Who Are the Innovators? Nursing Homes Implementing Culture Change

David C. Grabowski, PhD,[*,1] Amy Elliot, PhD,[2] Brigitt Leitzell, MS,[3]
Lauren W. Cohen, MA,[4] and Sheryl Zimmerman, PhD[4]

[1]Department of Health Care Policy, Harvard Medical School, Boston, Massachusetts.
[2]Pioneer Network, Chicago, Illinois.
[3]Center for Health Care and Policy Research, The Pennsylvania State University, University Park.
[4]The Cecil G. Sheps Center for Health Services Research and The School of Social Work, University of North Carolina at Chapel Hill.

*Address correspondence to David C. Grabowski, PhD, Department of Health Care Policy, Harvard Medical School, 180 Longwood Avenue, Boston, MA 02115-5899. E-mail: grabowski@med.harvard.edu

Purpose of the Study: A key directive of the Affordable Care Act of 2010 is to transform both institutional and community-based long-term care into a more person-centered system. In the nursing home industry, the culture change movement is central to this shift in philosophy. If policymakers are to further encourage implementation of culture change, they need to better understand the factors associated with implementation. **Design and Methods:** Using logistic regression ($N = 16,835$), we examined the extent to which resident, facility, and state characteristics relate to a nursing home being identified by experts as having implemented culture change over the period 2004 through 2011. **Results:** At baseline, the 291 facilities that were later identified by experts to have implemented culture change were more often nonprofit-owned, larger in size, and had fewer Medicaid and Medicare residents. Implementers also had better baseline quality with fewer health-related survey deficiencies and greater licensed practical nurse and nurse aide staffing. States experienced greater culture change implementation when they paid a higher Medicaid per diem. **Implications:** To date, nursing home culture change has been implemented differentially by higher resource facilities, and nursing homes have been responsive to state policy factors when implementing culture change.

A key directive of the Affordable Care Act of 2010 is to transform both institutional and community-based long-term services and supports into a more person-centered system (Patient Protection and Affordable Care Act, 2010). In the nursing home industry—the main provider of institutional-based long-term services and supports—the culture change movement is central to this shift in philosophy. Culture change has the potential to improve person-centered care and quality of life for residents, while also improving working conditions for staff (Koren, 2010). As such, the Institute of Medicine (2001) deemed person-centered care a key component of care quality.

Culture change began as a grass roots movement in the late 1980s, although the more official beginning of the movement is tied to the first meeting of the Nursing Home Pioneers (now the Pioneer Network) in 1997 (Rahman & Schnelle, 2008). A nursing home that implements culture change aims to: individualize care; create home-like living environments; promote close relationships between staff, residents, families, and communities; empower staff to respond to resident needs and work collaboratively with management to

make decisions regarding care; and improve quality of care and quality of life (Koren, 2010).

Although more rigorous studies of culture change's impact on clinical outcomes, quality of care, quality of life, and other resident and staff outcomes need to be conducted, the literature to date has suggested mostly mixed findings with respect to clinical quality of care (Rahman & Schnelle, 2008; Shier, Khodyakov, Cohen, Zimmerman, & Saliba, 2014; White-Chu, Graves, Godfrey, Bonner, & Sloane, 2009). However, studies have shown culture change to be associated with improved psychosocial outcomes and some outcomes related to physical health (Hill, Kolanowski, Milone-Nuzzo, & Yevchak, 2011; White-Chu et al., 2009). The price of such outcomes is reflected in the fact that culture change is often associated with a large upfront financial investment on the part of the facility (Jenkens, Sult, Lessell, Hammer, & Ortigara, 2011), but in addition to potentially beneficial resident and staff outcomes, it may result in higher revenues (Hicks, Rantz, Petroski, & Mukamel, 2004), specifically in the form of higher profits per resident day, higher occupancy rates, and reduced operating costs (Doty, Koren, & Sturla, 2008; Elliot, 2010; Grant, 2008).

Because levels of implementation and engagement vary, culture change is often described as a continuum, with many believing that broad systemic environmental and process changes are representative of comprehensive culture change (Grant & Norton, 2003; Misiorski & Rader, 2005). As the movement developed, several models that incorporate systemic transformations have been implemented including Wellspring, Planetree, and the Eden Alternative (Koren, 2010). One of the major and more recent culture change initiatives over the past decade is The Green House Model. This initiative involves the creation of small buildings that resemble homes designed to serve a maximum of twelve residents. The goal is to provide a more homelike environment that maintains the dignity and independence of residents, while still providing a comparable level of skilled care (Zimmerman & Cohen, 2010). The organizational structure in these homes is less hierarchical than traditional homes, and more control over daily activities is given to residents and the Shahbazim (i.e., the Green House term for the workers who provide the bulk of direct care) (Bowers & Nolet, 2014).

Despite a growing recognition of culture change in national initiatives (American Medical Directors Association, 2010; Centers for Medicare & Medicaid Services, 2005, 2011), relatively few nursing homes have comprehensively implemented culture change activities. According to findings from the 2007 Commonwealth Fund National Survey of Nursing Homes, only 33 % of nursing homes were classified as culture change implementers, with only 13 % indicating that they met the definition of comprehensively integrated culture change (Miller et al., 2013).

Given this slow rate of implementation, proponents of culture change are looking for ways to promote this model. Possibilities for promotion include providing policy-based incentives through such mechanisms as pay-for-performance (P4P), regulatory reform, and public reporting. Several states have developed P4P programs that incorporate elements of culture change (Werner, Konetzka, & Liang, 2010). Although the exact performance measures and financial incentives employed vary, recent evaluations of these programs anecdotally support beneficial outcomes in the areas of resident and family satisfaction, clinical outcomes, quality of life, employee satisfaction, system-wide culture change, staff turnover, and increased direct-care hours (Dunton et al., 2008; Pacific Health Policy Group, 2009; Public Consulting Group, 2011; Werner et al., 2010). In terms of regulatory reform, the 2009 revisions to the Centers for Medicare & Medicaid Services (CMS) Interpretive Guidelines for nursing home surveyors included an increased focus on resident choice and autonomy during the survey process.

Although these initiatives are a positive step toward spreading the innovation of culture change, these programs are generally based on the assumption that the relative ease of compliance and participation is equal across nursing homes. If organizational components, location, or other unintended characteristics present barriers to this type of innovation, implementation of these programs or the lack thereof should be understood based on these criteria rather than on the effort and motivation of providers themselves. Also, the effort and motivation of providers may not be sufficient to affect culture change in light of such barriers.

This article contributes to the literature by testing a series of hypotheses related to the implementation of nursing home culture change. The findings have implications for policymakers, provider organizations, advocates, and researchers. In the context of expanding models of person-centered

The Gerontologist

care, policymakers need to understand the barriers to widespread adoption of this model. Providers and advocates can benefit from information regarding which types of organizations are able to grow this model independently and which will require additional resources to do so. From a research perspective, in order to evaluate the potential benefits and costs associated with culture change, researchers must account for the fact that implementation is not random and certain types of organizational, market, and state factors are associated with increased adoption. More pointedly, it is doubtful that a randomized trial will be conducted of culture change, making it important to address the challenge of differential selection in observational studies.

This article sheds light on the organizational (i.e., nursing home facility), market, and state policy characteristics associated with culture change by comparing providers who implemented culture change relative to those who did not. Nursing homes implementing culture change in this study were identified by national experts as those that promote individualized-care practices (e.g., resident autonomy and decision making), empowered workforce practices (e.g., staff autonomy and decision making), and a homelike environment (Elliot, Cohen, Reed, Nolet, & Zimmerman, 2014). A component of this analysis includes a comparison of nursing homes that implemented The Green House Model (a model considered to require systemic implementation of organizational and environmental practices) with those that did not implement this model.

Prior Literature and Conceptual Framework

If providers and policymakers continue to pursue and incentivize implementation of a culture change, it is necessary to understand the characteristics of facilities that have implemented culture change and how they differ from those that have not. Prior studies have identified several organizational and market characteristics that more generally relate to the adoption and spread of innovative practices such as special care units. Among these characteristics are nonprofit status, greater organizational size, membership in an interorganizational network/chain, higher occupancy rates, and market competition (Banaszak-Holl, Zinn, & Mor, 1996; Castle, 2001; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Rye & Kimberly, 2007; Zinn, Mor, Feng, & Intrator, 2007). At the state

policy level, two recent studies suggest more generous Medicaid payment policies are associated with increased culture change implementation (Miller, Cohen, Lima, & Mor, 2014; Miller et al., 2013).

We assume a basic model in which the decision to implement culture change is made by facility leadership. The facility's decision incorporates several arguments including organizational values (Banaszak-Holl, Castle, Lin, & Spreitzer, 2013) and the financial implications of culture change implementation. This study focuses on organizational and contextual factors that might lower the costs or increase the organizational benefits of culture change implementation. In particular, we generate hypotheses related to four factors potentially associated with the implementation of culture change: organizational profit status and affiliation, facility resources, market competition, and state policies.

Hypothesis 1

The implementation of culture change will be greater in nonprofit and faith-based organizations. Certain organizational forms may have less incentive to maximize profits and a greater incentive to maximize other objectives such as the quality of resident life and the staff working environment. In particular, nonprofit and faith-based nursing homes may be fundamentally or necessarily more motivated by mission-driven priorities than by profits.

Hypothesis 2

Higher resource facilities (in terms of finances, staffing, and services) will be more likely to implement culture change. Comprehensive culture change requires a large upfront investment in resources. Higher resource facilities include those with a greater share of private-pay residents, higher occupancy, more beds, lower financial debts relative to assets, location in a continuing care retirement community (CCRC), special care unit, and more staff. In addition, fewer survey deficiencies are considered a reflection, in part, of higher resources, and higher acuity residents may require more resources and so limit culture change implementation.

Hypothesis 3

Nursing homes located in more competitive markets will have higher rates of implementation. Competition is expected to influence a culture change implementation because homes in more

competitive markets have additional motivation to engage in organizational changes that could improve consumer awareness and increase market share.

Hypothesis 4

State policies that enable, reward, or incentivize the implementation of culture change will lead to a greater adoption of these models. Many states have policies or organizations that enable, reward, or otherwise incentivize culture change, such as those that generally pay a higher Medicaid per diem rate to nursing homes, or that specifically reward culture change in their Medicaid P4P system. Additionally, some states have culture change coalitions that promote the use of culture change and, in some cases, partner with policymakers to incorporate the use of these practices into state initiatives and quality improvement programs.

Study Data and Methods

Data

This study merged together several administrative databases at the nursing home level using data from 2004 (baseline). First, the Online Survey Certification and Reporting (OSCAR) system data were used to obtain information on nursing home characteristics, including for-profit/nonprofit status, chain affiliation, number of beds, payer mix (percent Medicaid, percent Medicare, and percent other), staffing, and health-related deficiencies. OSCAR, a publicly-available data set maintained and updated by CMS, is a compilation of information collected by surveyors during inspection surveys conducted at nursing facilities as part of the Medicare and Medicaid certification process. Nursing homes are responsible for submitting facility, resident, and staffing information, and deficiencies are entered by state survey agencies when facilities are not in compliance with federal regulatory standards.

A second source of data was the CMS skilled nursing facility cost reports, which contain facility-level itemized utilization and cost allocation data. All Medicare-certified skilled nursing facilities are required to submit an annual cost report. CMS uses this cost report information in their annual financial settlement with the provider. Finally, we obtained state policy information regarding Medicaid payment rates, P4P states, and culture change coalition states, from their respective sources (Grabowski, Feng, Intrator, & Mor, 2008; Pioneer Network, 2013; State of Colorado Department of Health Care Policy and Financing, 2009; Werner et al., 2010).

To compile a list of treatment "implementer" nursing homes for this study, the 12 members of the Pioneer Network Board of Directors and 13 collaborating national culture change experts (i.e., representatives from leading culture change models, consultants and advocates including the Eden Alternative, The Green House model, Action Pact, Planetree, B&F Consulting, and state culture change coalitions) were asked in 2004 to identify nursing homes that best exemplified settings engaged in sustained culture change innovation. For the purpose of data collection, "best exemplify" was defined as nursing homes deeply engaged in change for two years or more in key organizational areas of care practice, environment, and workplace. Experts were provided a specific framework to identify homes that included: person-directed practices in key organizational areas of care and resident-related activities *directed by residents*; *environment designed as a home*; *close relationships* among residents, family members, staff, and community; work that is organized to *support and empower all staff* to respond to residents' needs and desires; management that allows for *collaborative and decentralized decision making*; and *systematic processes* that are comprehensive, measurement-based, and used for continuous quality improvement. Given these criteria, we emphasize that our definition required a comprehensive adoption of the tenets of culture change. Any nursing homes partially adopting culture change—30% of nursing homes were estimated to have implemented some tenet of culture change by 2007 (Doty et al., 2008)—were not categorized as culture change adopters for the purposes of our study. Importantly, experts identified homes based on their own individual knowledge and experiences in the field. Homes outside of that scope of knowledge would not have been identified, so some facilities that adopted culture change as defined earlier could have been missed in the adopter sample.

Subsequently in 2011, these experts were asked to verify whether previously identified nursing homes still met the culture change criteria and also to contribute additional nursing homes to the list meeting the same criteria used in 2004. A culture change expert from NCB Capital Impact (which registers Green House homes) was consulted to

obtain the list of Green House nursing homes in operation over the period 2004 through 2011.

Variables

We analyzed the relationship between culture change (or Green House) implementation and a number of facility, market, and state level variables to test our hypotheses related to organization, resources, competition, and state policy. Culture change and Green House implementation were defined as those facilities *without* these models in the 2004 Pioneer Network data collection that had implemented them by the 2011 data collection effort (see Table 1 for variable definitions and sources).

To test our first hypothesis, we analyzed measures related to nonprofit status and faith-based status from the OSCAR. To test our hypothesis regarding facility resources, we analyzed chain ownership, location in a CCRC, presence of a special care unit (of any type), number of beds, occupancy rate, payer mix (Medicaid, Medicare, other), a resident acuity index (Cowles, 2002), staffing per resident day (registered nurses [RNs], licensed practical nurses [LPNs], and nursing assistants [NAs]), and health-related survey deficiencies. Deficiencies are evaluations of poor quality made by state surveyors under the federal nursing home certification regulations. Under the direction of CMS, state surveyors use 175 consolidated measures encompassing structural, procedural, and outcome measures of quality to assign health-related deficiencies. Given the large variation in survey deficiencies across states, we subtracted the state average from each facility's count of deficiencies. From the Medicare skilled nursing facility cost reports, we constructed a debt-to-asset ratio at the facility level. To test the market competition hypothesis, we constructed a Herfindahl Index, which is a county-based measure of market concentration based on the squared sum of the facility market shares.

Finally, to test the state policy hypothesis, we analyzed three measures: the average Medicaid nursing home per diem payment in 2004; whether the state rewarded culture change practices in its P4P system; and the presence of a state culture change coalition formed by long-term care stakeholders to advance culture change in their respective states. Because the state P4P systems encompassing culture change elements have been adopted relatively recently, we coded states as "P4P" if they adopted P4P rewarding culture change at any point during the study period. The five states with culture change P4P programs were Kansas (adopted in 2002), Utah (2003), Minnesota (2006), Oklahoma (2007), and Colorado (2009). We identified 38 states that had a culture change coalition in place at some time over the study period: Alabama, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, and Wisconsin.

In order to control for facility location, we also examined whether the facility was located in an urban area and in a particular region of the country (Northeast, South, West, and Midwest).

Sample and Statistical Analysis

We eliminated nursing homes ($N = 110$) that had a culture change model in place in 2004 based on the identification of nursing homes by the national experts. Also, we required that the facilities later implementing culture change were in operation in 2004 such that we could identify a pre-observation period. For example, an organization building a brand new "culture change" nursing home in 2007 would not be captured in our sample. We eliminated 37 nursing homes that were identified as culture change in 2011 that did not have a corresponding assessment in 2004.

Thus, our final analysis sample included 17,031 nursing homes without culture change in 2004. By 2011, our experts identified 291 of these facilities to have implemented culture change and 11 facilities to have implemented Green House. We examined what facility, market, and state level factors at baseline (2004) were correlated with the implementation of culture change by 2011. We first examined this relationship using bivariate comparisons, with tests of statistical significance based on a Wilcoxon Rank Sum Test. We separately analyzed implementation of culture change broadly and then The Green House Model specifically. The bivariate analysis was used to show the relationship between implementing culture change (or Green House) and the various facility, market, and state characteristics. Next, we estimated a logistic regression model examining

Table 1. Variable Definitions and Sources

Variable	Definition	Source
Culture change implementer	Expert identified as implementing culture change between 2004 and 2011	Pioneer Network expert survey
Green house implementer	Implemented Green House home between 2004 and 2011	Pioneer Network expert survey
Nonprofit	Nonprofit-owned facility (0, 1)	OSCAR
Faith based	Faith-based facility (0, 1)	OSCAR
Chain owned	Member of chain organization (0, 1)	OSCAR
Part of CCRC	Nursing home is part of a CCRC (0,1)	OSCAR
Special Care Unit	Facility has special care unit (0,1)	OSCAR
Size	Number of beds	OSCAR
Occupancy rate	Residents divided by number beds	OSCAR
% Medicaid	Medicaid as a share of total residents in the facility	OSCAR
% Medicare	Medicare as a share of total residents in the facility	OSCAR
% Private Pay	Private-pay as a share of total residents in the facility	OSCAR
Debt to Assets Ratio	Ratio of facility debts to assets	Medicare cost reports
Registered Nurses (RNs)	Number of RNs per resident day	OSCAR
Licensed Practical Nurses (LPNs)	Number of LPNs per resident day	OSCAR
Nurse aides	Number of NAs per resident day	OSCAR
Survey deficiencies	Count of survey deficiencies minus the state mean	OSCAR
Acuity index	Sum of percent of residents requiring various amounts of assistance in eating, toileting, transferring; and who are bedfast, chair bound, ambulatory, receiving respiratory care, suctioning, intravenous therapy, tracheostomy care, and parenteral feeding.	OSCAR
Urban	Located in urban market (0,1)	OSCAR
Market concentration	Herfindahl Index = sum of squared facility market shares in county	OSCAR
Northeast	Located in northeast region (0,1)	OSCAR
Midwest	Located in Midwest region (0,1)	OSCAR
South	Located in south region (0,1)	OSCAR
West	Located in west region (0,1)	OSCAR
Average Medicaid payment rate	Average Medicaid per diem in 2004 ($)	Grabowski et al. (2008)
Culture change P4P states	State rewarded culture change P4P at some point during study period (0,1)	State of Colorado (2009); Werner et al. (2010)
Culture change coalition states	State had culture change coalition at some point during study period (0,1)	Pioneer Network (2013)

Note: CCRC = continuing care retirement community; OSCAR = Online Survey, Certification and Reporting system; P4P = pay-for-performance.

the association between culture change implementation and all of the facility, market and state characteristics listed in Table 1 (excluding the debt-to-asset ratio due to missing data). Due to the small number of Green House implementers, we examined this model using only bivariate methods. The logistic regression model provides an estimate of the relationship between culture change implementation and each characteristic of interest, while controlling for the full set of characteristics.

Study Results

In 2004, we identified 17,031 nursing homes that had not implemented culture change. Over the 2004–2011 study period, the Pioneer Network's panel of experts suggested 291 (1.7%) of these nursing homes implemented culture change programs, with 11 of these nursing homes implementing The Green House Model.

Table 2 presents the bivariate (descriptive) results. Each cell in the table contains either the

Table 2. 2004 Characteristics of Nursing Homes Identified as Culture Change, Green House, and Nonimplementers in 2011

	(1) Culture Change Implementers by 2011	(2) Green House Implementers by 2011	(3) Nonimplementers by 2011
Profit status and affiliation			
Nonprofit (%)	66.32**	72.73**	27.42
Faith based (%)	19.93**	54.55**	5.51
Facility resources			
Chain owned (%)	43.99*	27.27	51.56
Part of CCRC (%)	21.99**	54.55**	6.57
Has Special Care Unit (%)	34.36**	45.45*	18.03
Size (beds)	137.16**	129.45	107.08
Occupancy rate (%)	83.49**	85.00	81.32
Medicaid share	53.75**	52.65	61.38
Medicare share	11.53	12.38	14.55
Private Pay share	34.71**	34.97*	24.07
Debt to Assets Ratio	0.72**	0.54	0.87
RNs per resident day	0.43**	0.34	0.44
LPNs per resident day	0.69**	0.82	0.80
NAs per resident day	2.35**	2.49*	2.21
Survey deficiencies (relative to state mean)	–1.03**	–1.37	0.0013
Acuity index	10.01*	10.33	10.15
Market competition			
Market concentration (Herfindahl index)	0.17**	0.15	0.21
State policies			
Average Medicaid payment rate (per day)	$135.39**	$137.73	$128.42
Culture change P4P states (%)	14.43**	0	9.12
Culture change coalition states (%)	94.50	81.82	91.81
Location			
Urban (%)	72.51**	81.82	64.34
Northeast (%)	17.87	18.18	16.56
Midwest (%)	54.98**	36.36	32.97
South (%)	14.09**	27.27	35.08
West (%)	13.06	18.18	15.39
N	291	11	16,740

Notes: Each cell contains either the proportion or mean of the particular variables in 2004 (rows) by culture change status in 2011 (columns). Column 1 contains summary statistics for those 291 facilities that implemented culture change over the 2004–2011 period, column 2 contains summary statistics for the subset of 11 facilities that implemented Green House, and column 3 contains the remaining 16,740 facilities that did not implement culture change. Tests of statistical significance are based on Wilcoxon Rank Sum Test in comparing columns 1 or 2 against column 3 (nonimplementers). CCRC = continuing care retirement community; RN = registered nurse; LPN = licensed practical nurse; NA = nurse aide; P4P = pay-for-performance.

**$p < .01$. *$p < .05$.

proportion or mean of the particular variables in 2004 (rows) by culture change status in 2011 (columns). Column 1 contains summary statistics for those 291 facilities that implemented culture change over the 2004–2011 period, column 2 contains summary statistics for the subset of 11 facilities that implemented Green House, and column 3 contains the remaining 16,740 facilities that did not implement culture change to the knowledge of the experts. Tests of statistical significance are based on Wilcoxon Rank Sum Test

in comparing columns 1 or 2 against column 3 (nonimplementers).

In these descriptive analyses, we found support for our hypotheses related to culture change and Green House implementation. In support of our first hypothesis, nursing homes that implemented culture change were more often nonprofit-owned (66% vs. 27%, $p < .01$) and faith-based. In support of the resources hypothesis, organizations that implemented culture change were more likely to be part of a CCRC, and larger in size. They also

had a higher occupancy rate and a special care unit of some type. Facilities that eventually implemented culture change had slightly fewer Medicaid residents, slightly more private-pay residents, and lower acuity. At baseline, nursing homes implementing culture change had fewer health-related survey deficiencies, more nurse aides (NAs), and a lower debt relative to assets. However, contrary to our expectation, implementers had fewer RN and LPN staff per resident day. In support of the market competition hypothesis, nursing homes typically implemented culture change in less concentrated (i.e., more competitive) markets. Implementation was higher in urban markets and in the Midwest and lower in the South. In support of the state policy hypothesis, states experienced greater culture change implementation when they rewarded culture change in the state P4P system and paid a higher Medicaid per diem. The only modeled variables not significantly associated with later culture change implementation and that did not support our hypotheses were Medicare census, case-mix, or being in a culture change coalition state.

In terms of the nursing homes that implemented Green House, the bivariate analyses suggested support for the profit status and affiliation and resources hypotheses. Specifically, nursing homes that implemented Green House were more likely to be nonprofit owned, faith-based, part of a CCRC, and have a special care unit, when compared to other nursing homes. They also had more private-payers prior to implementation and greater NA-staffing per resident day.

When we tested the hypotheses using a logistic regression model, we found support for the importance of profit status and facility resources. Table 3 reports the results of this logistic regression of culture change implementation. Nursing homes that implemented culture change were more often nonprofit (odds ratio 3.51) and larger in size relative to those facilities not implementing culture change. They were also more likely to have a special care unit of some type. Further, they had a slightly higher share of private-pay residents than nonimplementing nursing homes. Nursing homes implementing culture change had fewer health-related survey deficiencies at baseline, higher NA staffing per resident day, but lower LPN staffing per resident day. Implementation was higher in the Midwest region but lower in the South. We found some limited support for the state policy hypothesis in that a higher average Medicaid per diem was significantly related to implementation.

Table 3. Odds Ratios of Culture Change Implementation in 2011 in Relation to Baseline Characteristics (2004)

Variable	Odds Ratio
Profit status and affiliation	
Nonprofit	3.51**
Faith-based	1.35
Facility resources	
Chain owned	0.99
Part of CCRC	1.38
Has Special Care Unit	1.43**
Size (beds)	1.003**
Occupancy rate	1.28
% Medicaid	0.99**
% Medicare	0.99*
RNs per resident day	0.76
LPNs per resident day	0.62**
NAs per resident day	1.16*
Survey deficiencies (relative to state mean)	0.96**
Acuity index	1.02
Market competition	
Market concentration (Herfindahl Index)	0.93
State policies	
Average Medicaid payment rate (per day)	1.01**
Culture change pay-for-performance state	1.39
Culture change coalition state	1.79
Location	
Urban	1.30
Northeast	0.67
Midwest	1.57*
South	0.59**
N	16,835

Notes: Odds ratios are generated based on a logistic regression model of culture change implementation (over the 2004–2011 period) on all the characteristics contained in the table. The debt-to-asset ratio measure was excluded due to the large number of missing values. CCRC = continuing care retirement community; RN = registered nurse; LPN = licensed practical nurse; NA = nurse aide; P4P = pay-for-performance.
**$p < .01$. *$p < .05$.

Discussion and Implications

The implementation of meaningful culture change requires significant investment, vision, and leadership on the part of nursing homes, which is reflected in the finding that fewer than 2% of nursing homes were identified by experts to have implemented culture change over the 7-year period of study. As hypothesized, variables encompassing profit status and facility resources were predictive of culture change implementation including for-profit status, greater private-paying residents, fewer deficiencies, having a special care unit, more nursing assistants, and more beds. We also found some limited support for the importance of state policy in that a more generous Medicaid reimbursement rate was associated with greater culture change implementation.

Organizational mission suggests certain nursing homes may place a greater emphasis on facility culture (Comondore et al., 2009). Nonprofit facilities, for example, cannot legally distribute profits to shareholders. As a result, these facilities may put increased resources back into the facility in terms of efforts to advance resident quality of life and better staff-working conditions. In support of this point, implementers tended to be higher quality facilities prior to culture change implementation in terms of higher nursing assistant staffing and fewer health-related survey deficiencies. Implementation was also found to be highly linked with facility resources (Mor, Zinn, Angelelli, Teno, & Miller, 2004). Facilities with more private-pay revenue and more beds were able to invest in a culture change implementation. This result relates to the high costs of implementing and maintaining culture change and may be reinforced by the higher demand-responsiveness of private-paying residents who have the resources to seek out better quality nursing homes.

If providers and policymakers want to encourage culture change across a wider distribution of nursing homes, they will need to consider a range of approaches to encourage such implementation. Medicaid payment policy can be an important first step toward expanding the number of facilities implementing culture change. In our logistic regression model, the overall generosity of the state Medicaid payment rate was significantly associated with culture change implementation. However, Medicaid payment policies alone may not induce those most resource-challenged facilities to implement culture change, especially given the large upfront capital costs associated with certain culture change models (Jenkens et al., 2011). Arkansas House Bills 1363 and 1364 are an example of an innovative payment approach that attempts to address the large fixed costs associated with implementing comprehensive culture change models (Chi Partners, 2012). Signed into law in 2007, these Bills allow dollars collected under civil monetary penalties to be used for specialized reimbursements for nursing homes that implement a Green House project or an Eden Alternative program. Other state Medicaid programs and the Federal Medicare program that seek to expand the diversity of nursing homes implementing culture change models might consider this type of program.

Much has been written about the nursing home sector evolving into a two-tiered system (Mor, et al., 2004). The lower tier consists of nursing homes caring for predominantly Medicaid residents with fewer nurses and higher survey deficiencies. These nursing homes are disproportionately located in the poorest counties and more likely to serve African American residents. Based on our findings, culture change was generally not implemented in these lower tier facilities over our study period. Although the number of implementers was relatively small, the culture change movement will only widen the gulf in care practices between the two tiers if later implementers look similar to the implementers over our study period. Different policies can be used to lessen the disparity in the implementation of culture change across high- and low-tier nursing homes, but policymakers should stay vigilant to the unintended consequences of different policies to ensure they do not further exacerbate disparities (Konetzka & Werner, 2009). Ideally, policies must serve the dual purpose of both growing culture changes broadly, while also specifically targeting resource-challenged providers.

Even if resource-challenged nursing homes are provided additional payment advantages to implement culture change, one challenge for policymakers is whether these organizations have the infrastructure and resources to *successfully* implement and sustain a culture change. In this regard, a person-centered care initiative conducted in a large for-profit nursing home chain suggested three lessons for successful culture change implementation (Grant, 2008). First, nursing homes with poor histories of state survey compliance were not the best candidates for culture change. Our result related to deficiency citations and culture change implementation supports this finding. Second, culture change requires competent leadership. And finally, instability in facility leadership tended to undermine culture change progress. As policymakers seek to expand culture change to resource-challenged settings, they must consider the infrastructure and support that need to be present in these organizations to ensure successful implementation.

This study was limited in several ways. First, our identification of facilities that had implemented culture change was based on expert opinion. Thus, we acknowledge that our study may not have identified all the nursing homes implementing culture change over the 2004–2011 period. However, we have no reason to suspect that we have identified a biased sample of implementers. Further, given that we are studying the factors associated with implementation, even if we have missed nursing

homes implementing culture change, it will only introduce bias if those nursing homes are different from the nursing homes identified by the panel of experts. Moreover, if we have mistakenly assigned some true "implementers" to the nonimplementer column, this would only serve to bias our results downward toward not observing meaningful differences across the two groups. Second, as a related issue, we measured culture change implementation as a binary outcome. Obviously, certain nursing homes may have more intensive culture change models relative to others (Sullivan et al., 2013). Future research in this area might construct an index of culture change implementation rather than the binary measure we used in this study. Also related to our sample, in our analysis of Green House implementation, we acknowledge that the small number of nursing homes implementing this model provided only limited precision to detect statistically meaningful results. Nevertheless, we felt it was important to analyze the characteristics of a particular culture change model thought to systemically implement organizational and environmental practices.

Finally, our analysis of culture change implementation is missing variables related to consumer engagement and demand. Many prospective nursing home residents may not factor culture change into their choice of nursing home. In a report for the Assistant Secretary for Planning and Evaluation, Shugarman and Brown (2006) conducted a series of focus groups with nursing home residents and their family members. Their top priority in the choice of a nursing home was location. The second most common stated priority was that the facility staff took "good care" of the residents. Good care could obviously encompass dimensions of culture change such as person-centered care, but it likely related more to clinical outcomes than resident autonomy, for example. Policymakers might consider more widespread distribution of report card measures that emphasize culture change practices. Nursing Home Compare, the federal report card effort, currently emphasizes quality-of-care metrics and does not provide any data on quality of life in the nursing homes. The development and promotion of these measures on report cards could potentially encourage nursing homes to increase and improve their delivery of culture change practices in order to increase market share (Berger, Joy, Hutfless, & Bridges, 2013).

The implementation of culture change in many U.S. nursing homes has been an important development. A key directive of the Affordable Care Act is to transform care into a more person-centered system; the nursing home culture change movement is wholly consistent with this philosophy. However, the implementation of culture change has been slower in more resource-challenged nursing homes, suggesting a potential role for public policy in encouraging further growth of this model in these nursing homes. In particular, payment policy, regulatory reform, and technical assistance are avenues that might encourage further implementation of culture change.

References

American Medical Directors Association. (2010). The role of the medical director in person-directed care. AMDA White Paper, G10. Retrieved March 29, 2012, from http://www.amda.com/governance/whitepapers/G10.cfm

Banaszak-Holl, J., Castle, N. G., Lin, M., & Spreitzer, G. (2013). An assessment of cultural values and resident-centered culture change in U.S. nursing facilities. *Health Care Management Review*, *38*, 295–305. doi:10.1097/HMR.0b013e3182678fb0

Banaszak-Holl, J., Zinn, J. S., & Mor, V. (1996). The impact of market and organizational characteristics on nursing care facility service innovation: A resource dependency perspective. *Health Services Research*, *31*, 97–117.

Berger, Z. D., Joy, S. M., Hutfless, S., & Bridges, J. F. (in press). Can public reporting impact patient outcomes and disparities? A systematic review. *Patient Education and Counseling*. doi: S0738-3991(13)00091-8 [pii]10.1016/j.pec.2013.03.003

Bowers, B. J., & Nolet, K. (2014). Developing the Green House nursing care team: Variations on development and implementation. *The Gerontologist, 54*(Suppl. 1), S53–S64. doi:10.1093/geront/gnt109

Castle, N. G. (2001). Innovation in nursing homes: which facilities are the early adopters? *The Gerontologist*, *41*, 161–172. doi: 10.1093/geront/41.2.161

Centers for Medicare & Medicaid Services. (2005). 8th Round SOW Contract. Retrieved August 9, 2013, from http://www.cms.hhs.gov/QualityImprovementOrgs/downloads/8thSOW.pdf

Centers for Medicare & Medicaid Services. (2011). Use of Civil Money Penalty (CMP) Funds by States. (S&C: 11-42-NH). Retrieved August 9, 2013, from https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/downloads/SCLetter11_42.pdf

Chi Partners. (2012). Changing the physical environment of nursing homes: Addressing state regulatory hurdles. Retrieved August 6, 2013, from http://chipartners.net/wp-content/themes/ChiPartners-theme/Nursing.Home_.Issue_.Brief_.pdf

Comondore, V. R., Devereaux, P. J., Zhou, Q., Stone, S. B., Busse, J. W., Ravindran, N. C., . . . Guyatt, G. H. (2009). Quality of care in for-profit and not-for-profit nursing homes: Systematic review and meta-analysis. *BMJ, 339*, b2732. doi:10.1136/bmj.b2732

Cowles, C. M. (2002). *Nursing home statistical yearbook (2002)*. Montgomery Village, MD: Cowles Research Group.

Doty, M. M., Koren, M. J., & Sturla, E. L. (2008). *Culture change in nursing homes: How far have we come? Findings from the Commonwealth Fund 2007 National Survey of Nursing Home*. New York: The Commonwealth Fund.

Dunton, N., Bott, M., Gajewski, B., Lee, R., Boyle, D., Bonnel, W., . . . Rachlin, R. (2008). Trends in Kansas nursing facility turnover after the implementation of a state incentive program. Retrieved March 1, 2013, from http://s3.amazonaws.com/zanran_storage/www.nursingoutcomes.org/ContentPages/2466239170.pdf

Elliot, A. (2010). Occupancy and revenue gains from culture change in nursing homes: A win-win innovation for a new age of long-term care. *Seniors Housing & Care Journal*, *18*, 21–36.

Elliot, A., Cohen, L. W., Reed, D., Nolet, K., & Zimmerman, S. (2014). A "recipe" for culture change? Findings from the THRIVE survey of culture change adopters. *The Gerontologist*, *54*(Suppl. 1), S17–S24. doi:10.1093/geront/gnt133

Grabowski, D. C., Feng, Z., Intrator, O., & Mor, V. (2008). Medicaid nursing home payment and the role of provider taxes. *Medical Care Research and Review*, *65*, 514–527. doi:10.1177/1077558708315968

Grant, L. A. (2008). Culture change in a for-profit nursing home chain: An evaluation. Retrieved March 2, 2013, from http://www.commonwealthfund.org/~/media/Files/Publications/Fund%20Report/2008/Feb/Culture%20Change%20in%20a%20For%20Profit%20Nursing%20Home%20Chain%20%20An%20Evaluation/Grant_culturechangefor%20profitnursinghome_1099%20pdf.pdf

Grant, L. A., & Norton, L. (2003). A stage model of culture change in nursing facilities. Paper presented at the Annual Scientific Meeting of the Gerontological Society of America, San Diego, CA. Retrieved from http://nhqi.hsag.com/pcc/4D_PCC_Staging_Paper.pdf

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *Milbank Q*, *82*, 581–629. doi:10.1111/j.0887-378X.2004.00325.x

Hicks, L. L., Rantz, M. J., Petroski, G. F., & Mukamel, D. B. (2004). Nursing home costs and quality of care outcomes. *Nursing Economics*, *22*, 178–192.

Hill, N. L., Kolanowski, A. M., Milone-Nuzzo, P., & Yevchak, A. (2011). Culture change models and resident health outcomes in long-term care. *Journal of Nursing Scholarship*, *43*, 30–40. doi:10.1111/j.1547-5069.2010.01379.x

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.

Jenkens, R., Sult, T., Lessell, N., Hammer, D., & Ortigara, A. (2011). Financial Implications of THE GREEN HOUSE Model. *Senior Housing & Care Journal*, *19*, 3–22.

Konetzka, R. T., & Werner, R. M. (2009). Disparities in long-term care: Building equity into market-based reforms. *Medical Care Research Review*, *66*, 491–521. doi:10.1177/1077558709331813

Koren, M. J. (2010). Person-centered care for nursing home residents: The culture-change movement. *Health Affairs (Millwood)*, *29*, 312–317. doi:10.1377/hlthaff.2009.0966hlthaff.2009.0966

Miller, S. C., Cohen, N., Lima, J. C., & Mor, V. (2014). Medical capital reimbursement policy and environmental artifacts of nursing home culture. *The Gerontologist, 54*(Suppl. 1), S76–S86. doi:10.1093/geront/gnt141

Miller, S. C., Looze, J., Shield, R., Clark, M. A., Lepore, M., Tyler, D., . . . Mor, V. (2013). Culture change practice in U.S. nursing homes: Prevalence and variation by state Medicaid reimbursement policies. *The Gerontologist*. Advance online publication. doi:10.1093/geront/gnt020

Misiorski, S., & Rader, K. (2005). The continuum of direction. Retrieved March 29, 2012, from http://www.pioneernetwork.net/Data/Documents/ContinuumPersonDirectedCulture.pdf

Mor, V., Zinn, J., Angelelli, J., Teno, J. M., & Miller, S. C. (2004). Driven to tiers: Socioeconomic and racial disparities in the quality of nursing home care. *Milbank Quarterly*, *82*, 227–256. doi:10.1111/j.0887-378X.2004.00309.x

Pacific Health Policy Group. (2009). Oklahoma focus on Excellence. A report prepared for the Oklahoma Health Care Authority. Retrieved March 30, 2012, from http://www.okhca.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=11076

Patient Protection and Affordable Care Act. (2010). Pub. L. No. 111–148, 124 Stat. 378.

Pioneer Network. (2013). Find state coalitions. Retrieved April 11, 2013, from www.pioneernetwork.net/Coalitions/Find/

Public Consulting Group. (2011). *Nursing facilities pay for performance review*. A report submitted to the Colorado Department of Health Care Financing and Policy, Denver, CO.

Rahman, A. N., & Schnelle, J. F. (2008). The nursing home culture-change movement: Recent past, present, and future directions for research. *The Gerontologist*, *48*, 142–148. doi:10.1093/geront/48.2.142

Rye, C. B., & Kimberly, J. R. (2007). The adoption of innovations by provider organizations in health care. *Medical Care Research Review*, *64*, 235–278. doi:10.1177/1077558707299865

Shier, V., Khodyakov, D., Cohen, L. W., Zimmerman, S., & Saliba, D. (2014). What does the evidence really say about culture change in nursing homes? *The Gerontologist, 54*(Suppl. 1), S6–S16. doi:10.1093/geront/gnt147

Shugarman, L. R., & Brown, J. A. (2006). *Nursing home selection: how do consumers choose? Volume I: Findings from focus groups of consumers and information intermediaries*. Prepared for Office of Disability, Aging and Long-Term Care Policy, Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services, Contract #HHS-100-03-0023, Washington, DC.

State of Colorado Department of Health Care Policy and Financing. (2009). *2009 nursing facilities pay for performance review*. Boston, MA: Public Consulting Group. Retrieved from www.colorado.gov/cs/Satellite?blobcol=urldata&blobheader=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251825889266&ssbinary=true

Sullivan, J. L., Shwartz, M., Burgess, J. F., Jr., Pekoz, E. A., Christiansen, C. L., Gerena-Melia, M., & Berlowitz, D. (2013). Person-centered care practices and quality in Department of Veterans Affairs nursing homes: Is there a relationship? *Med Care*, *51*, 165–171. doi:10.1097/MLR.0b013e3182763230

Werner, R. M., Konetzka, R. T., & Liang, K. (2010). State adoption of nursing home pay-for-performance. *Medical Care Research Review*, *67*, 364–377. doi:10.1177/10775587093508851077558709350885

White-Chu, E. F., Graves, W. J., Godfrey, S. M., Bonner, A., & Sloane, P. (2009). Beyond the medical model: The culture change revolution in long-term care. *Journal of American Medical Directors Association*, *10*, 370–378. doi:10.1016/j.jamda.2009.04.004S1525-8610(09)00135-2

Zimmerman, S., & Cohen, L. W. (2010). Evidence behind The Green House and similar models of nursing home care. *Aging Health*, *6*, 731–751.

Zinn, J. S., Mor, V., Feng, Z., & Intrator, O. (2007). Doing better to do good: The impact of strategic adaptation on nursing home performance. *Health Services Research*, *42*, 1200–1218. doi:10.1111/j.1475-6773.2006.00649.x