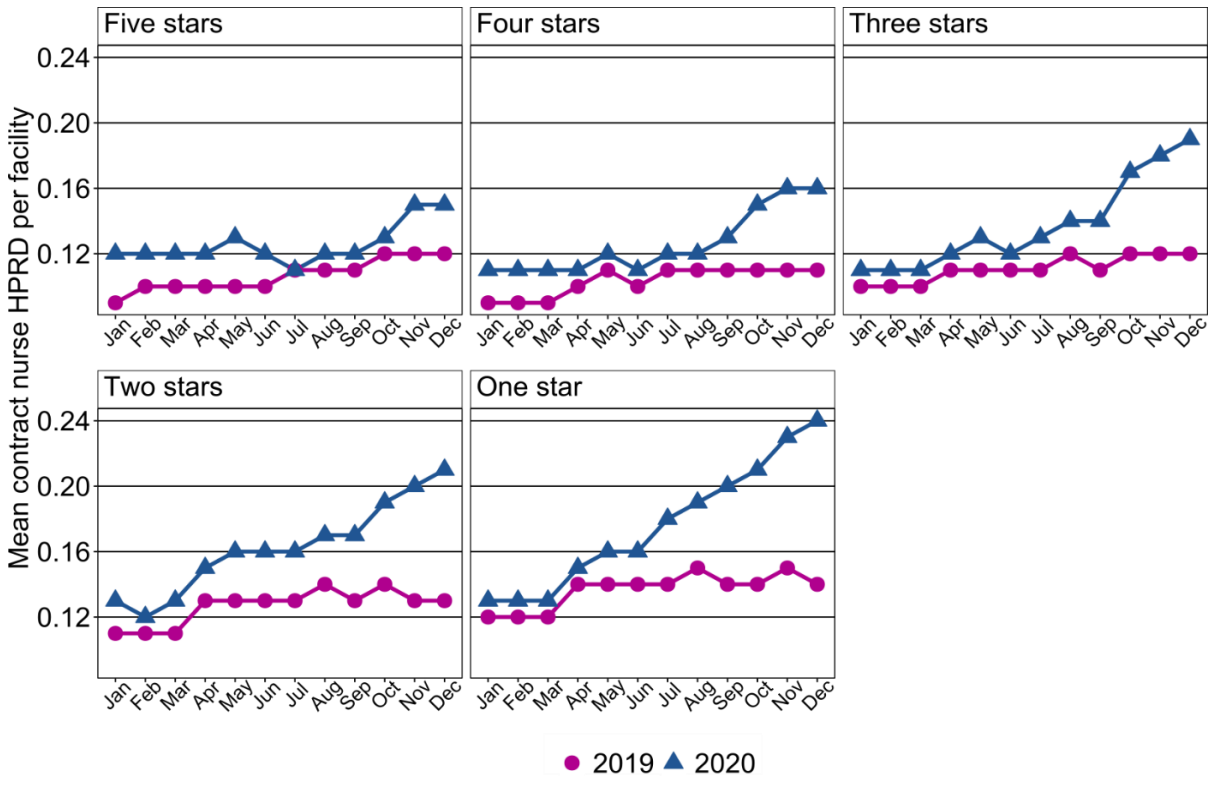
Lower-quality (1-star) nursing homes had the highest levels of contract nurse staffing prior to the pandemic, and they increased their contract nurse staffing levels the most in 2020.

Prior to the pandemic, 1-star and 2-star nursing homes had the highest levels of contract nurse staffing. In 2020, all nursing homes increased their contract nurse staffing levels, especially in November and December, but contract nurse staffing increased the most in 1-star nursing homes and the least in 5-star nursing homes (***Exhibit 3***). For example, in August, on average, 1-star nursing homes had a contract nurse HPRD of 0.15 in 2019 and this increased to 0.19 in 2020 (a 27% increase), whereas 5-star nursing homes had an average contract nurse HPRD of 0.11 in 2019, and this increased to 0.12 in 2020 (a 9% increase). Compared to December 2019, in December 2020, 1-star nursing homes increased their use of contract nursing staff by 71%, while 5-star nursing homes increased their use by 25%. This finding was confirmed after adjusting for other nursing home characteristics: 1-star nursing homes increased their contract nurse HPRD more than 3-star nursing homes, and 5-star nursing homes experienced decreases in contract nurse HPRD relative to 3-star nursing homes (see ***Appendix A*** for multivariate results).

One industry representative said that poor-quality nursing homes are *"strained in multiple parts of their operations and contract staff may be one of the only options."*

Stakeholders, especially the academic researchers, noted that use of contract staff typically correlates with poorer quality, which is consistent with research.[12] Some stakeholders suggested that poor quality facilities often have difficulty retaining staff, and their need for more contract staff in 2020 would be consistent with higher employee turnover.

Exhibit 3. Contract Nurse HPRD by Month and by Nursing Home Star Rating, 2019-2020

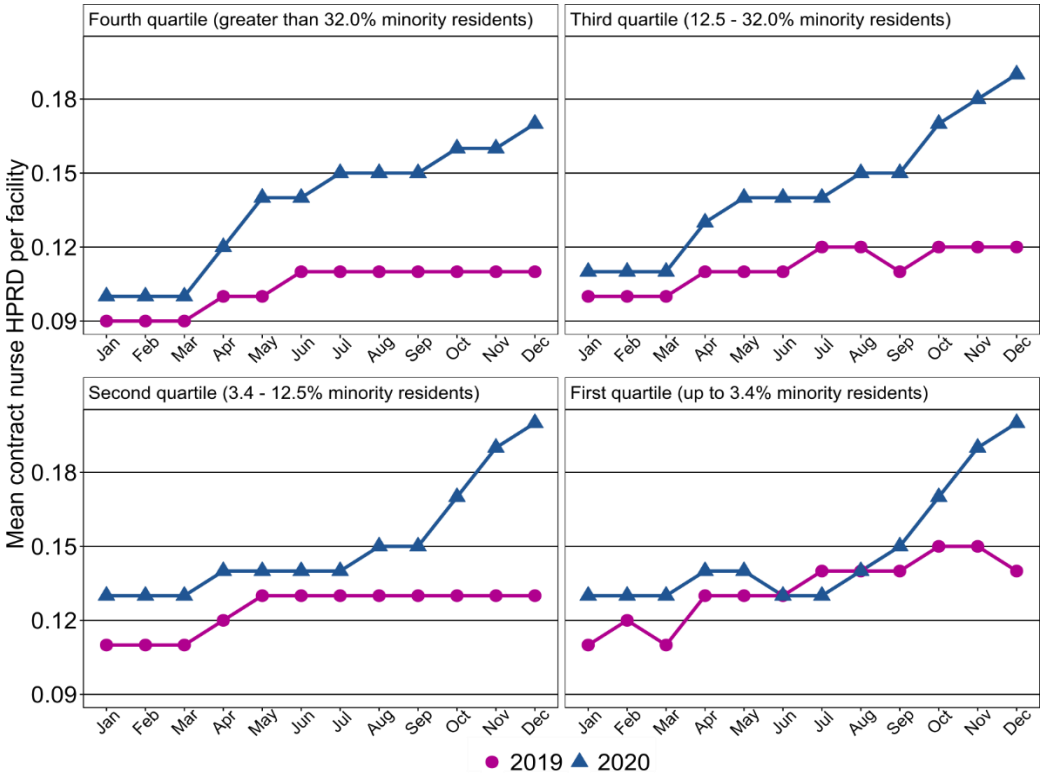


Notes: The number of nursing homes included varies by month. We included fewer facilities in quarter 1 because CMS waived the requirement to submit PBJ data in quarter 1, 2020 (see ***Appendix A***).

Before the pandemic, nursing homes with a lower percentage of racial-ethnic minority residents used the most contract staff. However, they increased their use of contract nurses the least in 2020.

Throughout 2019, nursing homes with a lower percentage of residents belonging to racial-ethnic minority groups had higher levels of contract nurse staffing as measured by HPRD. However, in 2020, nursing homes with a higher percentage of minority residents increased their contract nurse staffing levels more than nursing homes with a lower percentage of minority residents (***Exhibit 4***). For example, in October, nursing homes in the first (lowest) quartile of percentage of minority residents increased their contract nurse staffing HPRD from 0.15 in 2019 to 0.17 in 2020 (a 13% increase), and those in the fourth (highest) quartile of percentage of minority residents increased their contract nurse HPRD from 0.11 to 0.16 (a 45% increase). Also, although all types of facilities increased contract nurse staffing especially at the end of 2020, for facilities with more minority residents, the increases were throughout the year. On average across the months of 2020, contract nurse staffing HPRD increased by 31% in facilities in the highest quartile of minority residents compared to 28%, 21%, and 12% in the respective lower quartiles. We confirmed this pattern: after adjusting for other nursing home characteristics, nursing homes with a higher percentage of minority racial-ethnic residents increased their contract nurse staffing HPRD more than nursing homes with a lower percentage of minority residents (see ***Appendix A*** for multivariate results).

Exhibit 4. Contract Nurse HPRD by Month and by Resident Racial-Ethnic Minority Population (quartiles), 2019-2020



Notes: The number of nursing homes included varies by month. We included fewer facilities in quarter 1 because CMS waived the requirement to submit PBJ data in quarter 1, 2020 (see ***Appendix A***). The first quartile of nursing homes had a resident population where less than or equal to 3.4% of residents were racial-ethnic minority residents in 2018; the second quartile had a resident population where 3.4%-12.5% were; the third quartile had 12.5%-32.0%; and the fourth quartile had greater than 32%.

An academic researcher noted that nursing homes with a higher share of minority residents are often located in neighborhoods with a higher share of minority residents, which the pandemic impacted the most in terms of cases and deaths. Because nursing home staff often live in the same communities where they work, this may explain the need for more contract staff in these facilities.

Stakeholder Perspectives on Contract Staffing and Staffing Policies

All stakeholders reported that the COVID-19 pandemic exacerbated workforce shortages, which existed pre-pandemic. Two providers said that the pandemic-associated closing of CNA training schools had contributed to the dearth of available workers. All providers and other stakeholders mentioned low wages as a key challenge in recruiting and sustaining the CNA workforce, especially because of increased competitive wages in 2020. Most providers described hospitals as a main competitor, traditionally paying a more competitive wage but also offering signing bonuses to nurses and CNAs. In addition, staffing agencies reportedly started offering more competitive salaries, signing bonuses, and new benefits, a difference from before the pandemic. Two nonprofit providers added that they had been able to compete by increasing wages and offering bonuses at the start of the pandemic, but that their salaries were no longer competitive later in the pandemic, thereby increasing staff turnover.

One nonprofit provider said this about the increased competition for staff, *"When you look at what the hospitals are paying and what these agencies are paying the CNAs, it's almost doubled. RNs…we can't compete with the hospitals and the agencies. We just can't. The best thing we can do is try to maintain our current staff."*

All providers also discussed the challenge of competition across nonhealth care industries, such as retail, service, and hospitality, for nursing staff. Some providers described how these industries were competitive pre-pandemic but that wages and benefits have increased even more in those industries while remaining stagnant in long-term care. One provider added it was difficult to recruit CNAs when workers can get higher compensation in a field they perceive as less risky and less challenging.

CONCLUSION

Use of contract staffing increased greatly in 2020 and was one of the key operational strategies that helped to maintain staffing levels. Use of contract staff varied across different types of facilities. There were especially large increases in use of contract staffing by nonprofit chain facilities, facilities with lower star ratings, and facilities with more minority residents.

Through 2021, nursing homes have continued reporting staffing shortages.[13] Recent reports highlight the impact of the Great Resignation on the United States health care workforce,[14,15] which may lead to nursing homes' continued reliance on contract staff. Prior to the pandemic, facilities avoided using contract staff because of the expense and the reported lack of consistent quality.[12] Use of contract staff has been a key strategy used to fill gaps in 2020 despite contract agencies reportedly charging much higher rates. It is likely unsustainable[2] for facilities to continue to use high levels of contract staff if state and federal funding assistance ends. Further, facilities have experienced increased financial difficulties as evidenced by reported closures[16] during the pandemic. How these economic trends will affect the future of the nursing home workforce and the viability of the industry remains unknown and warrants future study.

APPENDIX A: ADDITIONAL METHODOLOGICAL DETAILS

In this appendix, we provide additional information about our study sample, the covariates we used in our models, our full model specifications and results, and our statistical methods for addressing the clustering of observations, with up to 12 observations for each nursing home.

Study Sample

Our study sample included monthly observations for all nursing homes that reported data through the PBJ system for 2019-2020, after applying several exclusions (more details on exclusion criteria and the waiver are explained elsewhere).[7] Note that our study sample included slightly different numbers of nursing homes for each month due to a monthly census requirement, and the sample is considerably smaller for Q1 months (January-March) than for other months because nursing homes were not required to report their staffing data in Q1 2020 due to a CMS emergency blanket waiver.

Independent Variables

For the independent variables in the model, we used the profit and chain affiliation status, location of the nursing home (rural, urban, or metropolitan), star rating in 2019 from CMS's 5-star quality rating system, the percentage of residents who are racial-ethnic minorities in 2018 categorized into quartiles, the pre-pandemic contract nurse staffing level categorized into quartiles, if the facility was in a hospital, the 2019 facility census, and the acuity index.[17] We also controlled for county-level monthly COVID-19 death rates to account for the variation in where and when COVID-19 outbreaks occurred. These independent variables were created using data from these sources: CMS Care Compare/Provider Data Catalog (formerly Nursing Home Compare),[18] LTCFocus,[19] Area Health Resource Files,[20] and USAFacts.[21]

Analytical Strategy

The outcome of interest that we modeled in this study was the monthly change in contract nurse HPRD from 2019 to 2020. The full model results including the coefficient, standard error (SE), 95% confidence interval (CI), and *p*-value are presented in ***Exhibit A-1***. In this model, our method for addressing multiple observations per nursing home was through including random effects in our regression model. This approach allows for heterogeneity at the nursing home level and requires the assumption that the unobserved effect of individual nursing homes is uncorrelated with the other independent variables in the model. A fixed effects model cannot be used in our case because it would preclude our use of nursing home characteristics, which are fixed throughout the year as independent variables. We also included state-month fixed effects to account for variations in state policies and other state-specific factors that were not measured but could influence the outcome.

As a sensitivity analysis, we used a regression model without random effects and estimated robust standard errors to account for nursing home-level clustering. This model did not allow for nursing home heterogeneity to impact the effect estimates, only their statistical significance. In general, the magnitude and significance of the effects we observed in this sensitivity model were similar to the main model with random effects (results not shown).

Table A-1: Association between Change in Contract Nursing Staff HPRD from 2019 to 2020 and Nursing Home Characteristics					
Covariates	**Coefficient**	**SE**	**95% CI**		***p*-value**
Profit and chain affiliation status (reference: for-profit chain)					
For-profit nonchain	0.0032	0.0047	-0.0060	0.0125	0.4911
Nonprofit chain	0.0478***	0.0058	0.0364	0.0591	0.0000
Nonprofit nonchain	0.0198***	0.0057	0.0086	0.0309	0.0005
Hospital-based	-0.0161	0.0113	-0.0382	0.0060	0.1543
Star rating (reference 3-stars):					
1-star overall rating	0.0225***	0.0060	0.0107	0.0342	0.0002
2-star overall rating	0.0106*	0.0057	-0.0006	0.0219	0.0640
4-star overall rating	-0.0080	0.0056	-0.0189	0.0029	0.1498
5-star overall rating	-0.0167***	0.0057	-0.0279	-0.0055	0.0034
Location type (reference: Metropolitan)					
Urban nonmetropolitan	-0.0226***	0.0046	-0.0317	-0.0135	0.0000
Rural	-0.0044	0.0095	-0.0231	0.0143	0.6417
2019 census quartiles (reference: 1st quartile)					
2nd quartile	0.0020	0.0034	-0.0047	0.0087	0.5589
3rd quartile	0.0084**	0.0041	0.0004	0.0164	0.0405
4th quartile	0.0109**	0.0046	0.0018	0.0200	0.0185
Percentage of minority residents in quartiles (reference: 1st quartile)					
2nd quartile	0.0160***	0.0053	0.0057	0.0264	0.0024
3rd quartile	0.0252***	0.0058	0.0139	0.0365	0.0000
4th quartile	0.0271***	0.0064	0.0145	0.0397	0.0000
Acuity Index quartiles (reference: 1st quartile)					
2nd quartile	-0.0048	0.0052	-0.0150	0.0055	0.3641
3rd quartile	-0.0086	0.0054	-0.0192	0.0020	0.1117
4th quartile	-0.0131**	0.0057	-0.0243	-0.0020	0.0212
Pre-pandemic contract nurse staff level in quartiles (reference: 1st quartile)^					
3rd quartile	-0.0216***	0.0022	-0.0258	-0.0173	0.0000
4th quartile	-0.2130***	0.0024	-0.2178	-0.2083	0.0000
COVID-19 county-level death rate	0.0006***	0.0000	0.0005	0.0007	0.0000
Notes: We controlled for state by month fixed effects, but we do not show those estimates. ^ More than half of the facility-month observations had zero contract nurse HPRD in 2019; thus, there are only three quartiles for pre pandemic contract nurse staff level. */**/*** = Significantly different from zero based on a *p*-value cutoff of 0.1/0.05/0.01.					
Green shows increase.		Gold shows decrease.			

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