JAMDA 24 (2023) 113–118

JAMDA

journal homepage: www.jamda.com

Original Study

Impact of Implementing the Preferences for Everyday Living Inventory on Nursing Home Survey Deficiencies

Miranda C. Kunkel LMSW [a,*], John R. Bowblis PhD [b,c], Jane Straker PhD, MGS [b], Kimberly Van Haitsma PhD, FGSA [d,e], Katherine M. Abbott PhD, MGS [a,b]

[a] Department of Sociology and Gerontology, Miami University, Oxford, OH, USA
[b] Scripps Gerontology Center, Miami University, Oxford, OH, USA
[c] Department of Economics, Miami University Farmer School of Business, Oxford, OH, USA
[d] The Pennsylvania State University, Program for Person Centered Living Systems of Care, University Park, PA, USA
[e] The Polisher Research Institute at Abramson Senior Care, Blue Bell, PA, USA

Keywords:
Person-centered care
preferences
nursing homes
quality
star rating
deficiencies

A B S T R A C T

Objectives: The purpose of this study is to expand on previous work testing the relationship between person-centered care (PCC) and quality outcomes in the nursing home (NH) setting. We explore if the Preferences for Everyday Living Inventory (PELI) implementation is a predictor of NH quality, as defined by deficiencies.
Design: Secondary data analysis of repeated cross-sections.
Setting and Participants: Data from 6 sources on Ohio NHs were merged to examine 1300 NH-year observations.
Methods: Logistic regression techniques were used to evaluate the relationship between PELI implementation and 3 survey deficiency outcomes: whether the NH had a 4- or 5- deficiency star rating, deficiency score, and whether the NH had a deficiency score of 0.
Results: NHs with complete PELI implementation increased the probability of having a 4- or 5- deficiency star rating by 6 percentage points ($P = .039$). Results also show complete PELI implementation is related to lower deficiency scores and an increased probability of having a deficiency score of 0, but only a 0 deficiency score was marginally significant.
Conclusions and Implications: The findings indicate PCC stands to improve quality outcomes; however, benefits take time to show. Future research should seek to help improve NHs level of commitment to PCC and buy-in from policymakers.

Since 2009, the Centers for Medicare and Medicaid Services (CMS) publicly reports nursing home (NH) quality via its Five-Star Quality Rating System.[1] The chief component in determining a NH's 5-star rating is the regulatory deficiencies a NH receives during surveys.[2] If a surveyor finds a NH is potentially noncompliant with federal regulations as outlined in the *State Operations Manual*, a deficiency may be issued.[3] Examples of deficiencies include failure to treat residents with dignity and respect (F241) and failure to provide necessary care and services (F309).[4] Depending on the number of and severity of deficiencies, a NH's star rating may be affected or they may incur enforcement actions such as monetary penalties.[5] Therefore, NHs are highly motivated to assure they are in compliance with federal regulations to limit deficiencies.

One way to potentially improve deficiency outcomes is providing person-centered care (PCC). PCC, widely recognized as the gold standard of long-term care, places personhood and individuality at the center of care planning and decision-making.[6] Research on PCC improving quality outcomes has found mixed results due to the variety of potential outcomes. Some observed quality losses (eg, more resident falls and dependence in performing activities) among NHs new to PCC, suggesting the benefits of implementation take time to present.[7] Alternatively, a longitudinal panel study of NH quality found significant relationships between implementing PCC and decreased health deficiencies.[8] Evidence-based person-centered tools may help NHs implement PCC to its full potential; however, few exist.

This work was made possible by The Patrick and Catherine Weldon Donaghue Medical Research Foundation (PI: K. Abbott).
The authors declare no conflicts of interest.
* Address correspondence to Miranda C. Kunkel, LMSW, Department of Sociology and Gerontology, Miami University, 375 Upham Hall, 100 Bishop Circle, Oxford, OH, USA.
E-mail address: corpormr@miamioh.edu (M.C. Kunkel).

https://doi.org/10.1016/j.jamda.2022.10.021
1525-8610/

One such tool is the Preferences for Everyday Living Inventory (PELI), a validated questionnaire designed to uncover and honor older adult important preferences throughout care delivery. The PELI includes 72 questions covering 5 domains of day-to-day life asked on a 4-point scale from "very important" or "not important at all".[9] During PELI development, every effort was made to include preferences relevant to fulfilling CMS regulatory requirements. The goal of implementing the PELI is for important resident preferences to be integrated into care delivery, communicated across shifts, and built into quality improvement cycles. If NHs are able to implement the PELI as a PCC intervention, staff may gain important insight into preferences that can address and prevent deficiencies before they occur.

From 2015 to 2019, the Ohio Department of Medicaid mandated the use of the PELI in Ohio NHs as one of 5 quality indicators for a pay for performance initiative.[10] This presented a unique opportunity to explore the extent of PELI implementation on outcomes of interest. The purpose of the present study is to examine the relationship of PELI implementation and survey health deficiencies among Ohio NH providers. It was hypothesized that PELI implementation would be associated with improved health survey outcomes. In particular, NHs with complete PELI implementation would exhibit a higher deficiency star rating and a lower deficiency score (ie, accounting for both severity and scope of deficiencies) compared with NHs that only partially implement the PELI.

Methods

Data Sources and Analytic Sample

We merged 6 sources of deidentified administrative data detailed from Ohio NHs collected between 2015 and 2017. First, to construct the PELI implementation variable, we used the Ohio Biennial Survey of Long-Term Care Facilities (Biennial Survey). Ohio NHs are required to complete the Biennial Survey every other year, per Ohio Revised Code 173.44. The 2015 Biennial Survey had a response rate of 95%,[11] and the 2017 Biennial Survey had a response rate of 94%.[12] Second, the Biennial Survey was merged with Nursing Home Compare Archive data to obtain health deficiency outcomes. For both 2015 and 2017, we used values reported by CMS on the Nursing Home Compare website in December of each year. Third, financial, staffing, and other NH characteristics were obtained from the Ohio Medicaid Cost Reports and fourth, the Certification and Survey Provider Enhanced Reports data for additional information on NH characteristics and deficiencies. Fifth, assessments from the Minimum Data Set (MDS) for long-stay residents were aggregated to the NH-level to obtain resident demographic and case-mix characteristics. Sixth, the Washington, Wyoming, Alaska, Montana, and Idaho rural-urban classification of Rural-Urban Commuting Area codes was used to classify NHs as rural or urban.[13]

Our analytic sample required NHs be freestanding and have all relevant variables across the data sets. We restricted our analysis to freestanding NHs because hospital-based facilities are different, and focus more on post-acute care. We also restricted the sample to nongovernment owned (ie, for-profit or not-for-profit) and NHs that did not change ownership during the year. The final analytic sample was 1300 NH-year observations.

Dependent Variable: Deficiency Outcomes

The health-inspection star rating is based on the deficiency history of the NH over the prior 3 years, which is defined as the three most recent recertification surveys and the prior three years (ie, 36 months) for complaint surveys. To account for severity and scope as well as number of deficiencies, CMS calculates a deficiency score to rank NHs in each state and calculates the health inspection star rating.[2] For simplicity, we refer to the health inspection star rating as the deficiency star rating.

To operationalize health deficiencies, we constructed 3 measures from Nursing Home Compare Archive data. Our first measure identified whether a NH had a deficiency star rating of 4 or 5 stars. Because the deficiency star rating is calibrated to each state, this measure identified approximately one-third of NHs with the best deficiency histories. However, the deficiency star rating is based on the deficiency history over the past 3 years; therefore, it may take time for newly implemented PELI programs to impact star ratings. To account for this, our second measure was the deficiency score of the NH during the most recent year. Higher deficiency scores indicate either greater number of deficiencies and/or deficiencies with greater severity and scope, and reflect a NH performance in the most recent recertification and complaint surveys. Our third measure is NHs that had a deficiency score of 0 in the most recent year. This indicates that the NH either had no deficiencies or only received deficiencies that had no actual harm with potential for minimal harm (eg, severity/scope of A, B, and C).[2]

Key Predictor Variable: PELI Implementation

The Biennial Survey asked NHs the extent to which they have implemented the PELI with the following increasing implementation options: We have not heard about implementing the PELI; We do not plan to implement the PELI; We are aware of the PELI implementation, but we have not started; We are in the planning phases of implementing the PELI; We have identified a person or team to implement the PELI; We have conducted PELI interviews with some residents; We have completed PELI interviews with all residents who are able to be interviewed; We have conducted PELI interviews with family proxies of residents who are unable to be interviewed; and we have used information gathered from the PELI to guide our care planning and quality improvement. These options were used to create a dichotomous variable to represent partial vs. complete PELI implementation. NHs, which completely implement the PELI use information, gathered from the PELI to guide care delivery and quality improvement. Any other response was considered partial implementation. A small proportion of NHs did not implement any aspects of PELI. For simplicity, these NHs were included in the partial implementation group. Additional information on the PELI implementation variables can be found in Kunkel et al.[14] A sample breakdown of PELI implementation, is described in Table 1.

Control Variables

To isolate the relationship between PELI implementation and deficiency outcomes, we control for NH, resident, and staff characteristics with known relationships to care quality. The following NH characteristics are included: ownership (ie, for-profit vs not-for-profit), chain affiliation, continuing care retirement community affiliation, rural geographic location, number of beds, occupancy rate, Medicaid and Medicare payer-mix, and presence of special care units

Table 1
The Extent of PELI Implementation by Year

	2015	2017	Total
Partial PELI implementers	289	87	376
	36.2%	17.4%	28.9%
Complete PELI implementers	510	414	924
	63.8%	82.6%	71.1%
Total sample	799	501	1,300
	100%	100%	100%

The table reports the sample size and proportion of the sample by PELI implementation by year and for the overall sample.

(ie, dementia and other). Resident characteristics were aggregated from long-stay MDS resident assessments to the NH level. Resident characteristics included average age; sex; activities of daily living score, and the presence of dementia. Resident characteristics also included the racial/ethnic composition of the facility measured by the percentage of residents that were Black, Indigenous, or People of Color (BIPOC; defined as any non-White race/ethnicity, including Black, Indigenous, Asian, and Hispanic). In the sample, 91% of BIPOC residents were Black, which limited our ability to include separate variables for each racial/ethnic group. Staffing levels are included, measured in hours per resident day for registered nurses, licensed practical nurses, certified nurse aides, social services, and activities staff.

Analysis

Data cleaning was performed in SAS v 9.4 (SAS Institute) and analysis in Stata v16.1 (StataCorp LLC). Summary statistics for control variables were calculated first, followed by an examination of bivariate relationships. T-tests were used to calculate the difference between 2 means (ie, partial vs. complete PELI implementation) under an unequal variance assumption. We then estimated logistic regression converting all coefficient estimates into marginal effects evaluated at the mean. All regressions accounted for heteroscedasticity and were clustered at the NH level. This research was approved by the Miami University (Oxford, OH) Institutional Review Board.

Results

Table 2 reports summary statistics for the unadjusted deficiency measures (ie, the proportion of NH with a deficiency star rating of 4 or 5 stars the mean deficiency score for the prior year, and the proportion of NH that had a deficiency score of 0 the prior year) for each year and by PELI implementation. In 2015, the mean deficiency scores for partial and complete implementers were 34.0 and 33.2, respectively ($P = .80$). The 0 deficiency score outcome was not statistically significant ($P = .36$) with 13.1% of partial implementers and 15.5% of complete implementers. In 2017 (panel B, n = 501), 24.1% of partial implementers and 38.6% of complete implementers had a 4- or 5-star rating. This difference was statistically significant ($P = .006$). The 0 deficiency score outcome in 2017 was statistically significant ($P = .009$) with 0.6% of partial implementers and 13.8% of complete implementers.

When the 2015 and 2017 data were pooled (panel C, n = 1300) the star rating outcome was statistically significant ($P = .009$) with 29.5% of partial implementers and 37.0% of complete implementers exhibiting an average star rating of 4 or 5 stars. However, the pooled deficiency scores (ie, data from both 2015 and 2017) were still not statistically significant ($P = .53$). Although the pooled 0 deficiency score was not statistically significant, complete implementers were more likely to have a score of 0 (14.7% compared with 13.8% in 2017 alone).

Table 3 reports the effect of complete PELI implementation on the deficiency outcomes for the entire sample. All columns have a sample size of 1300. The first column reports summary statistics for the explanatory variables (mean and standard deviation). The following columns report marginal effects and standard errors (adjusted for clustering at the NH level) for regressions, with dependent variables listed in the column heading. The first model for each dependent variable reports the unadjusted differences for being a complete PELI implementer whereas the second adjusts for other factors that may be correlated with PELI implementation and the dependent variables.

Compared with partial PELI implementers, NH who completely implemented the PELI were more likely to achieve a deficiency star rating of 4 or 5 stars by 7.6 percentage points ($P < .05$) in the unadjusted model and 6.0 percentage points ($P < .05$) in the model that adjusted for other factors. The deficiency score of complete PELI implementers was 1.51–1.63 points lower than that of the partial PELI implementers in the adjusted and unadjusted models; however, neither effect was not statistically significant. Complete PELI implementers were more likely to have a deficiency score of 0 (3.7 percentage points in adjusted model, $P < .1$), but the result is only statistically significant once other controls are included in the model. The control variable findings were consistent with previous research and our expectations. NHs with a high percentage of residents who identify as BIPOC have lower values for all three outcomes. In addition, better occupancy rates were associated with better scores in all 3 outcomes.

To test for the sensitivity of the results, we re-estimated the regressions in Table 4 only for the NHs that did not have missing data in 2015 or 2017. The marginal effects and standard errors for the PELI implementation variable are reported in Table 4. All columns have a sample size of 920. Comparing the results in Table 4 and Table 3, the effect sizes were in a similar direction, suggesting results are robust to excluding observations that are only in 1 of the 2 years. The results have become statistically significant, but this is

Table 2
The Unadjusted Relationship between PELI Implementation and Deficiency Outcomes

	Deficiency Outcomes		
	Deficiency Star Rating of 4 or 5 Stars	Deficiency Score	Zero Deficiency Score
Panel A. Observations from 2015 (n = 799)			
All observations	34.0%	33.5	14.6%
Partial PELI implementation	31.1%	34.0	13.1%
Complete PELI implementation	35.7%	33.2	15.5%
P value	.19	.80	.36
Panel B. Observations from 2017 (n = 501)			
All observations	36.1%	37.0	12.4%
Partial PELI implementation	24.1%	42.6	0.6%
Complete PELI implementation	38.6%	35.8	13.8%
P value	.006	.17	.009
Panel C. Observations from 2015 and 2017 (n = 1300)			
All observations	34.8%	34.9	13.8%
Partial PELI implementation	29.5%	36.0	11.4%
Complete PELI implementation	37.0%	34.4	14.7%
P value	.009	.53	.10

The table reports the unadjusted proportion of the sample with a deficiency star rating of 4 or 5 stars, the average deficiency score (in points) in the prior year, and the proportion of the sample that had a 0 deficiency score in the prior year. These summary statistics are reported for all observations and by PELI implementation. The *P* value represents a statistical test that determines if partial PELI and complete PELI implementations have statistically different averages.

Table 3
Regression Results: Effect of Complete PELI Implementation Deficiency Outcomes

Variables	Summary Statistics	Deficiency Star Rating of 4 or 5 Stars		Deficiency Score		Zero Deficiency Score	
Complete PELI implementation	0.711	0.076**	0.060**	-1.631	-1.512	0.034	0.037*
	(0.454)	(0.029)	(0.029)	(2.609)	(2.503)	(0.022)	(0.022)
NH characteristics							
Not-for-profit ownership	0.205		0.027		-4.669		0.001
	(0.404)		(0.044)		(3.738)		(0.030)
Chain member	0.606		0.022		-5.478**		0.020
	(0.489)		(0.030)		(2.502)		(0.020)
CCRC	0.168		-0.067		2.732		-0.004
	(0.374)		(0.044)		(3.776)		(0.029)
Rural area	0.278		0.000		1.770		0.012
	(0.448)		(0.034)		(3.084)		(0.022)
Number of beds	100.653		-0.001*		0.070**		0.000
	(42.526)		(0.000)		(0.033)		(0.000)
Occupancy rate (%)	83.401		0.007***		-0.582***		0.002
	(11.196)		(0.002)		(0.119)		(0.001)
Medicaid payer-mix (%)	64.488		-0.001		0.033		-0.001
	(15.667)		(0.002)		(0.162)		(0.001)
Medicare payer-mix (%)	10.041		-0.004		-0.127		-0.005***
	(6.230)		(0.003)		(0.272)		(0.002)
Dementia special care unit	0.218		0.020		-5.208*		0.004
	(0.413)		(0.035)		(2.933)		(0.024)
Other special care unit	0.055		0.039		3.361		-0.034
	(0.227)		(0.064)		(4.983)		(0.054)
Resident characteristics							
Resident: average age	79.091		0.004		-0.348		0.003
	(6.665)		(0.005)		(0.429)		(0.004)
Resident: female (%)	68.300		-0.001		0.138		0.001
	(12.565)		(0.002)		(0.174)		(0.002)
Resident: BIPOC (%)	13.545		-0.003***		0.275***		-0.002**
	(19.825)		(0.001)		(0.069)		(0.001)
Resident: ADL score	8.085		0.014		-0.733		0.009
	(1.749)		(0.011)		(0.917)		(0.008)
Resident: dementia (%)	58.670		0.000		-0.056		-0.001
	(14.135)		(0.001)		(0.100)		(0.001)
Staff characteristics							
Registered nurses (h per resident d)	0.618		0.176**		-6.745		0.135***
	(0.245)		(0.069)		(6.670)		(0.044)
Licensed practical nurses (h per resident d)	0.960		0.065		-6.109		0.057*
	(0.299)		(0.048)		(6.329)		(0.031)
Certified nurse aides (h per resident d)	2.294		0.007		-1.705		0.001
	(0.548)		(0.031)		(2.532)		(0.019)
Year 2017	0.385		0.015		2.899		-0.032
	(0.487)		(0.024)		(2.311)		(0.020)

ADL, activities of daily living; *CCRC*, Continuing Care Retirement Community.
Sample size = 1300.
The first column of the table reports summary statistics for the control variables. The remaining columns report the marginal effects and standard errors (clustered at the NH level) of the logistic regressions with and without control variables for each dependent variable. The dependent variables are whether the facility received a deficiency star rating of 4 or 5 stars, the deficiency score in points in the prior year, and whether the facility had a 0 deficiency score in the prior year.
***$P < .01$, **$P < .05$, *$P < .1$.

likely due to reduced statistical power caused by the smaller sample size.

Discussion

The present study sought to examine the relationship between PELI implementation and 3 survey health deficiency outcomes: the proportion of NH with a deficiency star rating of 4 or 5 stars, the mean deficiency score for the prior year, and the proportion of NH that had a deficiency score of 0 in the prior year. It was hypothesized that PELI implementation would be associated with better health deficiency outcomes, specifically that NHs with complete PELI implementation would exhibit a higher deficiency star rating and a lower deficiency score compared with NHs that have partial PELI implementation. Results supported this hypothesis. Bivariate results found complete PELI implementers were more likely to have a deficiency star rating of 4 or 5 stars in 2017, but not 2015. They also found an average difference in deficiencies scores of 0.8 points in 2015 compared with 6.8 points in 2017. Although these differences were not statistically significant, they suggest complete PELI implementers could have done marginally better each year. Because the deficiency star rating is based on deficiencies over the last 3 years, these marginal improvements each year translated into better deficiency star ratings. The results from logistic regression support the conclusion that the effect in the most recent year for deficiency scores was not statistically significant, but the deficiency star ratings were more likely to be 4 and 5 star rated.

These findings align with previous research and suggest that the benefits of PCC implementation may take time. Although the impact of a novel practice depends upon the nature and complexity of the

Table 4
Sensitivity Analysis: Effect of Complete PELI Implementation Deficiency Outcomes for NHs with Data in 2015 and 2017

	Deficiency Outcomes: All Variables		Deficiency Outcomes: PELI Implementation Only			
	Deficiency Star Rating of 4 or 5 Stars		Deficiency Score		Zero Deficiency Score	
Complete PELI implementation	0.067*	0.059	-2.909	-3.973	0.023	0.027
	(0.037)	(0.037)	(3.079)	(3.044)	(0.028)	(0.027)
Controls included	N	Y	N	Y	N	Y

Sample size = 920.
The table reports the marginal effects and standard errors (clustered at the NH level) of the logistic regressions with and without control variables for each dependent variable, but the sample is restricted to NHs with data in both 2015 and 2017. The dependent variables are whether the facility received a deficiency star rating of 4 or 5 stars, the deficiency score in points in the prior year, and whether the facility had a 0 deficiency score in the prior year. The row labeled control indicates whether controls were included in the model. All control variables are the same as Table 3.
***$P < .01$, **$P < .05$, *$P < .1$.

intervention and adopting organization; lasting change is difficult to achieve without effective leadership, intentionality and commitment to the change, and participation from staff and stakeholders.[15] For that reason, organizations who have recently started initiatives may not see the same quality improvements as organizations that have been on the journey longer.[7,8] Among NHs implementing the PEAK 2.0, a person-centered pay-for-performance program, NHs who were at higher stages of adoption exhibited improvement among a variety of resident health measures (eg, presence of ulcers, major depressive symptoms, pain), whereas NHs at earlier stages of adoption did exhibit some poorer outcomes (eg, resident falls, independence in performing activities of daily living, and incontinence).[7] Integrating PCC delivery in the NH setting takes time, as organizational practices, existing policies, and professional beliefs and attitudes all stand to impact implementation.[16,17] Communities that understand the mind shift of PCC and persevere through the initial disruption of implementation stand to receive long-term quality benefits, as exemplified by the current study.

Regardless of a NHs level of commitment to PCC, their efforts will be helped or hindered by the consistency (or inconsistency) of messages provided from state organizations and the regulatory bodies (ie, CMS) who mandate PCC. In Ohio, the Ohio Department of Medicaid initiatives were changed every few years (with new administrations being elected), making it challenging for NHs to successfully implement programs for long enough to see improvements to quality of care. Had the Ohio Department of Medicaid kept the PELI in place and refined evaluation to promote integration into care, NHs would have been better set up for success. In addition, state level policy implementation strategies and outcomes could be strengthened by using implementation science in the NH setting.[18]

This study is not without limitations. First, the PELI implementation variable was self-reported by NH administrators. Although there is little incentive to provide biased responses, administrators may have provided erroneous data due to misinterpretation or responding in socially desirable ways. Second, there is no ability to objectively measure whether PCC was actually provided. However, our study provides an important first step in determining whether implementing PCC could result in desirable outcomes. Further research must focus on what NHs objectively did to identify best practices. Third, data is limited to Ohio NHs only. Future research should explore NHs from other states with different policies or initiatives to better understand the relationship between PCC and deficiency outcomes. Finally, some stakeholders argue survey deficiencies may have significant variation over time and region. Although this study did not have information on the surveyors, the use of one state reduces the change regional variation changed over time. Furthermore, it is unlikely specific surveyors were assigned NHs based on PELI implementation, reducing any statistical bias that could arise if there is variation in the survey process.

Conclusions

PCC impacts quality outcomes in NHs. The present study found complete PELI implementers had relatively better deficiency scores in 2017 compared with 2015; controlling for NH, resident, and staff characteristics related to quality of care. Although these differences were not all statistically significant, the deficiency star rating publicly reported by CMS was. Our study finds these small improvements translate into complete PELI implementers being more likely to have a deficiency star rating of 4 or 5 stars. Because the deficiency star rating is the most important component of the overall star rating, adoption of PCC interventions such as the PELI appears to improve star rating. If consumers base their choice of which NH to use based on star ratings, PCC interventions could subsequently improve NH census, preferred mix of payers, and chiefly more PCC delivered to residents. PCC approaches stand to have benefits for NH staff, residents, and organizations, but they require a long-term commitment from organizations, states, and regulatory bodies who mandate PCC initiatives.

References

1. CMS. Five-star quality rating system. Accessed June 13, 2022. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandCompliance/FSQRS
2. CMS. Design for nursing home compare five-star quality rating system: Technical users' guide. Accessed June 13, 2022. https://cmscompliancegroup.com/wp-content/uploads/2018/06/Five-Star-Quality-Rating-System-Technical-Users-Guide-May-2018.pdf
3. CMS. State operations manual. Appendix PP- Guidance to surveyors for long term care facilities. Accessed June 13, 2022. https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf
4. U.S. Department of Health and Human Services. Trends in deficiencies at nursing homes show that improvements are needed to ensure the health and safety of residents. Accessed February 21, 2022. https://oig.hhs.gov/oas/reports/region9/91802010.pdf
5. CMS. Enforcement and compliance overview. Accessed June 13, 2022. https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/Enforcements
6. Yang Y, Li H, Xiao LD, Zhang W, Xia M, Feng H. Resident and staff perspectives of person-centered climate in nursing homes: a cross-sectional study. *BMC Geriatr*. 2019;19:1–10.
7. Hermer L, Cornelison L, Kaup ML, et al. Person-centered care as facilitated by Kansas' PEAK 2.0 Medicaid pay-for-performance program and nursing home resident clinical outcomes. *Innov Aging*. 2018;2:igy033.
8. Lepore MJ, Lima JC, Miller SC. Nursing home culture change practices and survey deficiencies: a national longitudinal panel study. *Gerontologist*. 2020;60:1411–1423.
9. Van Haitsma K, Curyto K, Spector A, et al. The preferences for everyday living inventory: Scale development and description of psychosocial preferences responses in community-dwelling elders. *Gerontologist*. 2013;53:582–595.
10. Abbott KM, Elliot A, Van Haitsma K. Lessons learned from Ohio's statewide implementation of the Preferences for Everyday Living Inventory as a pay for performance initiative to enhance person-centered care. *J Am Med Dir Assoc*. 2021;22:2074–2078.
11. Mehdizadeh S, Nelson M, Applebaum R, Straker JS. Policy does matter: Continued progress in providing long-term services and supports for Ohio's

older population. Scripps Gerontology Center 2017. Accessed February 21, 2022. https://sc.lib.miamioh.edu/bitstream/handle/2374.MIA/6159/Mehdizadeh-Brief-Policy-Does-Matter-8-2017.pdf
12. Applebaum R, Nelson M, Straker JK, et al. *Maybe you can go home again: Ohio's strategy to provide long-term services and supports for a growing older population*. Scripps Gerontology Center; 2019.
13. Rural Health Research Center. Rural-Urban Commuting Area Codes (RUCAs). Accessed February 21, 2022. https://depts.washington.edu/uwruca/
14. Kunkel MC, Madrigal C, Moore R, et al. Exploring the criterion validity of pragmatic person-centered care culture change measures. *J Appl Gerontol*. 2022;41:2542–2548.
15. Gibson DE, Barsade SG. Managing organizational culture change. *J Soc Work Longterm Care*. 2008;2:11–34.
16. Backman A, Ahnlund P, Sjögren K, et al. Embodying person-centred being and doing: Leading towards person-centred care in nursing homes as narrated by managers. *J Clin Nurs*. 2020;29:172–183.
17. Moore L, Britten N, Lydahl D, et al. Barriers and facilitators to the implementation of person-centred care in different healthcare contexts. *Scand J Caring Sci*. 2016;31:662–673.
18. Abbott KM, Douglas N, Van Haitsma K. A rising tide lifts all boats: equitable nursing home policy through implementation science. *Public Policy Aging Rep*. 2022;32:6–12.