Testimony of R. Tamara Konetzka, PhD

Professor, Departments of Public Health Sciences and Medicine Biological Sciences Division University of Chicago

Submitted for the record at a hearing on: Caring for Seniors amid the COVID-19 Crisis

Before the United States Senate Special Committee on Aging May 21, 2020

Chairman Collins, Ranking Member Casey, and distinguished members of the Committee, thank you for the opportunity to testify today on the topic of caring for seniors with long-term care needs during the COVID-19 crisis.

My name is Tamara Konetzka. I am a professor of health economics and health services research at the University of Chicago. I have been researching long-term and post-acute care for 25 years. I have been the principal investigator on numerous federal grants and published studies that explore the quality of nursing home care and how public policy might improve it, how Medicare and Medicaid policy influence care access and quality, and the health consequences of increased provision of services in home- and community-based settings. I also serve on the technical expert panel that advises the Centers for Medicare and Medicaid Services on the Nursing Home Compare 5-star rating system that publicly reports nursing home quality.

The Prominence of Nursing Homes in the COVID-19 Pandemic

The high rates of COVID-19 cases and deaths in nursing homes have attracted much media attention and public alarm. A *New York Times* article in mid-April referred to nursing homes as "death pits" due to the seemingly uncontrollable spread of the virus through these facilities. At that time, nursing home staff and residents were estimated to account for one-fifth of all COVID-19-related deaths. Long-term care facilities are now estimated to account for one-third of deaths nationally and as much as one-half in many states.²

In some ways, the high rates of COVID-19 cases and deaths in nursing homes are not surprising: Nursing homes house, in close quarters, large numbers of people with multiple comorbidities who need hours of hands-on care on a daily basis. These realities of long-term care make social isolation impossible. Facilities are often understaffed and depend on Medicaid reimbursement for the majority of their residents. Existing staff gaps are exacerbated by pandemic-related absences for illness or child care. Thus, working staff members must often care for both COVID-positive and COVID-negative residents, increasing the probability of transmission.

Given asymptomatic spread and inadequate testing, staff often do not know which residents are infected. Nursing homes compete with hospitals for both testing supplies and personal protective equipment, still in short supply in many areas. With policymakers and the public initially focused on the spread of infection within hospital settings, nursing homes often lost that competition, putting both staff and residents at risk. These circumstances lend an aura of inevitability to the spread of COVID-19 in nursing home settings. Indeed, the first death reported was from a nursing home in Washington State that had a 5-star rating.

The challenges of avoiding the spread of the virus to nursing homes are exacerbated by the dual roles played by most of these facilities. They are providers of post-acute, rehabilitative care, and they are providers of long-term care. Although these two care activities may seem quite similar to the general public, the economics and the COVID-related risks are actually rather different.

Medicare pays relatively generously for post-acute care. The reality is that many nursing homes depend on these revenues to subsidize care of long-term care residents who are predominantly funded by Medicaid. The provision of post-acute care, however, involves shorter stays and more frequent interactions with hospitals, potentially increasing the risk of spreading the virus even if the post-acute care is not COVID-related. Directly accepting post-acute patients with COVID may help to sustain key relationships with hospitals but may simultaneously endanger vulnerable long-term care residents.

But is the spread of COVID-19 in nursing homes inevitable, or have some types of nursing homes managed better than others to avoid new infections from occurring? An early National Public Radio analysis³ of selected nursing homes in New York suggested that facilities which serve a higher proportion of nonwhite patients were more likely to experience COVID deaths. Perhaps surprisingly, that study did not find the expected negative relationship between the probability of such deaths and nursing home quality, as measured by the Nursing Home Compare 5-star ratings. Because the analysis sample was small, incomplete, and limited to New York, it is unclear how such results may generalize to other states and populations.

Analysis of the Relationship between Nursing Home Quality and Covid-19¹

In the past month, we set out to assess on a broader scale whether the pattern of COVID-19 cases and deaths in nursing homes appears to be random or connected to nursing home quality.

We used a sample of nursing homes from 12 geographically diverse states. We merged data from the Nursing Home Compare archives (for 2020 star ratings and some nursing home characteristics) and LTCFocus⁴ (for racial distribution and percent of residents on Medicaid as of 2017²) with states' publicly available lists of long-term care facilities with reported COVID-19

¹ This analysis was done in collaboration with Rebecca Gorges, a doctoral student at the Harris School of Public Policy, University of Chicago, whom I thank for spending countless hours extracting state case and death lists and painstakingly merging them with the Nursing Home Compare data, in addition to providing substantive input.

² Although the LTCFocus data are several years old, the payer mix and racial distributions of nursing homes do not change substantially over this amount of time.

cases or deaths. We relied upon data released as of May 13, 2020, in twelve states that had released case counts and, of those, eight states that had released death counts.³ For the case analysis, we analyzed a total of 5,527 nursing homes, of which 36% had at least one case. For the death analysis, we analyzed 3,461 nursing homes, of which 29% had at least one death. We calculated the percent of nursing homes with at least one case or death⁴ by Nursing Home Compare star ratings, profit status, and several resident characteristics.

Our analyses revealed three key results:

- 1. We found a strong and consistent relationship between race and the probability of COVID-19 cases and deaths (Figure 1). Nursing homes with the lowest percent white residents were more than twice as likely to have COVID-19 cases or deaths as those with the highest percent white residents.
- 2. We found no meaningful relationship between nursing home quality and the probability of at least one COVID-19 case or death. We measure quality using the Nursing Home Compare overall star rating. On average we see only a marginally lower probability of cases for nursing homes with higher quality ratings (Figure 2).

That overall finding masks considerable heterogeneity (Figure 3). In some states, such as Illinois, nursing homes with higher quality ratings (4 or 5 stars) were marginally *less* likely to have a case of COVID-19, but in other states, such as New Jersey, higher quality homes were marginally *more* likely to experience a case. Both the direction and strength of the relationship between star ratings and COVID-19 cases across and within states can best be characterized as inconsistent.

The Nursing Home Compare overall star rating is derived from scores across three domains of quality: inspections, staffing, and clinical quality measures. The *inspections* domain is based on the results from roughly annual visits of state surveyors to each facility to monitor compliance with requirements for participation in the Medicare and Medicaid programs. This domain is weighted most heavily in the overall ratings and is often considered the most objective. While the inspections-domain rating is more predictive than the overall star rating, the magnitude of the difference is not practically meaningful. The staffing domain and the clinical quality measures domain are not predictive.

3. We found no meaningful differences by profit status and only a weak relationship with Medicaid. We found no significant differences in the probability of COVID-19 cases by profit status, with for-profit nursing homes and not-for-profit nursing homes being equally likely to have cases (36%). A suggestive but weak relationship was found for the percent of residents on Medicaid, with nursing homes somewhat more likely to have cases if they were more dependent on Medicaid.

³ Case counts drawn from CA, CO, CT, GA, IA, IL, MA, NJ, NV, OH, TN, and OK; death counts drawn from CA, CO, CT, GA, IL, NJ, NV, and TN.

⁴ We focused on the existence of at least one case or death as opposed to the number of cases or deaths because variability in testing and reporting practices makes the counts less reliable.

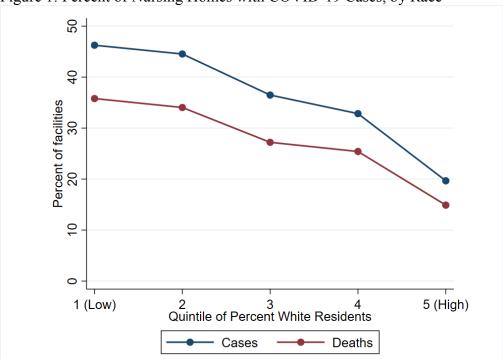


Figure 1: Percent of Nursing Homes with COVID-19 Cases, by Race

Note: The percent of nursing homes with at least one case based on CA, CO, CT, GA, IA, IL, MA, NJ, NV, OH, TN, and OK; the percent of nursing homes with at least one death based on CA, CO, CT, GA, IL, NJ, NV, and TN

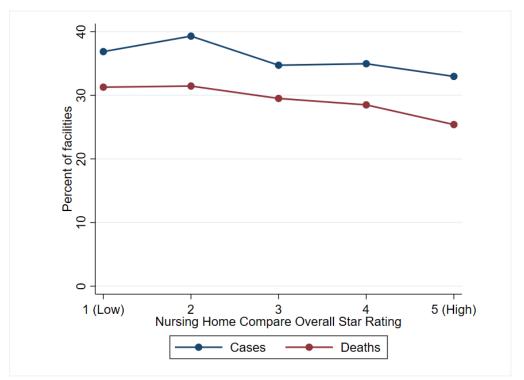


Figure 2: Relationship between Nursing Home Quality and COVID-19 Cases and Deaths

Note: The percent of nursing homes with at least one case based on CA, CO, CT, GA, IA, IL, MA, NJ, NV, OH, TN, and OK; the percent of nursing homes with at least one death based on CA, CO, CT, GA, IL, NJ, NV, and TN

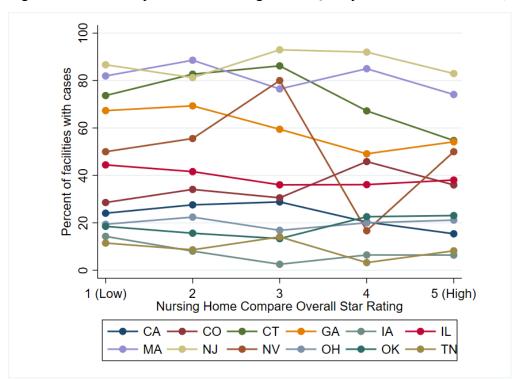


Figure 3: Relationship between Nursing Home Quality and COVID-19 Cases, by State

We conclude from this analysis that at least the standard quality measures do not distinguish which nursing homes ended up with cases and deaths. While some nursing homes undoubtedly had better infection control practices than others, the enormity of this pandemic, coupled with the inherent vulnerability of the nursing home setting, left even the highest-quality nursing homes largely unprepared.

And yet, the patterns of infections and deaths are not random. Consistent with racial and socioeconomic disparities in long-term care historically and in pandemic-related deaths currently, nursing homes with traditionally underserved populations are bearing the worst outcomes. Our results suggest that nursing homes serving nonwhite residents are most vulnerable to this pandemic. Because people who need nursing home care usually want to stay close to home, nursing homes are often a reflection of the neighborhoods in which they are located. Nursing homes serving predominantly non-white residents are more likely to be located in predominantly non-white neighborhoods and to draw staff from those neighborhoods. As these are the neighborhoods and the people being most affected by the pandemic, nursing homes in these areas are also most at risk.

Short-Term Measures to Reduce the Effects of the Pandemic on Nursing Homes

Given high rates of COVID-19 infection and death among long-term care facility residents and staff, reducing risk in long-term care facilities must be a top priority. I would place the most promising interventions into three categories: 1) Resources aimed directly at long-term care facilities; 2) Resources to enable prospective or current residents funded by Medicaid to receive services at home rather than in institutional settings; and 3) Requirements for data collection and transparency. I describe each of these in more detail below.

Funding and technical assistance resources aimed directly at long-term care facilities:

- Regular and rapid testing of all nursing home residents and staff, symptomatic or asymptomatic. Facilities must effectively separate COVID-infected and uninfected residents in order to prevent new infections. In the nursing home setting, test results that are delayed beyond (at maximum) a few days are not particularly useful, nor can facilities wait to test until symptoms appear. Separating residents into distinct wings or floors is ideal if possible. Transferring residents to separate facilities (established or temporary) should be considered, given urgent need to limit transmission, although there are known risks to transfer for frail older adults that must be weighed against the risks of transmission.
- Adequate numbers of staff. Adequate staffing is essential to achieving any reduction in infection risks in nursing home settings. Ideally, staff would be assigned to COVID-positive or COVID-negative residents and not go back and forth between them, which may require more staff than usual. Of course, understaffing in nursing homes was a problem long before the pandemic. Nurse aides, who provide the majority of direct care to nursing home residents, are generally paid minimum wage and often have no paid sick leave or health insurance. Registered nurses, who provide essential oversight and diagnostic functions as well as skilled care, would often rather work in hospitals which often offer higher wages and better working conditions.

Even prior to the current emergency, nursing homes rarely possessed the staff capacity to address much milder challenges than those posed by the COVID-19 pandemic. Nurses and nurse aides in these settings also share many of the same vulnerabilities experienced by in the communities where COVID-19 is most prevalent. These staff members are predominantly non-white, low-income, and dependent on public transportation. Many live in families and communities with other essential workers who are unable to work at home and practice social isolation. These staff members are more likely to be sick, to have caregiving responsibilities for children or other family members, and to be facing financial hardship. Some fear showing up to work and risking contracting the virus. Other may come to work despite feeling symptomatic due to a lack of paid sick leave, fear of job loss, or a sense of dedication when staff are desperately needed.

Under these circumstances, additional resources are critical. These should include paid sick leave, guaranteed coverage of health care costs, and hazard pay for nursing home staff. These may also include the use of hotel rooms for nursing home staff who do not want to risk infecting family members, similar to those provided for hospital staff in many areas.

It is also important to acknowledge the limitations of these measures. While improved pay, benefits, and lodging resources may help retain current staff, they may not suffice to recruit enough staff in time to handle a COVID-19 crisis. Thus, technical assistance in the form of temporary "surge teams" may also be needed to assist with measures to stem transmission and care for residents who are critically ill with COVID-19 may be necessary in many nursing homes.

• Availability and proper use of personal protective equipment (PPE) among nursing home staff, as well as related practices such as hand-washing. As is obvious from experience in the hospital setting, adequate PPE is critical to protect nursing home staff. As supply challenges begin to ease, nursing home settings must be a priority for these materials. Policymakers should not assume that hospital staff are in greater need than nursing home staff, as the level and duration of direct contact with COVID-positive patients may be greater for many nursing home staff. And having appropriate equipment is not always sufficient. Prior to the pandemic, inadequate infection control practices such as inadequate hand-washing and treatment of linens were the most commonly cited deficiencies by nursing home inspectors. Almost 40% of nursing homes were cited with inadequate infection control in 2017. Thus, technical assistance may be necessary to ensure training in best practices in infection control.

Based on our analysis of nursing home cases and deaths, I would argue that all nursing homes and other long-term care facilities are in urgent need of this assistance. Such assistance should not be delayed by debates about which facilities could have been better prepared. There is too much at stake in terms of the lives and well-being of our most vulnerable older adults. If scarce resources must be prioritized, the most immediate assistance should be provided to nursing homes that serve primarily non-white residents where the risk of cases and death are the greatest.

Resources to enable prospective or current residents funded by Medicaid to receive home-based services in place of institutional services.

Older adults in need of long-term care and their families often face the difficult decision between receiving services in a nursing home setting or receiving services at home. Families must weigh the level of need against the availability of caregivers in the home, their level of comfort with the type of care needed, the potential effects on employment, physical stress, and emotional stress of caregivers, the costs of care, the ease or difficulty of finding in-home help, and the preferences of both the care recipient and other family members. In the best of times, this is a difficult decision.

Over the past few decades, Medicaid coverage has markedly shifted toward increased home- and community-based services (HCBS) rather than services in the nursing home setting. This shift has removed some previous constraints around this decision for Medicaid recipients. Whereas low-income people who depend on Medicaid for their long-term care used to have little choice but to move to a nursing home if they needed extensive assistance, now more than half of all Medicaid long-term care funding goes to HCBS, with substantial variation by state and county. Much of this shift has been achieved through Section 1915(c) waivers, which allow

states to provide long-term care services through HCBS as long as costs do not exceed those under nursing home care. However, the number of waiver slots is generally capped to control expenditures, such that the number of beneficiaries who want HCBS might exceed availability.

COVID-19 has changed the costs and benefits of this difficult decision for families. On one hand, the risks of entering a nursing home have increased substantially. On the other hand, care at home has also become more complicated. It may be more difficult to find home care workers who are willing to enter people's homes and risk infecting themselves and their families. Families of the care recipient may be reluctant to have regular interaction with home care workers who are likely caring for multiple patients. Care recipients in the home setting may also face higher risks of hospitalization. Thus, even as the risks associated with institutionalization are at their highest, the probability of institutionalization may be growing.

To best help families in this situation, resources should be directed toward enabling them to avoid institutionalization during this high-risk time. For Medicaid recipients, the clearest policy lever to achieve this is to expand HCBS waiver programs, to make home-based care feasible for as many families as possible.

Requirements for data collection and transparency.

At times of crisis, issues of documentation and data collection often seem secondary or trivial relative to the urgent priority of saving lives. Accordingly, recent temporary waivers by the Centers for Medicare and Medicaid Services of some documentation requirements in nursing homes seem reasonable. Yet at times of crisis, some data collection and transparency issues become paramount. It remains critical that states require timely reporting of COVID-19 cases and deaths and, in turn, that states make that data available to the public. This is essential for three key reasons.

- Timely reporting enables resources to be directed where they are needed most. Outbreaks of COVID-19 in nursing homes are often a signal of the communities into which the virus is spreading. This may be a starting point for contact tracing, and enables states to identify which nursing homes might need the most immediate assistance.
- Over time, such reporting will enable researchers to study the spread of the virus, connect
 it to the policy response, and establish rigorously what worked and what didn't work.
 This information will be crucial to learn from COVID-19 and to improve our reaction to
 the next pandemic.
- Consumers must know the status of nursing homes they might be considering for care or in which a loved one already resides. As noted above, older adults in need of long-term care face particularly difficult decisions during the pandemic, weighing the need for care against the risk of infection in each potential care setting. Ideally, data on cases and infections would be released in a more consumer-friendly form than now available. Many states that release data simply list the name of a nursing home or sometimes the name and the county. For our study described above, we could harness the skills and time of academic researchers to connect the state-released case and death data to Nursing Home Compare. This is not feasible or straightforward for the typical consumer who may want a fuller picture of quality and staffing in the home they are considering. A full facility name and address/ZIP code should be minimally required so that consumers can connect the case lists to Nursing Home Compare information.

I classified the above measures as short-term measures because they are truly urgent and necessary. They do nothing, however, to change the underlying, systemic challenges to improving the quality of nursing home care and the lives of older adults who live in them. Long-term policy changes are also required.

Long-Term Measures to Improve Nursing Home Quality and Reduce Future Risk

The quality of nursing home care in the United States has been a longstanding challenge. Although many high-quality nursing homes exist and meaningful gains have been made, low quality and understaffing remain endemic. Why are solutions to low-quality nursing home care so elusive? First, given their health status, nursing home residents are ill-equipped to monitor their own care, to advocate for themselves, or to exert political influence. Family members are not always available to advocate on behalf of residents.

Second, the structure of nursing home payment is fragmented, uneven, and leads to systematic underfunding of essential care. About two-thirds of nursing home residents are dependent on Medicaid to pay for their care, at payment rates that often are lower than the costs of care. To the extent that adequate staffing and meaningful quality improvement require resources, high-quality care may be out of reach for some nursing homes. This is particularly true of nursing homes located in poor neighborhoods, where the limited resources of the nursing home are matched with the limited resources of families.

Given these challenges, how can nursing home quality be improved, and the consequences of future health crises, such as another pandemic, be minimized? I briefly discuss two of the most common approaches below.

Is More Regulation and Oversight the Answer?

Given that nursing home residents are often unable to advocate for themselves, regulation and oversight are necessary. Some regulations and monitoring have been temporarily relaxed during the pandemic, but it will be important to reinstate them once the crisis has passed. Regulation and oversight play the critical role of attempting to set a quality floor, avoiding the worst instances of abuse and neglect.

At the same time, regulation and oversight are limited in their effectiveness. Despite vast resources poured into regulation and oversight of nursing homes and some successes, poor quality of nursing home care is still common. Raising the quality of the lowest-quality facilities has proved to be exceedingly difficult; in study after study, quality improvement efforts have led to average improvements without changes in the bottom tier. Regulators are often reluctant to terminate the lowest-quality facilities if no alternatives exist in a neighborhood, prioritizing access over quality. For these reasons, I argue that *regulation and oversight are necessary but not sufficient* to improve the quality of nursing home care.

Prior to the pandemic, 40% of nursing homes were cited with deficiencies in their infection control practices.⁵ Enforcement of these regulations did little to prepare nursing homes for the pandemic. New regulations to increase focus on infection control are clearly warranted, but in resource-constrained nursing homes, it may be a zero-sum game; better infection control may come at the cost of focus on other critical aspects of care.

Is More HCBS the Answer?

One potential solution to low-quality nursing home care is to have fewer people in nursing homes. The increased availability of HCBS as an alternative to nursing home care is undoubtedly a good thing. All things equal, most people would prefer to age in place and not move to a nursing home. But rarely are all things equal. Even with preferences to stay at home, as an individual's needs for help become greater and greater, families sometimes make appropriate decisions to place an older adult in a nursing home, decisions that should be construed neither as a failure of the family nor of the system.

Well-intentioned stakeholders often see HCBS and nursing homes as simply competitors for funding and advocate for a higher and higher proportion of funding to be allocated toward HCBS. However, the need for nursing homes remains. For individuals who might otherwise be in nursing homes, home-based care can also be risky, entailing more frequent hospitalizations. We should wish for seniors that they be able to receive the care that they need in the right place at the right time, and sometimes that place may be a nursing home. We should fund HCBS, but we also need to fund nursing homes such that seniors can receive the care that they need if a nursing home admission becomes necessary.

Conclusions

Most potential solutions, including increased regulation and further expansion of HCBS, are inherently limited in the extent to which they can produce meaningful change in nursing home quality and preparedness for the rest of this pandemic or the next one. To solve the challenge on a more fundamental level, the structure and level of nursing home funding, or long-term care funding more generally, has to change. At least, Medicaid rates need to be substantially higher to address our chronic under-funding of this critical health care sector. At best, the fragmented system of state-specific payment rates and cross-subsidization from Medicare would be eliminated altogether, consolidating long-term care payment into one consistent program.

Those of us who study long-term care are accustomed to hoping for fundamental change and not seeing it. In this case, however, there may be a separate impetus to revisit the funding structure of long-term care. Much of the nursing home industry relies on private-pay revenues and Medicare reimbursement to stay afloat in the presence of large Medicaid populations. During the pandemic, at least in the short run, these revenue sources have diminished or disappeared. Elective surgeries in hospitals, a major source of lucrative post-acute referrals for nursing homes, have been put on hold in most hospitals. New private-pay residents, who can presumably afford alternatives, are more likely to avoid nursing home placement during the pandemic. If nursing homes cannot survive these negative revenue shocks, a fundamental restructuring of how we pay for nursing home care may be unavoidable.

Absent this more fundamental change, I expect there will be more regulatory focus on infection control, which may help marginally to institute better practices. Those nursing homes that are cited with deficiencies in infection control could benefit from working with Quality Improvement Organizations for technical assistance. The pandemic has made these issues suddenly less hypothetical, and approaches to this issue are likely to improve somewhat. The underlying challenges to improving nursing home quality will remain. But, hopefully, an emergency influx of resources will have addressed the immediate challenges of securing

adequate testing, staffing, and protective equipment to minimize further transmission of the virus and related deaths in nursing homes.

Thank you for this opportunity to share my thoughts and expertise on the critical question of caring for older adults with long-term care needs during the COVID-19 pandemic and beyond.

References

- 1. Stockman F, Richtel M, Ivory D, Smith M. 'They're Death Pits': Virus Claims at Least 7,000 Lives in U.S. Nursing Homes. *New York Times*. April 17, 2020.
- 2. Yourish K, Lai KR, Ivory D, Smith M. One-Third of All U.S. Coronavirus Deaths Are Nursing Home Residents or Workers. *New York Times*. May 11, 2020.
- 3. Shapiro J, Jingnan H, Benincasa R. In New York Nursing Homes, Death Comes To Facilities With More People Of Color. *National Public Radio*. April 22, 2020.
- 4. Long-Term Care Focus (LTCFocus). Shaping Long Term Care in America Project at Brown University funded in part by the National Institute on Aging (1P01AG027296). LTCFocus.org. Accessed May 1, 2020.
- 5. Kaiser Family Foundation. Percent of Certified Nursing Facilities with Top Ten Deficiencies. 2020. https://www.kff.org/other/state-indicator/percent-of-certified-nursing-facilities-with-top-ten-deficiencies-2014. Accessed May 17, 2020.
- 6. Davidson C, Loganathan S, Bishop L, et al. Scalability of an IT Intervention to Prevent Pressure Ulcers in Nursing Homes. *J Am Med Dir Assoc.* 2019;20(7):816-821 e812.
- 7. Konetzka RT, Grabowski DC, Perraillon MC, Werner RM. Nursing home 5-star rating system exacerbates disparities in quality, by payer source. *Health Aff (Millwood)*. 2015;34(5):819-827.
- 8. Perraillon MC, Konetzka RT, He D, Werner RM. Consumer Response to Composite Ratings of Nursing Home Quality. *Am J Health Econ.* 2019;5(2):165-190.
- 9. Gorges RJ, Sanghavi P, Konetzka RT. A National Examination Of Long-Term Care Setting, Outcomes, And Disparities Among Elderly Dual Eligibles. *Health Aff* (Millwood). 2019;38(7):1110-1118.
- 10. Wysocki A, Kane RL, Dowd B, Golberstein E, Lum T, Shippee T. Hospitalization of elderly Medicaid long-term care users who transition from nursing homes. *Journal of the American Geriatrics Society*. 2014;62(1):71-78.
- 11. Wysocki A, Kane RL, Golberstein E, Dowd B, Lum T, Shippee T. The association between long-term care setting and potentially preventable hospitalizations among older dual eligibles. *Health services research*. 2014;49(3):778-797.

1. Percent nursing facilities with cases/deaths by state

	% with 1+ cases	% with 1+ deaths					
CA	22.46	15.42					
CO	36.28	28.32					
CT	71.16	62.33					
GA	61.73	27.65					
IA	7.37						
IL	39.56	27.80					
MA	80.90						
NJ	86.50	79.34					
NV	46.27	20.90					
OH	19.85						
OK	18.46						
TN	9.49	4.75					

Case/death data from state department of health websites, Collected 5/13/2020

(Where death count rows are missing, states did not release facility level death data that we could find. Also, some differences between states may be due to the differing data censoring policies of the state (ex. MA doesn't list facilities with only one case/death for privacy reasons)

2. Breakdown of Quintile of % White Residents by state:

	1 (Low)	2	3	4	5 (High)
CA - Cases	30.19	25.47	24.06	22.64	8.96
CA - Deaths	22.17	16.51	17.92	13.21	6.13
CO - Cases	55.00	37.50	33.33	27.50	23.08
CO - Deaths	37.50	27.50	30.77	22.50	20.51
CT - Cases	90.70	81.40	64.29	75.00	43.90
CT - Deaths	86.05	74.42	54.76	61.36	34.15
GA - Cases	72.06	63.64	57.58	68.66	48.48
GA - Deaths			28.79	22.39	19.70
IA - Cases *	12.05	14.29	3.69		
IA - Deaths					
	79.85				
IL - Deaths	67.91	34.33	18.66	9.70	6.02
MA - Cases	87.84	85.14	87.84	76.00	72.22
MA - Deaths					
	89.55				86.36
NJ - Deaths					77.27
NV - Cases					
NV - Deaths			20.00		11.11
	26.86	22.29	21.26	15.61	11.49
OH - Deaths					
OK - Cases	17.54	16.36	18.18	20.00	16.36
OK - Deaths					
TN - Cases					
TN - Deaths	10.34	3.51	0.00	1.75	5.26

Quintiles of race calculated separately for each state
* IA divided in to only 3 groups: group 3 contains the 60% of facilities where %white>97

Happy to help! Rebecca

Rebecca J. Gorges PhD Student rjgorges@uchicago.edu
Harris School of Public Policy
Graduate Program in Health Administration and Policy
The University of Chicago