U.S. House of Representatives Select Subcommittee on the Coronavirus Crisis

"Like Fire Through Dry Grass: Nursing Home Mortality & COVID-19 Policies"

May 17, 2023

Statement of David C. Grabowski, PhD
Professor, Department of Health Care Policy
Harvard Medical School, Boston, MA

Chairman Wenstrup, Ranking Member Ruiz, and distinguished members of the House Select Subcommittee on the Coronavirus Crisis: thank you for the opportunity to testify today on this important topic. I am a Professor of Health Care Policy at Harvard Medical School. I am here today speaking in my capacity as researcher who has studied nursing home quality for twenty-five years.

This is my third time testifying to the Subcommittee on nursing homes and COVID. The first time was back on June 11, 2020. As part of my remarks that day, I said:

> A key point I wish to emphasize is that much of the impact of COVID in nursing homes could have been avoided with increased federal leadership, resources, and attention. Rather than prioritizing the safety of the 1.3 million individuals that live in nursing homes and the staff that care for them, the federal government has chosen to push the logistics and cost off to the states and the nursing homes. By failing to invest in testing, personal protective equipment and the workforce, the federal government has allowed a problem that started in a single nursing home in Kirkland, Washington to grow into a national crisis.

Three years later, I stand by that statement completely. I am not letting nursing home, local or state leaders off-the-hook. They deserve blame too. Yet, more than any other entity, our federal government failed our nursing home residents and their caregivers back in 2020 at the start of the pandemic. The main factors that led to widespread COVID cases and deaths were systemwide. They were not isolated to a few nursing homes or states. Systemwide problems require systemwide solutions, which are the responsibility of the federal government.

In my testimony, I will briefly review the impact of COVID on nursing homes. I will summarize research on why COVID impacted certain nursing homes and not others. COVID was truly a "crisis on top of a crisis" in nursing homes, suggesting once again that we need system level reforms to address both the immediate and long-standing crises. Thus I will discuss both ongoing reforms by the Biden Administration and some longer-term reforms put forward by a National Academies of Sciences, Engineering and Medicine committee of which I was a member.[1] For a full description of the National Academies' findings and recommendations, I would refer the committee to the report itself, which is available at www.nationalacademies.org/nursing-homes. Although all the National Academies' recommendations are important, I will focus my testimony on the specific recommendations related to financing and payment and quality assurance.

The Impact of COVID on Nursing Homes

COVID has completely devastated nursing homes in the US.[2] After accounting for the gap in federal data at the start of the pandemic,[3] there have been over 1.6 million COVID cases among nursing home residents leading to roughly 176,000 COVID-related fatalities. For comparative purposes, this is equivalent to 12% of all residents living in a nursing home at the start of the pandemic. There were many additional pandemic-related deaths among nursing home residents due to gaps in medical care and increased morbidity.[4]

Efforts to stem this plague took a huge toll.[5] Nursing homes were in all-out lockdown for over a year at the start of the pandemic. Visitors were banned. Family members were unable to see their loved ones. Communal dining and activities at the facilities were canceled. Many residents were unable to enjoy fresh air.[6] Even in nursing homes that did not experience a COVID outbreak in 2020, our research indicates residents suffered increased weight loss and depression, clear signs that lockdowns adversely affected resident physical and mental health.[7]

Working conditions have always been challenging in nursing homes, but this has been magnified during the pandemic.[8] Over 1.6 million staff have had confirmed Covid cases, and roughly 3,100 staff have died from Covid, making nursing home caregiver the most dangerous job in America.[9] Many staff did not receive hazard or hero pay or any additional benefits during the pandemic.[10] Many nursing homes experienced severe staff shortages[11], with limited access to personal protective equipment[11] and rapid Covid testing[12]. The jobs are so low paid that staff often work in multiple facilities,[13] which contributed to the virus spreading across facilities. Although the number of workers has been trending up, the nursing home workforce has declined by roughly 253,000 workers (or 7.5%) since the start of the pandemic.[14]

Nursing homes have also experienced a major decline in patient census.[15,16] Since the start of the pandemic, federal payroll-based journal data suggest national census has declined by roughly 114,000 residents (or 8.9%) as of September 2022. In particular, nursing homes are struggling to attract higher-revenue, short-stay Medicare patients,[17] which has exposed longstanding issues in how nursing home services are structured and financed.[18] Nursing homes predominantly care for two groups: post-acute Medicare patients and long-stay Medicaid residents. Medicare is a generous payer,[16] while Medicaid often pays below the cost of caring for these frail and medically complex individuals.[19] Thus, the economics of nursing home care hinges on admitting enough short-stay Medicare patients to cross-subsidize the care of long-stay residents paid by Medicaid. Nursing homes that are predominantly dependent upon Medicaid are poorly resourced, have lower staffing levels, are in the poorest neighborhoods, have the most quality problems and are most likely to close.[20]

With the decline in new Medicare admissions during the pandemic, nursing homes relied on relief funds and waiver admissions during the public health emergency (PHE). Indeed, our research team found a large use of the waiver allowing “skilling-in-place” without a qualifying three-day hospital stay.[21] The Medicare Payment Advisory Commission (MedPAC) found that nursing home margins have increased during the pandemic.[16] With the PHE ending last week, nursing homes will not be able to convert long-stay residents with traditional Medicare over to Part A (skilled nursing) status without a three-day hospital stay. More nursing homes will need to

rely on Medicaid, which has led to heighted concerns around closures.[22] The risk of bankruptcy is exacerbated in many for-profit nursing homes where ownership and operations are separated. The owner has control of the facility's most valuable financial asset (the real estate), while the operator has a very stringent lease agreement and must continue to make payments in the context of increasing labor costs and declining revenues.

Why Did COVID Outbreaks Occur in Some Facilities?

A key question in directing policy resources is determining what factors were associated with COVID-19 outbreaks in nursing homes. There were facility, local, state, and federal actions and policies that contributed to COVID outbreaks in nursing homes. One state policy that received significant attention was the action on the part of states (California, Michigan, New Jersey, New York, Pennsylvania) to mandate that nursing homes admit COVID-positive patients to allow hospitals to discharge patients if they have the appropriate infection control protocols in place. This policy was widely criticized by the research community because many feared it would lead to admission of new COVID patients to nursing homes even without infection control protocols in place. (Many states also paid an enhanced Medicaid rate for the admission of COVID-positive patients.[23]) As I told Vox in June of 2020,[24] "New York's mandate that nursing homes accept patients from the hospitals was a mistake. New York took a hospital capacity problem and made it a nursing home capability problem." Most nursing homes were not capable of caring safely and effectively for newly admitted COVID-positive patients. As such, if nursing homes without adequate infection control policies admitted new COVID patients under this state mandate, then the policy put nursing home residents and their staff in an unsafe position.

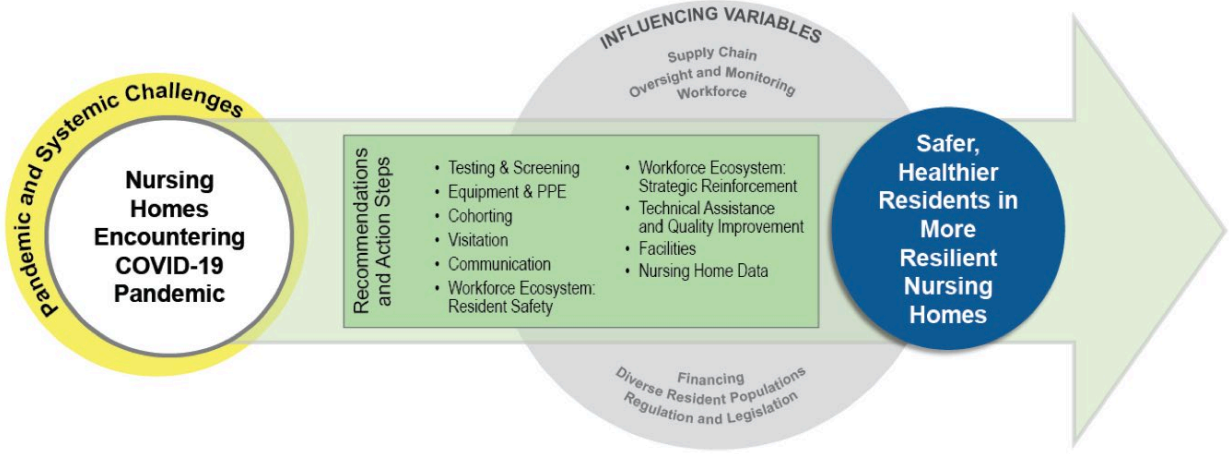
A key issue is how many COVID cases and deaths in these five mandate states can be attributed to these state policies during the period they were in effect. I am not aware of any peer-reviewed research examining this topic. However, many states experienced high death rates during the early part of the pandemic and most never had such a policy in place. I can point to Massachusetts where I live and work as one such example. Thus, it stands to reason that the mandate to accept COVID positive patients may have contributed to nursing home COVID cases and deaths, but it doesn't explain most cases and deaths in these five states. Both Massachusetts and New York nursing homes, for example, had a shortage of rapid tests, high-quality PPE, and available workers.

In a systematic review of 36 peer-reviewed studies examining why certain nursing homes had COVID outbreaks and others did not,[25] our research team concluded "***larger bed size and location in an area with high COVID-19 prevalence were the strongest and most consistent predictors of facilities having more COVID-19 cases and deaths."*** When COVID is present in the surrounding community where the staff live, they often unknowingly brought into the nursing home where they work. More staff work at larger nursing homes, so it stands to reason that residents of smaller nursing homes would have fewer COVID cases and deaths.[26] Even controlling for the number of beds, the more staff coming in-and-out of the building, the more likely there will be a COVID outbreak.[27] Nursing homes with more contract and part-time staff were more likely to have COVID outbreaks relative to those with a greater share of full-time employees, all else equal. One study even used cell phone data to show that staff working in multiple facilities contributed to the spread of COVID across these nursing homes.[13]

During the early part of the pandemic, some suggested COVID would be concentrated in lower quality nursing homes. For example, CMS suggested in a June 1, 2020, press release[28] that, "Early analysis shows that facilities with a one-star quality rating were more likely to have large numbers of COVID-19 cases than facilities with a five-star quality rating." Our 36-study review[25] did not support this early analysis. COVID outbreaks in nursing homes were not consistently associated with the star rating of the facility. Moreover, they also were not consistently associated with the share of Medicaid recipients, a record of infection control violations, chain membership, or for-profit ownership. COVID outbreaks were largely a function of "where you were located" versus "who you were" as a facility.[29] These US results were also found to extend to cross-country data. In a study of the US and 13 European nations, the countries with the largest number of nursing home deaths had both the most community COVID deaths and the largest nursing homes.[30]

This finding that COVID is most strongly related to location and facility size does not suggest there was nothing that could have been done to manage COVID outbreaks. Rather, it suggests that policymakers needed to adopt a system-level approach to address this problem. I was part of the CMS Coronavirus Commission on Safety and Quality in Nursing Homes that provided a series of recommendations and action steps to CMS back in September of 2020.[31] I have reproduced an exhibit below from our report summarizing our recommendation framework (see Figure 1).

Figure 1: CMS Coronavirus Commission on Safety and Quality in Nursing Homes Recommendation Framework



Reproduced From: Nursing Home Commission, 2020, Report to CMS[31]

In the CMS report[31], we offered 27 recommendations and over 100 action steps across 10 theme areas. The theme areas were: 1) testing and screening, 2) equipment and PPE, 3) cohorting, 4) visitation, 5) communication, 6) workforce ecosystem: resident safety, 7) workforce ecosystem: strategic reinforcement, 8) technical assistance and quality improvement, 9) facilities, and 10) nursing home data.

As the U.S. General Accountability Office (GAO) wrote in a November 2020 report,[32] "CMS released a response to the commission that broadly outlined the actions it has taken to date, but it has not fully addressed the commission's recommendations or provided an implementation plan to track and report progress toward implementing them…**GAO recommends that CMS quickly develop a plan that further details how it intends to respond to and implement, as appropriate, the commission's recommendations."** However, CMS never meaningfully implemented our Commission's recommendations and thus put resident lives at risk.

COVID testing is an example of a lost opportunity for our federal government. In a 2021 paper, our research team found very low use of rapid COVID tests for nursing home staff.[12] A more recent study found that greater surveillance testing of staff members at nursing homes was associated with clinically meaningful reductions in COVID-19 cases and deaths among residents, particularly before vaccine availability.[33] If CMS had increased access to testing at an earlier date, it could have saved lives. As these authors wrote[33]: "During the prevaccine phase of the pandemic, we found that the performance of one additional test per staff member per week was associated with a 30% reduction in resident Covid-19 cases and a 26% reduction in related resident deaths." Similar to the lack of rapid testing, our research team found serious staff shortages back in 2020.[11,34] Another recent paper has found staffing shortages during the pandemic were associated with greater resident deaths.[35] If the Federal government had put additional dollars into the workforce in terms of hazard pay and benefits, it also could have saved lives.

COVID Vaccination Effort

Given the concentration of cases and deaths in long-term care facilities, residents and staff were prioritized for receipt of the COVID vaccine beginning in December 2020. The Federal Pharmacy Partnership for Long-Term Care Program contracted with CVS and Walgreens to distribute and administer the vaccine. The program was delayed in implementation given the logistical challenges of visiting 30,000 nursing homes and assisted living facilities and vaccinating millions of residents and their caregivers. Ultimately however, more than 7.9 million doses were administered through the federal program.

Despite the federal program, many staff refused to get vaccinated. In our early study of nursing home vaccination data,[36] we found 60.0% of staff and 81.4% of residents were fully vaccinated as of July 18, 2021. The lowest vaccine coverage was among CNAs, who constitute most direct caregivers. We found that nonprofit and nonchain nursing homes, facilities with higher Medicare star ratings, and facilities with longer-tenured staff achieved greater vaccine coverage, suggesting that organizational characteristics, including ownership structure, quality, and ability to retain staff, may be key in facilities' ability to vaccinate residents and staff. However, our findings also suggested that facilities were also subject to broader challenges to vaccine acceptance in the community because facility coverages were strongly associated with county-wide vaccination coverage and staff coverage was strongly associated with 2020 presidential election voting patterns.

Today, the most recent CMS data (https://data.cms.gov/covid-19/covid-19-nursing-home-data) suggest 84.8% of residents and 85.8% of staff have completed their primary COVID vaccination.

These rates are relatively strong. However, nursing home residents and staff still lag in terms of being up to date with their vaccines. 55.2% of residents are up to date with their vaccines, while only 23.0% of staff are up to date. These rates (especially for staff) are unacceptably low.

Why is it important to get staff fully vaccinated? Our research suggests vaccinated nursing home staff save resident lives.[37] In the presence of high community prevalence of Covid-19, we found nursing homes with low staff vaccination coverage had higher numbers of cases and deaths than those with high staff vaccination coverage over the summer of 2021.

In August of 2021, the federal government declared it would mandate COVID-19 vaccinations for all nursing home staff. Some states began mandating vaccinations that fall, and the Federal mandate became effective in early-2022. A key concern with the mandates was that many staff would choose to leave the profession rather than become vaccinated.

Our research team published a study on the experience from twelve states that mandated staff vaccinations ahead of the federal requirement.[38] Our findings suggest that state-level vaccine mandates were associated with increased staff vaccination coverage without increases in reported staffing shortages. Vaccination increases were largest when mandates had no test-out option and were also larger in Republican-leaning counties, which had lower mean baseline vaccination rates. These findings support the use of state mandates for booster doses for nursing home employees because they may improve vaccine coverage, even in areas with greater vaccine hesitancy.

There are still immediate and longer-term system-level reforms that would help fortify the nursing home industry. I will first discuss a couple of ongoing reforms before turning to longer-run reforms that the government could undertake.

Biden Administration Reforms[39]

Increased Financial and Ownership Transparency

Despite the growing complexity of nursing home ownership, transparency and accountability efforts have historically been poor. This is despite public-facing efforts, such as the 1998 introduction of the Nursing Home Compare report-card system which reported facility characteristics and quality information and launch of the "Five-Star" rating system in 2008. Transparency has also been a key component in regulations for decades, including the 1987 Nursing Home Reform Act, 2010 Patient Protection and Affordable Care Act (ACA) and accompanying Nursing Home Transparency and Improvement Act. Section 6101(a) of the ACA established requirements for the disclosure of nursing home ownership, including disclosure of entities and individuals with at least 5% of direct or indirect ownership interest. This was reflected in changes to required Provider Enrollment, Chain, and Ownership System (PECOS) information, which all Medicare-certified facilities are required to submit upon enrollment and for re-validation, unless there are any changes.

Recognizing the inadequacy of previous efforts such as Nursing Home Compare, PECOS database and the ACA's Section 6101(a) to keep up with the changing landscape of nursing

home ownership (more details available in the appendix), the Biden Administration announced in 2022 a series of reforms to address the quality of care in nursing homes.[39] These plans included a series of efforts to increase accountability and transparency of facility ownership. Since this announcement, the administration has released a series of new data on changes of ownership (CHOW) and common ownership. More specifically, in April 2022, CMS released public data on mergers, acquisitions, consolidations and CHOW for Medicare-certified nursing homes from 2016-2022 to identify how ownership structures are changing and its effect on competition and consolidation.[40] In September 2022, CMS released a data file containing additional information about the ownership of Medicare-certified nursing homes, to assist with the identification of common owners.[41] The cited goal of this data is to help understand the size of chains, prevalence of individual vs. multiple owners, and assess local market concentration.

Minimum Staffing Standards

Nursing home staff are paid relatively poorly for incredibly demanding work. Certified nurse aides (CNAs) who provide over 90 percent of direct resident care are often paid at or near minimum wage — the same wages as entry-level workers in retail establishments or fast-food chains. Registered nurses and licensed practical nurses who work in nursing homes are often paid below their counterparts who work in hospitals and other health care settings. Moreover, nursing home staff often lack essential benefits, like health insurance and paid sick leave. That means nursing home workers are incentivized to come to work even when sick, which makes little sense given the frailty of the residents they care for and made absolutely no sense during a pandemic.

Nursing homes are also very hierarchical workplaces with lower-level staff having little autonomy and control in their jobs. Not surprisingly, being undervalued and unempowered makes it hard to recruit and retain individuals to work in nursing homes. The result is that many facilities around the country often have dangerously low levels of staffing.[42] Additionally, the average U.S. nursing home was recently found to have an annual staff turnover rate of 128 percent.[43] This suggests an average facility's staff completely changes over the course of a year, and many nursing homes have even higher turnover rates — as much as 300 percent — suggesting the staff changes every four months. Research suggests good nursing home quality depends on the relationship between staff and residents, especially for persons with dementia.[44] Thus, it's hard to see how those relationships can develop when staff keep changing. As noted above, the staffing situation has only gotten worse during the pandemic.[34]

One solution is to increase the number of direct care workers by raising the federal minimum staffing standards in nursing homes. The federal standards are relatively low and have not been updated in over 30 years.[45] Many states set staffing levels above the federal standards and these state policies have generally been found to increase staff.[46] The Biden Administration recently put a minimum staffing standard forward as part of a broader set of nursing home reforms.[47] The details of this minimum staffing standard should be released soon. CMS Secretary Chiquita Brooks-LaSure recently stated, "We have promised that we will have nursing home staffing guidance out in the spring, and I like to meet my deadlines."[48]

In the short-term, policymakers can improve conditions for nursing home residents by mandating a minimum number of staff and increasing ownership transparency. I believe these types of policies are necessary but not sufficient. In the longer-term, shifting the culture of nursing homes is going to require deeper changes in what we all want from nursing homes for ourselves and those who provide care for us. To do that, we will have to shift how we finance and pay for nursing home services and how we oversee the delivery of care. These types of reforms will be part of the longer-term changes offered below.

A Long-Term Path Forward

The recent National Academies committee on which I served concluded that the way in which the United States finances and regulates care in nursing home settings is **ineffective, inefficient, fragmented, and unsustainable**. I have not found much disagreement on this conclusion among different stakeholders. However, there is a lot of disagreement on how to fix things. The recommendations from the National Academies report provide one roadmap forward towards an effective, efficient, coordinated, and sustainable model of nursing home care.

Financing and Payment Reforms
The National Academies committee strived to create a more rational and robust financing system.[49] We recognized that the current approach to financing nursing home care is highly fragmented, with Medicaid paying for long-stay care, Medicare paying for post-acute care, and hospice being covered under a separate Medicare benefit. We offered the following recommendations:

Study of a federal long-term care benefit: To create a more rational approach to financing nursing home care that would address these significant shortcomings, the National Academies report included a recommendation about moving toward a federal long-term care benefit by studying how to design such a benefit and then implementing state demonstration programs to test the model prior to national implementation.

Adequacy of Medicaid payments: The fragmented financing system leads nursing homes to rely on higher payments for Medicare services to cross-subsidize lower Medicaid payments—an inefficient and unsustainable arrangement. In general, states are required by law to provide assurances (and sometimes evidence) that Medicaid payments are adequate to provide access to high-quality care. Nursing home payment rates, however, are not subject to this requirement. To ensure adequate investment in caring for long-stay nursing home residents, our study committee recommended the use of detailed and accurate financial information to ensure payments are adequate to cover comprehensive nursing home care.

Specific percentage of Medicare and Medicaid payments for direct-care services: The National Academies committee also recommended designation of a specific percentage of Medicare and Medicaid payments for direct-care services (as opposed to non-care costs such as lease payments).

Value-based purchasing initiatives for long-term care: For short-stay post-acute nursing home care, the National Academies committee called for extending current bundled payment

arrangements to all conditions to advance value-based payment based on quality, not quantity of services.

Demonstration projects on alternative payment models: The National Academies committee recommended demonstration projects to explore the use of alternative payment models for long-term nursing home care, separate from the bundled payment initiatives for short-stay post-acute care.

Quality Assurance

The National Academies committee also recognized the need to design a more effective and responsive system of quality assurance.[49] Although federal oversight standards and processes are uniform across states, considerable variation exists in the implementation of routine inspections, in the imposition of sanctions, and in the investigation of complaints. The survey process also often fails to identify serious care problems, to fully correct and prevent recurrence of problems, and to investigate complaints in a timely manner.

State surveys and CMS oversight: The National Academies committee provided recommendations to ensure state survey agencies have adequate resources and recommendations for the oversight of state survey performance. Despite the prominent role of nursing home oversight and regulation, the evidence base for its effectiveness in ensuring a minimum standard of quality is relatively modest. The regulatory model needs significant improvement, but there is little consensus (or evidence) to suggest which approaches would ultimately lead to improvement in the quality of care. Our committee recommended developing and evaluating strategies to improve quality assurance activities.

Enhancing the Long-Term Care Ombudsman Program: The Long-Term Care Ombudsman Program's sole mission is to serve as an advocate for residents and work to ensure they receive quality care. Although some studies have shown this program has had a positive impact, there is considerable variation across and within states in terms of resources, funding, and staff and volunteer coverage. To meet federal and state requirements and provide nursing home residents and their families with optimal support, the Administration for Community Living in the U.S. Department of Health and Human Services should advocate for increased funding and resources to hire additional paid staff; train staff and volunteers; bolster infrastructure; make data publicly available; and develop summary metrics to document the effectiveness of the program.

Eliminate Certificate-of-Need Laws and Construction Moratoria: As part of quality assurance, some states maintain certificate-of-need requirements to regulate expansions in the health care market. The requirements employ a need-based evaluation of all applications for new construction or additions to existing facilities. Some states also implement construction moratoria that prohibit the building of new health care facilities. Despite their intent, such regulations do not appear to control Medicaid nursing home spending and may harm consumers by limiting their choices and access to care. States should immediately eliminate certificate-of-need requirements and construction moratoria for nursing homes to encourage potential innovative care models and foster robust competition to expand consumers' choices and improve quality.

Transparency and Accountability

A key goal of our National Academies work was to increase the transparency and accountability of finances, operations, and ownership. Our committee recognized that a key barrier to effective nursing home oversight has been lack of transparency regarding nursing home finances, operations, and ownership. CMS makes some ownership information available (and more has been made public recently), but these data are incomplete; often difficult to use; and do not allow for assessment of quality across facilities owned or operated by the same entity. Moreover, there is little transparency regarding the practice of some nursing homes to contract with related-party organizations that are also owned by same the nursing home corporation. Increased transparency and accountability are needed to more fully evaluate both how Medicare and Medicaid payments are spent and how ownership models and spending patterns impact the quality of care.

Increase Financial and Ownership Transparency. The National Academies committee recommended collecting, auditing, and making detailed facility-level data on the finances, operations, and ownership of all nursing homes publicly available in real time in a readily usable database that allows for the assessment of quality by common owner or management company.

In summary, the pandemic has shone a harsh light on nursing home care in America. We have an opportunity to address problems that we have ignored for far too long. We had an opportunity to begin this reform effort back in June 2020 when I first testified to this Subcommittee. It is not too late. The urgency to reform the ways in which care is financed, delivered, and regulated in nursing home settings is undeniable. I look forward to working with the members of this Subcommittee on this effort. Thanks.

REFERENCES

1. National Academies of Sciences Engineering and Medicine. *The National Imperative to Improve Nursing Home Quality: Honoring Our Commitment to Residents, Families, and Staff*. . The National Academies Press; 2022.
2. McGarry BE, Grabowski DC. Nursing Homes and COVID-19: A Crisis on Top of a Crisis. *The ANNALS of the American Academy of Political and Social Science*. 2021;698(1):137-162. doi:10.1177/00027162211061509
3. Shen K, Loomer L, Abrams H, Grabowski DC, Gandhi A. Estimates of COVID-19 Cases and Deaths Among Nursing Home Residents Not Reported in Federal Data. *JAMA Netw Open*. Sep 1 2021;4(9):e2122885. doi:10.1001/jamanetworkopen.2021.22885
4. Office of Inspector General. COVID-19 Had a Devastating Impact on Medicare Beneficiaries in Nursing Homes During 2020. Accessed August 2, 2021, 2021. https://oig.hhs.gov/oei/reports/OEI-02-20-00490.pdf
5. Karlawish J, Grabowski DC, Hoffman AK. Continued bans on nursing home visitors are unhealthy and unethical. *Washington Post* July 13. https://www.washingtonpost.com/opinions/2020/07/13/residents-good-nursing-homes-should-consider-re-allowing-visitors/
6. Montgomery A, Slocum S, Stanik C. *Experiences of Nursing Home Residents During the Covid-19 Pandemic*. 2020.
7. Barnett ML, Waken RJ, Zheng J, et al. Changes in Health and Quality of Life in US Skilled Nursing Facilities by COVID-19 Exposure Status in 2020. *JAMA*. Sep 13 2022;328(10):941-950. doi:10.1001/jama.2022.15071
8. Denny-Brown N, Stone D, Hays B, Gallagher D. COVID-19 Intensifies Nursing Home Workforce Challenges. https://aspe.hhs.gov/reports/covid-19-intensifies-nursing-home-workforce-challenges-0
9. McGarry B, Porter L, Grabowski D. Nursing home workers now have the most dangerous jobs in America. They deserve better. Accessed January 9, 2021. https://www.washingtonpost.com/opinions/2020/07/28/nursing-home-workers-now-have-most-dangerous-jobs-america-they-deserve-better/
10. SteelFisher GK, Epstein AM, Grabowski DC, Joynt Maddox KE, Orav EJ, Barnett ML. Persistent challenges of COVID-19 in skilled nursing facilities: The administrator perspective. *J Am Geriatr Soc*. Apr 2021;69(4):875-878. doi:10.1111/jgs.17062
11. McGarry BE, Grabowski DC, Barnett ML. Severe Staffing And Personal Protective Equipment Shortages Faced By Nursing Homes During The COVID-19 Pandemic. *Health Aff (Millwood)*. Oct 2020;39(10):1812-1821. doi:10.1377/hlthaff.2020.01269
12. McGarry BE, SteelFisher GK, Grabowski DC, Barnett ML. COVID-19 Test Result Turnaround Time for Residents and Staff in US Nursing Homes. *JAMA Intern Med*. Apr 1 2021;181(4):556-559. doi:10.1001/jamainternmed.2020.7330
13. Chen MK, Chevalier JA, Long EF. Nursing home staff networks and COVID-19. *Proc Natl Acad Sci U S A*. Jan 7 2021;118(1):e2015455118. doi:10.1073/pnas.2015455118
14. U.S. Bureau of Labor Statistics. Nursing and Residential Care Facilities: NAICS 623. Accessed February 21, 2022. https://www.bls.gov/iag/tgs/iag623.htm
15. Barnett ML, Hu L, Martin T, Grabowski DC. Mortality, Admissions, and Patient Census at SNFs in 3 US Cities During the COVID-19 Pandemic. *JAMA*. Aug 4 2020;324(5):507-509. doi:10.1001/jama.2020.11642

16. Medicare Payment Advisory Commission. *Report to the Congress: Medicare Payment Policy*. 2023. March.
17. Werner RM, Bressman E. Trends in Post-Acute Care Utilization During the COVID-19 Pandemic. *J Am Med Dir Assoc*. Dec 2021;22(12):2496-2499. doi:10.1016/j.jamda.2021.09.001
18. Grabowski DC. Medicare and Medicaid: conflicting incentives for long-term care. *Milbank Quarterly*. 2007;85(4):579-610.
19. Medicaid and CHIP Payment and Access Commission. *Estimates of Medicaid Nursing Facility Payments Relative to Costs*. 2023. https://www.macpac.gov/wp-content/uploads/2023/01/Estimates-of-Medicaid-Nursing-Facility-Payments-Relative-to-Costs-1-6-23.pdf
20. Mor V, Zinn J, Angelelli J, Teno JM, Miller SC. Driven to tiers: socioeconomic and racial disparities in the quality of nursing home care. *Milbank Quarterly*. 2004;82(2):227-56. doi: 10.1111/j.0887-378X.2004.00309.x
21. Ulyte A, Waken RJ, Epstein AM, et al. Medicare Skilled Nursing Facility Use and Spending Before and After Introduction of the Public Health Emergency Waiver During the COVID-19 Pandemic. *JAMA Intern Med*. Apr 24 2023;doi:10.1001/jamainternmed.2023.0770
22. Gadbois EA, Brazier JF, Meehan A, Grabowski DC, Shield RR. "I don't know how many nursing homes will survive 2021": Financial sustainability during COVID-19. *J Am Geriatr Soc*. Oct 2021;69(10):2785-2788. doi:10.1111/jgs.17380
23. CMCS Informational Bulletin. *Nursing Home Strategies for COVID-19 Only Isolation of COVID-19 Residents*. 2020. https://www.medicaid.gov/federal-policy-guidance/downloads/cib082420.pdf
24. Scott D. Why the coronavirus has taken so many lives in US nursing homes. *Vox*. https://www.vox.com/2020/6/3/21279431/nursing-homes-coronavirus-covid-19-deaths-cuomo-cdc
25. Konetzka RT, White EM, Pralea A, Grabowski DC, Mor V. A systematic review of long-term care facility characteristics associated with COVID-19 outcomes. *J Am Geriatr Soc*. Oct 2021;69(10):2766-2777. doi:10.1111/jgs.17434
26. Zimmerman S, Dumond-Stryker C, Tandan M, et al. Nontraditional Small House Nursing Homes Have Fewer COVID-19 Cases and Deaths. *J Am Med Dir Assoc*. Mar 2021;22(3):489-493. doi:10.1016/j.jamda.2021.01.069
27. McGarry BE, Gandhi AD, Grabowski DC, Barnett ML. Larger Nursing Home Staff Size Linked To Higher Number Of COVID-19 Cases In 2020. *Health Aff (Millwood)*. Jul 14 2021:101377hlthaff202100323. doi:10.1377/hlthaff.2021.00323
28. Trump Administration Unveils Enhanced Enforcement Actions Based on Nursing Home COVID-19 Data and Inspection Results. 2020. https://www.cms.gov/newsroom/press-releases/trump-administration-unveils-enhanced-enforcement-actions-based-nursing-home-covid-19-data-and
29. Abrams HR, Loomer L, Gandhi A, Grabowski DC. Characteristics of U.S. Nursing Homes with COVID-19 Cases. *J Am Geriatr Soc*. Aug 2020;68(8):1653-1656. doi:10.1111/jgs.16661
30. Aalto UL, Pitkala KH, Andersen-Ranberg K, et al. COVID-19 pandemic and mortality in nursing homes across USA and Europe up to October 2021. *Eur Geriatr Med*. Jun 2022;13(3):705-709. doi:10.1007/s41999-022-00637-1

31. Coronavirus Commission on Safety and Quality in Nursing Homes. Commission Final Report. Accessed January 7, 2021. https://edit.cms.gov/files/document/covid-final-nh-commission-report.pdf
32. General Accountability Office. *COVID-19: Urgent Actions Needed to Better Ensure an Effective Federal Response*. 2020.
33. McGarry BE, Gandhi AD, Barnett ML. Covid-19 Surveillance Testing and Resident Outcomes in Nursing Homes. *N Engl J Med*. Mar 23 2023;388(12):1101-1110. doi:10.1056/NEJMoa2210063
34. Shen K, McGarry BE, Grabowski DC, Gruber J, Gandhi AD. Staffing Patterns in US Nursing Homes During COVID-19 Outbreaks. *JAMA Health Forum*. Jul 2022;3(7):e222151. doi:10.1001/jamahealthforum.2022.2151
35. Joshi S. Staffing Shortages, Staffing Hours, and Resident Deaths in U.S. Nursing Homes During the COVID-19 Pandemic. *J Am Med Dir Assoc*. In press;
36. McGarry BE, Shen K, Barnett ML, Grabowski DC, Gandhi AD. Association of Nursing Home Characteristics With Staff and Resident COVID-19 Vaccination Coverage. *JAMA Intern Med*. Dec 1 2021;181(12):1670-1672. doi:10.1001/jamainternmed.2021.5890
37. McGarry BE, Barnett ML, Grabowski DC, Gandhi AD. Nursing Home Staff Vaccination and Covid-19 Outcomes. *N Engl J Med*. Jan 27 2022;386(4):397-398. doi:10.1056/NEJMc2115674
38. McGarry BE, Gandhi AD, Syme M, Berry SD, White EM, Grabowski DC. Association of State COVID-19 Vaccine Mandates With Staff Vaccination Coverage and Staffing Shortages in US Nursing Homes. *JAMA Health Forum*. Jul 2022;3(7):e222363. doi:10.1001/jamahealthforum.2022.2363
39. White House. FACT SHEET: Protecting Seniors by Improving Safety and Quality of Care in the Nation's Nursing Homes. 2022.
40. Biden-Harris Administration Continues Unprecedented Efforts to Increase Transparency of Nursing Home Ownership. 2023. https://www.cms.gov/newsroom/press-releases/biden-harris-administration-continues-unprecedented-efforts-increase-transparency-nursing-home
41. Biden-Harris Administration Makes More Medicare Nursing Home Ownership Data Publicly Available, Improving Identification of Multiple Facilities Under Common Ownership. 2022. https://www.hhs.gov/about/news/2022/09/26/biden-harris-administration-makes-more-medicare-nursing-home-ownership-data-publicly-available-improving-identification-of-multiple-facilities-under-common-ownership.html
42. Geng F, Stevenson DG, Grabowski DC. Daily Nursing Home Staffing Levels Highly Variable, Often Below CMS Expectations. *Health affairs*. Jul 2019;38(7):1095-1100. doi:10.1377/hlthaff.2018.05322
43. Gandhi A, Yu H, Grabowski DC. High Nursing Staff Turnover In Nursing Homes Offers Important Quality Information. *Health Aff (Millwood)*. Mar 2021;40(3):384-391. doi:10.1377/hlthaff.2020.00957
44. Gaugler JE, Yu F, Davila HW, Shippee T. Alzheimer's disease and nursing homes. *Health Aff (Millwood)*. Apr 2014;33(4):650-7. doi:10.1377/hlthaff.2013.1268
45. Zhang X, Grabowski DC. Nursing home staffing and quality under the nursing home reform act. *Gerontologist*. Feb 2004;44(1):13-23.
46. Chen MM, Grabowski DC. Intended and unintended consequences of minimum staffing standards for nursing homes. *Health economics*. Jul 2015;24(7):822-39. doi:10.1002/hec.3063

47. FACT SHEET: Protecting Seniors by Improving Safety and Quality of Care in the Nation's Nursing Homes. February 22, 2022, 2022. https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/28/fact-sheet-protecting-seniors-and-people-with-disabilities-by-improving-safety-and-quality-of-care-in-the-nations-nursing-homes/
48. Roubein R. Biden's nursing home staff mandates expected soon. *Washington Post*. https://www.washingtonpost.com/politics/2023/05/09/biden-nursing-home-staff-mandates-expected-soon/
49. Werner RM, Konetzka RT, Grabowski DC, Stevenson DG. Reforming Nursing Home Financing, Payment, and Oversight. *N Engl J Med*. May 19 2022;386(20):1869-1871. doi:10.1056/NEJMp2203429