

Waiving Medicaid Regulations During a Public Health Crisis: Identifying Heterogeneous Effects of Suspending Pre-Admission Screening Requirements on COVID-19 Deaths



RESEARCH

JASON SEMPRINI 

BRIAN KASKIE 

**Author affiliations can be found in the back matter of this article*



ABSTRACT

Background: During the COVID-19 Public Health Emergency, states were authorized to waive Pre-Admission Screening Resident Review (PASRR), a federal regulation requiring all individuals be evaluated before admission into a federally qualified nursing facility. We suspect states waived PASRR to reallocate resources from admission towards infection control and outbreak mitigation. However, by waiving PASRR and fast-tracking admissions, vulnerable elders may have been exposed to COVID-19 and unexpectedly placed at substantial risk for increased morbidity.

Methodology: We reviewed all COVID-19 Medicaid emergency waiver requests to identify states waiving PASRR. We then analyzed daily, state-level COVID-19 deaths with a panel regression model, controlling for state and time fixed effects, and daily case rates. Finally, we expanded the model to identify heterogeneous effects shaped by market and administrative oversight factors.

Results: Suspending PASRR led to significant declines in state COVID-19 deaths (–2.3 deaths per 100,000 population, $p < 0.001$). However, the effect waiving PASRR varied by excess nursing bed capacity (7.3 deaths per 100,000 population, $p = 0.024$) and historical PASRR deficiencies (0.9 deaths per 100,000, $p = 0.009$).

Implications: Within the first month of the COVID-19 emergency invocation, nearly all states suspended PASRR, which our estimates suggest averted 7,600 deaths nationwide. However, we found that greater pre-emergency bed availability and less administrative oversight may have reduced the effectiveness of a PASRR waiver. While future research should aim to understand the mechanisms for such heterogeneity, immediate concerns relate to the variation, both between and within states, for adhering to a critical regulation protecting older adults.

CORRESPONDING AUTHOR:

Jason Semprini

University of Iowa, US

jason-semprini@uiowa.edu

KEYWORDS:

covid-19; pre-admission; screening; regulations; oversight

TO CITE THIS ARTICLE:

Semprini, J and Kaskie, B. 2022. Waiving Medicaid Regulations During a Public Health Crisis: Identifying Heterogeneous Effects of Suspending Pre-Admission Screening Requirements on COVID-19 Deaths. *Journal of Long-Term Care*, (2022), pp. 15–21. DOI: <https://doi.org/10.31389/jltc.90>

As the COVID-19 pandemic threatened to intensify existing health disparities, early attention shifted to long-term care (LTC) (Okonkwo *et al.*, 2020). Along with age, poverty, and chronic disease being strongly associated with poor outcomes, the added layer of communal living created a perfect storm which put skilled-nursing facility residents at serious risk (Barnett and Grabowski, 2020; Grabowski and Mor, 2020; Konetzka and Gorges, 2021; Ouslander and Grabowski, 2020). This risk motivated policy-makers to relax regulations, with the goal of increasing capacity within these facilities. One critical approach was to waive pre-admission screening requirements through Medicaid Section 1135 Waiver authority (DHHS 2020; Tetrick 2019). Pre-Admission Screening Resident Review (PASRR) is a federal regulation requiring that all individuals be evaluated for intellectual disability, mental illness, or dementia before admission into a federally qualified nursing facility as to assure that facilities developed an appropriate care plan for residents with special care needs associated with these diagnosed conditions (Madhusoodanan *et al.*, 2014). We suspect states waived PASRR to reallocate resources towards infection control. However, waiving PASRR may have fast-tracked admissions, potentially increasing COVID-19 exposure to a particularly vulnerable population of NF residents.

Despite being a federal regulation, we suspect the impact of waiving PASRR may varies across states and between facilities because of pre-existing adherence of the regulation (PASRR TAC, 2019; Linkins *et al.*, 2006; Snowden, Piacitelli and Koepsell, 1998). Indeed, prior to COVID 19, some states appeared to vigorously uphold the admission standard relative to others. Such variation could influence the efficacy of a PASRR waiver, but also illuminate pre-existing structural issues relating to LTC facility oversight.

SIGNIFICANCE

Previous research has refuted the claim that LTC quality measures or historical deficiencies were associated with adverse COVID-19 outcomes (Grabowski, 2020). Rather, it appears, staffing levels and overall community spread have identified as the greatest determinants of outbreaks and mortality in LTC facilities (Konetzka and Gorges, 2021). However, less attention has been given to the role of oversight as a mediating factor in state's ability to adopt infection control measures. More specifically, how did pre-pandemic oversight and accountability measures influence policies aimed at preventing mortality for older adults most vulnerable to COVID-19 deaths. To address the evidence gap, this study aims to first estimate the causal effect of waiving PASRR on COVID-19 deaths and then identify potential heterogeneity in the effect of suspending PASRR.

METHODOLOGY

The effect of waiving PASRR on COVID-19 outcomes was evaluated by constructing a state-level panel regression model. By controlling for state and day fixed effects, this approach allows us to account for any unobserved confounders specific to each state (i.e. time invariant ideological differences), as well as time-specific factors affecting the entire country. Critical to unbiased estimation is the assumption that no other time-varying differences exist between states with different PASRR waiver decisions (Collischon and Eberl, 2020). Undoubtedly, the myriad of state and local COVID-19 policies and behaviors present a threat to this study's inference. We address this by adding daily COVID-19 case rates to the panel regression. This identification strategy rests on the assumption, that conditional on COVID-19 cases, there are no time-variant differences between states adopting or not adopting PASRR waivers. More simply, we assume that any unobserved activity related to social distancing is captured by the daily rate of COVID-19 cases. The panel regression model is specified as follows:

$$Y_{it} = \beta \text{PASRR}_{it} + \text{CASES}_{it} + L'_t + S'_i + \varepsilon_{it}$$

Where, Y_{it} is a measure of COVID-19 deaths per capita in state = i , at day = t (NYT, 2020). L'_t is a set of time dummy variables, capturing unobserved variation for each day = t . S'_i is a set of state-level dummy variables, capturing unobserved variation for each state = s . CASES_{it} is a measure of daily COVID-19 cases per capita (NYT, 2020). ε_{it} represents the idiosyncratic error term. PASRR_{it} is a binary variable, indicating if state = s , adopted a PASRR waiver by day = t . If the identifying assumption, $E[\varepsilon_{it} / \text{CASES}_{it}, L'_t, S'_i] = 0$, is satisfied, β is consistently estimated as the effect of waiving PASRR on COVID-19 deaths.

To validate the analytical model that a PASRR waiver affects COVID-19 deaths, a vector of binary variables representing two broad PHE waiver categories (delaying administrative reporting requirements and delaying fair hearing requirements for appealing Medicaid decisions) are added to the model. Because we do not expect administrative processes or fair hearing delays to impact COVID-19 deaths in long-term care (LTC) facilities, any significant estimate could signal unobserved confounding in our primary model. All models utilize robust standard errors, clustered at the state level, to account for heteroskedasticity and serial autocorrelation. PASRR waiver decisions and associated adoption dates were extracted from CMS (Centers for Medicare and Medicaid Services) correspondence with state Medicaid directors (2020).

The heterogeneity analysis evaluates how a PASRR waiver is influenced by pre-pandemic state-level market and oversight factors. We hypothesize multiple avenues

for potential heterogenous effects of waiving pre-admission screening. First, we use CMS Skilled-Nursing Facility (SNF) data to account for different levels of for-profit skilled nursing facilities, a ratio of nursing home beds per population over age 65, skilled nursing facilities located in a hospital, and the average level of unfilled beds in 2019 (CMS, 2019). Next, we aggregate 2019 facility-level PASRR deficiencies to the state-level (CMS, 2019). Finally, using information from the CMS Minimum Data Set, each state’s PASRR activity were modelled to measure the proportion of LTC residents screened in 2019 (Minimum Data Set, 2020). Building off the primary panel regression model, the following specification identifies heterogenous effects of suspending PASRR on COVID-19 deaths:

$$Y_{it} = \alpha'PASRR_{it} (BEDS_s + M'_s + D_s + HIST_s) + CASES_{it} + L'_t + S'_i + \epsilon_{it}$$

This specification includes $BEDS_s$, a variable measuring the average level of nursing home beds per capita NOT FILLED in 2019. M'_s represents a vector of state-level LTC market variables (i.e. the proportion of nursing homes located in a hospital, the proportion of for-profit LTC facilities, ratio of LTC beds per population above age 65). D_s represents the number of PASRR deficiencies reported in 2019 for each state. $HIST_s$ is a continuous variable, measuring the proportion of LTC residents screened for PASRR in 2019. Note, the B-coefficient in the original

model is replaced by γ , a vector of estimates modelling the interaction between adopting PASRR and the specified variables. In addition to reporting the coefficient estimates, we report the robust Wald F-statistics as a measure of assessing model fit. Alternative specifications were constructed as sensitivity analyses, including a placebo check to test for pre-treatment differences between states waiving and not waiving PASRR. These alternative methodologies and results are fully described and discussed in the supplemental file.

RESULTS

Our regression model estimates suggest that adopting a PASRR waiver averted 2.3 COVID-19 deaths per 100,000 population (**Table 1**: Est. = -2.29, $p < 0.001$). Aggregated to the population level, we estimate that waiving PASRR regulations through Section 1135 authority reduced total COVID-19 deaths by approximately 7,600, or 12% of total deaths during the timeframe of this analysis. **Figure 1** visually depicts the daily unadjusted death rates between states adopting and not adopting a PASRR waiver throughout the first 104 days of the PHE. See the supplementary file for full set of results.

In our second set of analyses, which allow the effect of a PASRR waiver to vary with state market and oversight features, we find significant heterogeneity (**Table 1**; **Figure 2**).

	1	2	3
PASRR Waiver	-2.2943***	-1.9416***	
	-0.407	-0.473	
Fair Hearing Waiver		-0.5066	
		-0.526	
Administrative. Waiver		0.0659	
		-0.054	
<i>PASRR WAIVER INTERACTION</i>			
Available Beds			7.3101*
			(3.443)
LTC Beds per Older Age Pop.			0.1386
			(0.116)
Historical Screening (%)			-5.0104***
			(1.191)
Deficiencies per LTC Bed			0.8856**
			(0.326)
Robust Wald F-Test	321.85	245271.42	1219.05
P (df)	<0.0001 (2)	<0.0001 (7)	<0.0001 (7)

Table 1 Panel Regression Estimates (Fixed-Effect Specification).

Table 1 reports the estimates from multiple panel regression models, with fixed-effect specifications. 1) Primary specification, Panel regression with fixed effects, 2) Panel regression with fixed effects and additional waiver categories, 3) panel regression model with fixed-effect specifications identifying heterogeneous effects (interactions). Control variables excluded from table for brevity. Coefficients on In-Hospital LTC Beds (%) and For-Profit LTC Beds (%) were less than 0.0005 and reported as null, and were excluded from this table for brevity. See supplementary file for full regression results. Model fit was tested against the null using robust Wald F-Test. Per capita measurements are reported as per 100,000 population. Standard errors in parentheses.

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

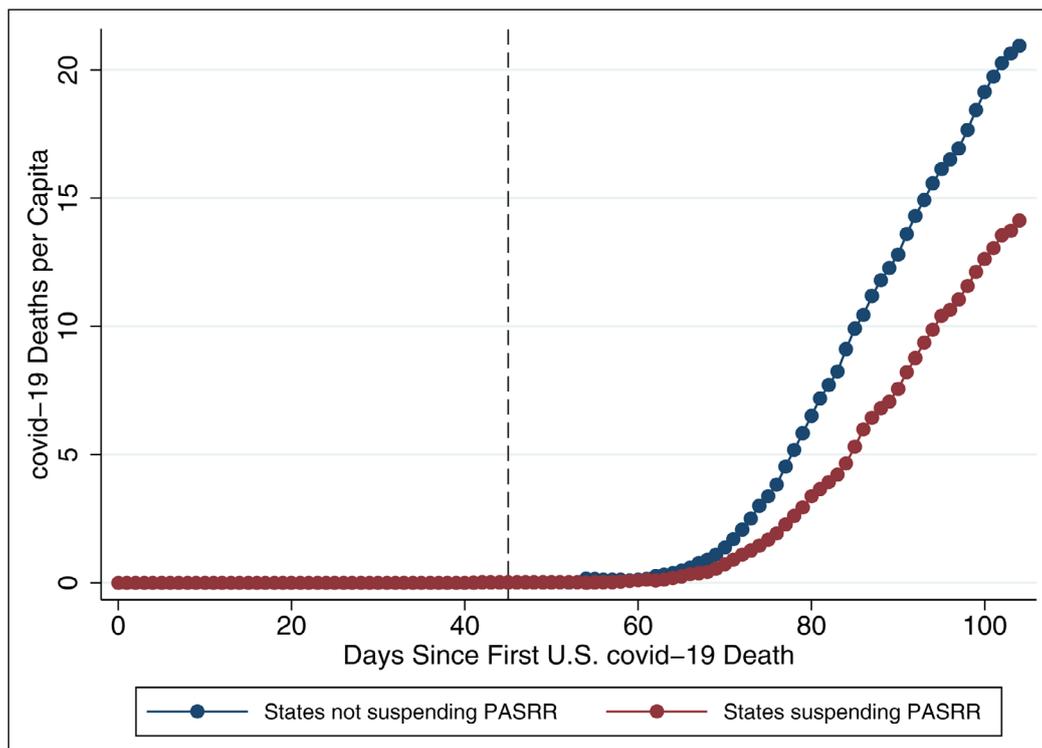


Figure 1 Unadjusted COVID-19 Deaths by PASRR Waiver Status.

Figure 1 visually depicts the daily unadjusted death rates between states adopting and not adopting a PASRR waiver throughout 104 days after the first reported COVID-19 cases (1/29/20-5/12/20). The vertical dotted line at day 44 marks the March 13th Emergency Declaration (Federal Register 15337 2020) authorizing states to request Section 1135 Waivers. As more states adopt the PASRR waiver a clear gap emerges. Figure 1 extends 30 days after the final state adopted a PASRR waiver in the first round of Section 1135 requests. The entire panel consists of 51 groups (50 states and D.C.) across 105 days.

First, contrary to our hypotheses, we find that market level LTC factors (i.e. beds per population) have no significant association with the effect of a PASRR waiver on COVID-19 deaths (*Table 1*). In fact, the estimated coefficients for the proportion of for-profit beds and proportion of beds in a hospital were essentially null (Est. < 0.0005). However, while total beds per capita does not appear to influence a PASRR waiver's effect, the pre-pandemic level of beds available has a positive association with a PASRR waiver's impact on COVID-19 deaths (Est. = 7.3, $p < 0.05$). This result suggests that in states with fewer beds to fill, PASRR maintains its negative association with COVID-19 deaths. But, as the level of unfilled beds increases, waiving PASRR loses its protective effect.

We also find interesting heterogeneity with regards to oversight measures and their association with a PASRR waiver. States with higher proportions of LTC residents screened experience a greater reduction in COVID-19 deaths due to waiving PASRR ($\alpha = -5.0$, $p < 0.001$). In addition, in states with higher 2019 PASRR related deficiencies (per LTC bed), a PASRR waiver is associated with an increase in COVID-19 deaths (Est. = 0.89, $p < 0.01$). Together, these two results suggest that states with greater historical adherence to PASRR regulations experienced the greatest reduction in COVID-19 deaths as a result of waiving the regulation. Conversely, states with more deficiencies per bed and fewer proportion of

residents screened fail to realize the potential life-saving effect of suspending PASRR during the initial months of the Public Health Emergency.

DISCUSSION

States adopting a waiver to suspend PASRR requirements at LTC facilities during the initial months of the pandemic may have averted thousands of deaths. But, does this finding warrant recommending states suspend PASRR in future public health emergencies? Or even further, should these results encourage states not to reestablish PASRR at the conclusion of the COVID-19 emergency? Historically, this critical regulation protecting older adults with severe intellectual or mental illnesses receives relatively little attention from the research and health community. This lack of understanding poses a threat as states begin relaxing pandemic response policies and potentially codifying emergency measures into law. Given the cost of PASRR adherence and the prevalence of PASRR waivers, states and LTC facilities may be inclined to delay reimplementing the regulation. Illuminating the mechanistic effect of suspending pre-admission practices can inform evidence-based policy to improve outcomes for vulnerable populations served by state Medicaid systems, in this pandemic and beyond.

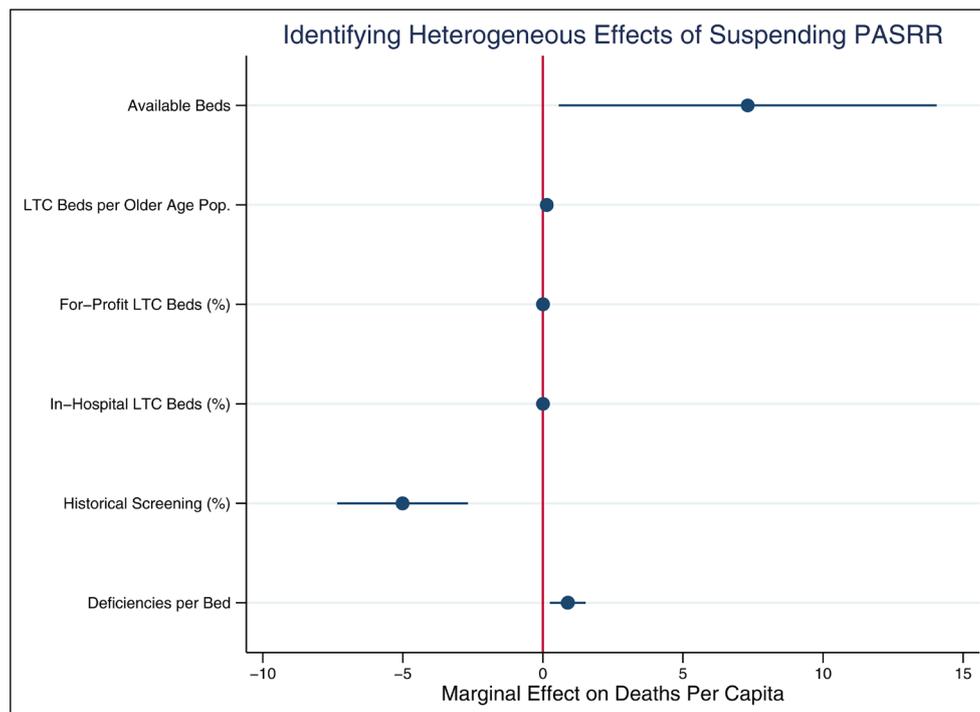


Figure 2 Panel Regression Estimates Identifying Heterogeneous Effects.

Figure 2 visually depicts the estimated coefficients from the panel regression, with fixed-effect specifications, identifying heterogeneous effects of waiving PASRR on COVID-19 deaths. The vertical red line represents a null effect. Each dot represents a point estimate, with the error bars depicting the 95% confidence interval of the estimated effect. Error bars not crossing zero are deemed significantly different than zero at $p < 0.05$. See Table 1 for effect and standard error estimates.

The following discussion illuminates the implications for future policy by elaborating on the potential mechanisms of suspending PASRR at the onset of the COVID-19 pandemic.

Broadly speaking, these results seem to affirm the inclusion of suspending PASRR as blanket waiver granted under Section 1135 authority (DHHS, 2020). By avoiding the cost of screening and reviewing new admissions for appropriate services, LTC facilities could reallocate resources and staff towards infection control. On average, the benefits of greater capacity seemed to outweigh the costs of potentially fast-tracking new admissions. Yet, the heterogeneity analysis highlights broader policy concerns for both this pandemic and beyond.

The heterogeneity results suggest that states with “worse” PASRR adherence before the pandemic were less likely to experience a reduction in deaths due to suspending the regulation. One mechanism for such heterogeneity is that suspending PASRR did not lead to any changes in LTC capacity, because those facilities were already operating as if PASRR were suspended. In these states, if PASRR screening was low, there is less potential benefit from suspending the regulation. However, it could also be true that facilities had lower PASRR adherence because of underlying capacity constraints. This lack of capacity could also be correlated with a facility’s ability to respond to a public health emergency. It is also important to consider a state’s role in PASRR adherence, given the unique organizational relationship between state PASRR

agencies and CMS (PASRR TAC, 2019). We are confident in our estimates that show previous PASRR deficiencies and screening rates are associated with a PASRR waiver’s impact, but we are less confident in what exactly the PASRR deficiencies and screening rates are measuring. Are these true indicators of facility level non-compliance? Or, are these measures confounded by state capacity for oversight and accountability?

In light of such ambiguity, we believe our evidence warrants policies to expand capacity and oversight, specifically related to PASRR compliance. While the potential confounding between capacity and oversight at the state and LTC facility level may hinder our ability to dissect the mechanistic effect of suspending pre-admission policies, the fact that such confounding impacts COVID-19 deaths should motivate policy-makers to immediately expand oversight capacity. This recommendation fits within the context of reports declining oversight over the past year (Steel-Fisher *et al.*, 2021; Stevenson and Cheng, 2021).

Yet, the true implications of our study span beyond the pandemic. PASRR was designed to ensure vulnerable, older adults with dementia, intellectual disabilities, and mental illness are receive appropriate services in the least restrictive setting (Tetric, 2019). This population of older adults are not only the most vulnerable to COVID-19, but also adverse outcomes caused by extensive isolation and delays in community-based care. The fact that states differ so dramatically

in baseline PASRR adherence should motivate efforts to ensure that PASRR compliance exceed pre-pandemic levels at the conclusion of the public health emergency. Unfortunately, our results can only hypothesize, rather than directly test and confirm, that PASRR oversight would affect outcomes outside of the pandemic. We leave the research question of whether increasing state oversight capacity would causally improve the health of adults living in long-term care facilities to future investigators. Finally, the Health Services Research community must recognize the critical importance of effective oversight and accountability for improving quality of care for older adults. While research investigating the effect of staffing ratios and quality scores are commonplace, evidence on the impact of monitoring and enforcement remains incomplete. At both the facility and state-level, failing to quantify the causes and costs of poor oversight will not only slow implementation of innovative health system reforms but most importantly, perpetuate health inequities across the aging spectrum.

CONCLUSION

Seemingly lost in the shuffle of state policy responses to the COVID-19 pandemic, Section 1135 waivers, specifically waivers suspending Pre-Admission Screening and Resident Review (PASRR), appeared to reduce COVID-19 deaths in the early months of the pandemic. We believe this research is the first to evaluate the impact of CMS waivers during the COVID-19 pandemic, but moreover, adds to a limited evidence base for PASRR regulations more broadly. While future research should aim to understand the mechanisms for the described heterogeneity, immediate concerns relate to the inequities, both between and within states, for adhering to a critical regulation protecting older adults. Without a doubt, LTC residents faced the greatest risks during the COVID-19 pandemic. And while community spread, rather than state or LTC facility characteristics, were the greatest determinant of outbreaks and deaths (Konetzka and Gorges, 2021), our study reiterates the critical role of evidence-based Medicaid innovation. And, just as the decision to suspend PASRR via waiver diffused across the country, hopefully the findings in this study lead to greater diffusion of PASRR compliance, or at least, greater capacity to comply.

ADDITIONAL FILE

The additional file for this article can be found as follows:

- **Supplemental File.** PASRR Waivers and COVID-19 Deaths. DOI: <https://doi.org/10.31389/jltc.90.s1>

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR AFFILIATIONS

Jason Semprini  orcid.org/0000-0002-0375-8090
University of Iowa, US

Brian Kaskie  orcid.org/0000-0003-0887-854X
University of Iowa, US

REFERENCES

- Barnett, ML** and **Grabowski, DC**. 2020. Nursing Homes Are Ground Zero for COVID-19 Pandemic. *JAMA Health Forum*, 1(3): e200369. DOI: <https://doi.org/10.1001/jamahealthforum.2020.0369>
- Centers for Medicare and Medicaid Services (CMS)**. 2019. *CMS Compare, Skilled Nursing Facilities*.
- Centers for Medicare and Medicaid Services (CMS)**. 2020. *CMS Approves First State Request for 1135 Medicaid Waiver in Florida*. Available at: <https://www.cms.gov/newsroom/press-releases/cms-approves-first-state-request-1135-medicare-waiver-florida>.
- Collischon, M** and **Eberl, A**. 2020. Let's Talk About Fixed Effects: Let's Talk About All the Good Things and the Bad Things. *KZfSS Kölner Zeitschrift Für Soziologie Und Sozialpsychologie*, 72(2): 289–299. DOI: <https://doi.org/10.1007/s11577-020-00699-8>
- Federal Register 15337**. 13 March 2020. Proclamation No. 9994: 85.
- Grabowski, DC** and **Mor, V**. 2020. Nursing Home Care in Crisis in the Wake of COVID-19. *JAMA*, 324(1): 23. DOI: <https://doi.org/10.1001/jama.2020.8524>.
- Konetzka, RT** and **Gorges, RJ**. 2021. Nothing Much Has Changed: COVID-19 Nursing Home Cases and Deaths Follow Fall Surges. *Journal of the American Geriatrics Society*, 69(1): 46–47. DOI: <https://doi.org/10.1111/jgs.16951>
- Linkins, KW, Lucca, AM, Housman, M** and **Smith, SA**. 2006. Use of PASRR Programs to Assess Serious Mental Illness and Service Access in Nursing Homes. *Psychiatric Services*, 57(3): 325–332. DOI: <https://doi.org/10.1176/appi.ps.57.3.325>
- Madhusoodanan, S, Nwedo, SA, Brenner, R** and **Mirza, O**. 2014. Preadmission Screening and Resident Review (PASRR) regulation and its implications for patients, hospitals, nursing homes, and the taxpayers. *Annals of Clinical Psychiatry: Official Journal of the American Academy of Clinical Psychiatrists*, 26(2): 83–87. DOI: <https://doi.org/10.3109/10401230009147093>
- Minimum Data Set (MDS)**. 2020. *Minimum Data Set (MDS) 3.0 Resident Assessment Instrument (RAI) Manual*. Centers for Medicare and Medicaid Services.
- The New York Times (NYT)**. (2021). Coronavirus (Covid-19) Data in the United States. <https://github.com/nytimes/covid-19-data>.

- Okonkwo, NE, Aguwa, UT, Jang, M, Barré, IA, Page, KR, Sullivan, PS, Beyrer, C and Baral, S.** 2020. COVID-19 and the US response: Accelerating health inequities. *BMJ Evidence-Based Medicine*. DOI: <https://doi.org/10.1136/bmjebm-2020-111426>
- Ouslander, JG and Grabowski, DC.** 2020. COVID-19 in Nursing Homes: Calming the Perfect Storm. *Journal of the American Geriatrics Society*, 68(10): 2153–2162. DOI: <https://doi.org/10.1111/jgs.16784>
- PASRR Technical Assistance Center.** 2019. 2019 PASRR National Report: A review of Preadmission Screening and Resident Review (PASRR) Programs, 50. Available at: <https://www.medicaid.gov/medicaid/long-term-services-supports/downloads/2019-pasrr-national-report.pdf>.
- Snowden, M, Piacitelli, J and Koepsell, T.** 1998. Compliance with PASARR recommendations for Medicaid recipients in nursing homes. Preadmission Screening and Annual Resident Review. *Journal of the American Geriatrics Society*, 46(9): 1132–1136. DOI: <https://doi.org/10.1111/j.1532-5415.1998.tb06653.x>
- Steel-Fisher, GK, Epstein, AM, Grabowski, DC, Maddox, KEJ, Orav, EJ and Barnett, ML.** 2021. Persistent challenges of COVID-19 in skilled nursing facilities: The administrator perspective. *Journal of the American Geriatrics Society*, n/a(n/a). DOI: <https://doi.org/10.1111/jgs.17062>
- Stevenson, DG and Cheng, AK.** 2021. Nursing home oversight during the COVID-19 pandemic. *Journal of the American Geriatrics Society*, n/a(n/a). DOI: <https://doi.org/10.1111/jgs.17047>
- Tetrick, F.** 2019. PASRR Activities During an Active Emergency. *PASRR Technical Assistance Center*, 3. Available at: https://23c2beb0-a2ae-4e75-aa9d-4b9d2de03e73.filesusr.com/ugd/d693e6_115b39175cd14bf4bc278138e79485.pdf.
- U.S. Department of Health and Human Services (DHHS).** 2020. 1135 Waiver. Legal Authorizes. Office of the Assistant Secretary for Preparedness and Response. Available at: <https://www.phe.gov/emergency/news/healthactions/phe/Pages/default.aspx>.

TO CITE THIS ARTICLE:

Semprini, J and Kaskie, B. 2022. Waiving Medicaid Regulations During a Public Health Crisis: Identifying Heterogeneous Effects of Suspending Pre-Admission Screening Requirements on COVID-19 Deaths. *Journal of Long-Term Care*, (2022), pp. 15–21. DOI: <https://doi.org/10.31389/jltc.90>

Submitted: 16 April 2021 Accepted: 10 December 2021 Published: 24 January 2022

COPYRIGHT:

© 2022 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported International License (CC BY-NC-ND 3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by-nc-nd/3.0/>.

Journal of Long-Term Care is a peer-reviewed open access journal published by LSE Press.