Inside the Green House “Black Box”: Opportunities for High-Quality Clinical Decision Making

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Objective. To develop a conceptual model that explained common and divergent care processes in Green House (GH) nursing homes with high and low hospital transfer rates.

Data Sources/Settings. Eighty-four face-to-face, semistructured interviews were conducted with direct care, professional, and administrative staff with knowledge of care processes in six GH organizations in six states.

Study Design/Data Collection. The qualitative grounded theory method was used for data collection and analysis. Data were analyzed using open, axial, and selective coding. Data collection and analysis occurred iteratively.

Principal Findings. Elements of the GH model created significant opportunities to identify, communicate, and respond to early changes in resident condition. Staff in GH homes with lower hospital transfer rates employed care processes that maximized these opportunities. Staff in GH homes with higher transfer rates failed to maximize, or actively undermined, these opportunities.

Conclusions. Variations in how the GH model was implemented across GH homes suggest possible explanations for inconsistencies found in past research on the care outcomes, including hospital transfer rates, in culture change models. The findings further suggest that the details of culture change implementation are important considerations in model replication and policies that create incentives for care improvements.

Key Words. Medical decision making, nursing, qualitative research, long-term care, nursing homes, culture change

Evidence suggests that between 25 percent and 70 percent of hospital transfers from nursing homes are “potentially avoidable” (Ouslander and Maslow 2012; U.S. Department of Health and Human Services [USDHHS] 2013; Ouslander et al. 2014). Older adults from long-term care settings are particularly vulnerable to the risks of hospitalization, which include hospital-acquired complications, morbidity, mortality, and excess health care expenditure

(Ouslander et al. 2014, p. 162). Well-documented contributors to avoidable hospitalizations include delays in identifying change in resident condition and resulting failure to institute timely interventions, communication difficulty between family and staff and between staff and primary care providers (PCPs), inability of staff to provide needed treatment, limited use of hospice services, and insufficient availability of PCPs (Grabowski, O'Malley, and Barhydt 2007; Levy, Palat, and Kramer 2007; Polniaszek, Walsh, and Wiener 2011; Ouslander and Maslow 2012). As such, the rate of transfers from nursing homes to hospital, including admissions and Emergency Department visits, is generally accepted as reflecting the quality of care and the appropriateness of clinical decision making prior to transfer (Ouslander and Maslow 2012; U.S. Department of Health and Human Services [USDHHS] 2013).

Nursing home culture change has been promoted as a promising approach to improving quality of care, reducing negative clinical outcomes, and potentially decreasing hospital transfers (Rahman and Schnelle 2008; Koren 2010; Miller et al. 2014). Koren (2010) identified five core characteristics of a nursing home that have undergone culture change, including delivery of person-centered care, provision of a homelike environment, collaborative decision making, close relationships between residents and staff, and empowered direct care workers. The culture change movement, beginning in the 1980s and bolstered by support from the Centers for Medicare and Medicaid Services 8th Scope of Work (Centers for Medicare and Medicaid Services [CMS] 2004; Rahman and Schnelle 2008; Koren 2010), “represents a fundamental shift in thinking about nursing homes showing promise in improving quality of life as well as quality of care” (Koren 2010, p. 312).

While there is evidence for improvements in both resident and family satisfaction and quality of life resulting from culture change initiatives (Kane et al. 2007; Lum et al. 2008–2009; Shier et al. 2014), the evidence is much less clear, and even contradictory, concerning the impact of culture change on clinical outcomes or the mechanisms through which improved outcomes might be expected (Hill et al. 2011; Grabowski et al.

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2014; Miller et al. 2014; Yoon et al. 2015). In fact, it has been noted that a clear gap in knowledge remains regarding the care processes associated with improved clinical outcomes in culture change homes (Rahman and Schnelle 2008). One recently reported study made a critical step toward filling this gap by exploring the association between the extent of culture change implementation and rates of resident hospitalization (Miller et al. 2014). The study found that the extent of culture change was negatively correlated with hospitalization rates. However, the authors noted that “further longitudinal studies examining the association between the extent and types of culture change practices implemented and changes in quality indicators are recommended” (Miller et al. 2014, p. 1682).

The Green House (GH) model is one of the most comprehensive and standardized models of nursing home culture change. GH homes are independent units commonly operated under the same license as its “legacy home” (i.e., traditional nursing home that remains open alongside the GH, often at the same location). Each GH home has 8–12 *elders* (residents) and is staffed by *Shahbazim* (the GH designation for certified nursing assistants), universal workers who provide direct care and manage daily operation of the house. Nurses provide skilled care and supervise the clinical components of *Shahbazim* work. The standardization of these elements across homes makes the GH model ideally suited for studying the link between care processes and clinical outcomes.

The purpose of the study reported here, which was part of The Research Initiative Valuing Eldercare, was to develop a conceptual model examining the care processes employed in GH homes, comparing those in GH homes with higher to those with lower hospital transfer rates, to identify the care processes associated with the GH model and the differences between care processes found in GH homes with higher transfer rates to those found in homes with lower hospital transfer rates.

METHODS

Qualitative research methods, known to be useful for describing complex phenomena (Bradley, Curry, and Devers 2007), were used to examine how the GH model influences care processes and ultimately, health outcomes, and to identify any differences between homes with higher and lower hospital transfers. The central purpose of grounded theory is development of a conceptual model that explains a process, its subcomponents, the relationships among

them, and influencing conditions (Strauss 1987; Bowers and Schatzman 2009).

Grounded theory relies on constant comparisons of data across theoretically distinct situations (e.g., low and high transfer rate homes) to draw out unique components of processes and their links to subcomponents and outcomes. This is achieved by describing the variation among processes (care processes in this case), and through comparative analysis that reveals the conditions associated with, and consequences of, those variations. The results of a grounded theory study ideally indicate the range of possibilities rather than frequency or distribution. The methodology employs a rigorous and systematic approach to data collection and analysis (Sofaer 1999). Approval for the study was provided by the University of Wisconsin-Madison Institutional Review Board.

Site Selection

The six GH organizations, composed of 28 separate GH homes that were included in this study, were identified from a larger sample of 14 eligible GH organizations across 11 states (Cohen et al, 2016). MDS 3.0 data (verified by documentation during site visits) were used to calculate hospital transfer rates—defined as the number of transfers (either ED visits or admissions) per 1,000 resident days—for a period of 18 months prior to the study. The three GH organizations with the highest transfer rates and the three GH with the lowest transfer rates were included in this study. The mean hospital transfer rates were 1.87/1,000 and 0.36/1,000 resident days, respectively (overall mean = 1.16; SD = 0.65). Each GH home used the same staffing pattern for direct care staff: two Shahbaz (Certified Nursing Assistant/universal worker) on days and evenings and one on nights. A single-licensed nurse was responsible for up to three GH homes. All GH homes had at least some residents with dementia; many had several. None of the participating GH homes was dementia specific. Based on age and a general measure of functional ability (scores on activity of daily living deficits), elders in the high transfer homes, as a group, were not statistically different from elders in the low transfer rate homes.

Sample and Recruitment

Participants were chosen for their likely knowledge about care processes. In each GH, interviews were conducted with Shahbaz (direct care workers with more than 6 months experience, all certified nursing assistants, $N = 25$),

nurses (licensed practical nurses and registered nurses, $N = 18$), and department directors from speech therapy, physical therapy, and dietary ($N = 22$), individuals with responsibility for quality improvement if not one of the above ($N = 3$). Also administrators ($N = 3$), directors of nursing ($N = 6$), and attending PCPs—either a physician ($N = 5$) or nurse practitioner ($N = 2$)—reporting significant practice time in the setting participated. Participating physicians were also medical directors, all working directly with nurse practitioners and spending significant practice time in the home. A total of 84 interviews were conducted.

A designated staff person at each of the sites was sent a list of participant types the researchers hoped to interview during the site visits, and asked to coordinate the meetings. Participation in each site was voluntary. A few documented refusals were related to availability.

Data Collection

Three health services researchers with many years of experience in long-term care conducted all site visits, two nurse/sociologists (BB & BR), and one with an advanced degree in adult education (KN). Data collection began at the GH homes with the lower hospital transfer rates. Consistent with grounded theory methodology (Strauss 1987), researchers began interviews with open, nondirective interview questions which became successively more focused as the study proceeded and areas of focus were identified. Staff were asked to describe how care was provided in the GHs, how they believed the GH model influenced resident care processes, and their experiences related to decisions about basic care and hospital transfers. All participants were asked for detailed examples of their experiences with and observations of the care. Follow-up probes and requests for detailed examples to illustrate their perceptions and experiences were used. Additional interview questions, generated along the way, were used to probe links between clinical care processes and outcomes and the conditions that influenced care processes. All interviews began with the same list of open-ended, nondirective questions. As focus areas were identified, questions were added to subsequent interviews to probe these areas. This strategy is designed to facilitate explicit comparisons across homes in each group and between the two groups. For example, evidence from the early interviews in lower transfer rate homes indicated that some therapists deliberately aligned their schedules to increase interaction with the PCPs. Consequently, a question about scheduling was included in all subsequent interviews with therapists. Because all staff interviewed had experience in tra-

ditional nursing homes, they were also asked to compare their experiences in GH homes to that in traditional homes. Interviews lasted for 30–90 minutes. All interviews were audio recorded, transcribed, and uploaded to NVivo software (NVivo, 2012) to facilitate analysis. Any observations made by researchers while in the setting that were relevant to emerging focus areas were folded into subsequent interview questions.

Data Analysis

The three researchers who conducted the site visits, along with another nurse researcher experienced in long-term care (PhD prepared with grounded theory expertise), conducted the data analysis. Grounded theory involves a detailed line-by-line analysis of data, focusing on how participants understand and describe a phenomenon, the processes they engage in as a result of their understanding, and the consequences in terms of actions (Strauss 1987; Charmaz 2006; Bowers and Schatzman 2009). Data analysis is continuous and iterative, allowing analysis from earlier interviews to inform subsequent interview questions—as described above—and selection of participants who are most likely to have the knowledge required for greater depth (theoretical sampling). The research team coded the data as a group using line-by-line analysis, resolving rare discrepancies about codes through discussion until consensus was achieved.

Data were coded in three stages; open, axial, and selective. Open coding (identifying and coding the constructs used by participants to describe a phenomenon) was used to identify the care processes described by staff and core elements of the GH model that influenced care processes. For example, the Shahbaz reported high levels of familiarity with elders (compared to traditional nursing homes) and frequent, unplanned interactions in the GH homes as significantly influencing care processes. Axial coding (identifying associations among codes) was used next to determine the nature of relationships between care processes and the GH model, and to compare care processes found across the study sample. For example, the researchers explored what staff in each GH home did in response to the greater familiarity and more frequent interactions. Finally, selective coding was used to identify any additional conditions that influenced care processes. This was achieved by identifying conditions that differed between the two groups of GH homes (higher and lower transfer rates), and how these differences influenced care processes. For example, we found discussions of staff empowerment were similar

within each group (high or low transfer rates) but differed *between* the two groups. This finding led the researchers to explore *how* variations in staff interpretations of empowerment influenced care processes, and how systematic this variation was between high and low transfer rate homes. This was achieved by adding questions about empowerment to all subsequent interviews and reviewing prior interviews for relevant passages. Participant quotes were selected to represent the dominant view. There was a high level of consistency across views of participants in each home.

Memoing—the discussion and documentation of methodological and conceptual decisions—was used throughout the study to inform and guide the coding process and the development of the conceptual model. Memoing involved mapping evolving conceptual understandings of codes, their relationships to one another, and their fit to the overall experiences of the participants. As new data were collected and additional analyses conducted, understandings were amended to fit new or different conceptualizations of ideas presented by participants. The final model was constructed after the research team determined that no new information was found in the transcripts and the overall model best represented the range of what participants experienced, including rare events, not just the most common experience.

RESULTS

Overall, findings suggest that the GH model creates significant opportunities to identify, communicate, and respond to early changes in an elder's condition. However, while staff in the low transfer rate GHs consistently engaged in care processes that maximized opportunities created by the model, many staff in the high transfer rate GHs did not. Figure 1, detailed below, presents a conceptual model of the common and divergent care processes across GH homes.

GH Elements: Increased Opportunities for Communication about Change in Condition

Greater Familiarity. In all GH homes, Shahbazim described greater familiarity with elders—including elders' preferences, idiosyncrasies, daily routines, and functional ability—than had been the case when they worked as certified nursing assistants (CNAs) in traditional nursing homes. Other staff interviewed also described Shahbazim as much more familiar than CNAs with intimate

Figure 1: Conceptual Model of Common and Divergent Care Processes and Consequences in Green House Nursing Homes with Low and High Hospital Transfer Rates

Note. Only reflective of Green House elements found relevant to care processes in the study.

details about each elder. They all attributed this greater familiarity to the universal role and consistent assignment of Shahbazim. As universal workers (and unlike CNAs in traditional homes), Shahbazim gained a multiperspective view of elders and their health conditions because they observed and interacted with elders across activities and throughout the day, including meals, social activities, and treatments, in addition to direct personal care.

Here, we have ten [residents], but you get time to know them. You know their rhythm. You know their routine. This one is starting to stand up and get antsy. He either needs to use the restroom, or it's too stimulating. . . So again, a smaller environment, we get to learn that. And we notice the small changes in them. . . so we're able to communicate with the nurses. Hey, red flag. Here's something that's not right. Shahbaz (Low Transfer Site 2)

All PCPs (physicians and nurse practitioners) in the lower transfer rate GH homes, while only a few PCPs (one nurse practitioner and one physician) in one of the three higher transfer rate homes, spontaneously described the Shahbazim as a valuable source of information—due to their high level of familiarity with the elders—and as an important

conduit to good care, emphasizing the importance of strong, reciprocal relationships with Shahbazim.

But I'm talking to the universal worker in the GH, so I get that information because you always ask what's the medical issue. But a lot of it's what's the functional status . . . and I get that much more easily from the GH than I do in the [legacy], because I'm talking to the person that's actually doing the work. I walk into the Legacy House, and I'm talking to the LPN, who's gotten the report from CNAs, who's gotten report from the nurse, who's gotten the report from the nurse that was on before her or him . . . but it's not the same. Physician (High Transfer Site 2)

You only have to find the Shahbaz to get all the information you need about how a resident is doing. Physician (Low Transfer Site 3)

Increased Frequency of Interaction. Green House homes (Figure 2) differ considerably from traditional nursing homes in physical layout. Elders' rooms are arranged in a semicircle around a common area consisting of hearth/living room, dining area, and kitchen. Elders exit their rooms into the common area. All visitors enter into the same common space. The result is an ongoing mingling of elders, staff, and visitors, creating continuous opportunities for interaction.

This "bumping into each other," in the common area, brought people together who would otherwise only occasionally interact. For example, physicians and NPs described "bumping into" care staff and family members as much more likely with the layout of GH homes, creating opportunities for informal conversations, information exchange, and more intimate relationships with families. Staff in all six GH homes described the resulting opportunities for identifying and intervening early in elder change of condition.

There's no . . . sneaking in and out or missing someone going down the hall . . . When you have an open area like in the cottages, people are bumping into each other constantly. So if the occupational therapist (OT) is there, you bump into them. They're not down at the end of another hall. So you see people, and they mention things to you. Physician (Low Transfer Site 2)

Divergences between High and Low Transfer Rate GH Homes

Staff descriptions of familiarity with elders were similar across the six GH homes. However, the two groups differed when it came to maximizing opportunities. Staff in GH homes with lower transfer rates consistently recognized

Figure 2: Floor Plan for Green House Homes

Note. BR, Bedroom

and built on these opportunities. Homes with higher transfer rates generally failed to do so.

Maximizing Opportunities for Communicating Change of Condition. The three GH homes with lower hospital transfer rates provided many examples of decisions and activities that maximized the opportunities created by the GH model.

Aligning Schedules. Several staff in GH homes with lower transfer rates described deliberately maximizing opportunities to gather and share information about elders. For example, physical therapists learned the schedules of PCPs, altering their own schedules to maximize the possibility of “bumping into” the PCP. One PCP described how a “chance meeting” with the OT led to a significant reduction in the time required to “get to the right treatment.” The PCP in this instance was unaware that the OT had altered her schedule to “bump into” the PCP.

Yes I ran into an OT who said Mrs. A was not progressing and having a lot of pain. . . . So I made a suggestion. The OT said that we had already tried that and it didn't work. So together we agreed on a new approach. If that hadn't happened it could have been days to get there. Nurse Practitioner (Low Transfer Site 1)

Being Available. Primary care provider accessibility was identified as an important factor in speed and effectiveness of communication about resident change in condition. PCPs in lower transfer rate GH homes deliberately made themselves available and accessible to nurses, therapists, Shahbazim, and family members. They did this in several ways, including selecting a central place to sit while reviewing notes (often the dining table), engaging staff and families in conversation, making eye contact, and being accessible by phone or text into the evening. Efforts to increase accessibility were also initiated by the GH homes. In one low transfer rate home, the administrator and DON met with the attending physician to request replacing an NP who was seen as “inaccessible” to the staff.

Minimizing the Pool of Actors. While not dependent on the GH model, the GH homes with lower transfer rates further increased the effectiveness of communication by deliberately restricting the pool of PCPs they interacted with, making maximal use of the familiarity and comfort between staff and PCPs. Managers in GH homes with lower transfer rates negotiated with local hospitals and medical practices to decrease the number of providers who might be in a position to make care decisions about the elders. For example, in one GH home that had an extensive set of on-call physicians, the administrator and (DON) successfully requested that the practice reduce the number of on-call physicians. In another GH home, the DON met with local hospital administrators to request assigning a limited number of physicians admitting to the GH home from their hospital.

We met with the hospital administrator to see if they could really reduce the doctors who were discharging to us. We didn't know them. They didn't know us. The communication wasn't good. . . . DON (Low Transfer Site 1)

Lowering the Threshold. Care processes described by nurses in GH homes with lower transfer rates reflected a lower threshold for reporting an elder's change in condition. Care staff described how maximizing informal communication

led to early sharing of subtle changes before they reached a sufficient level of significance for staff to initiate a more formal contact with the same provider. That is, telephoning or faxing the PCP to report an elder's change in condition would require a more significant change than was necessary to "just mention it" during a casual interaction, particularly when they interacted frequently and had a comfortable relationship. GH nurses in three lower transfer GH homes compared GH homes to other place they had worked, and the significant consequences for earlier reporting and earlier intervention.

(Responding to a question about reporting change of condition to PCPs) But it probably doesn't reach the bar of contacting you know, so it's earlier. It's like a little bit of a rash. Well, I actually wouldn't call anyone about this. It's so minimal, and wait to see if it develops. By tomorrow, it's developed into something. So I think it gives you an earlier insight into change of condition. Nurse (Low Transfer Site 3)

Interpreting Empowerment. Worker empowerment in the GH model is intended to promote Shahbazim taking responsibility for running the GH, making sure the work is done, self-scheduling, and planning activities. Empowerment was found in this study to be an important category that influenced the use of opportunities for communicating about resident condition that diverged substantially between GH homes with high and low transfer rates. In particular, empowerment was interpreted quite differently in the two groups of GH homes. Shahbazim in two of the GH homes with lower hospital transfer rates spontaneously expressed a great sense of responsibility and ownership over elder care and outcomes. In all three of the lower transfer rate homes, Shahbazim reported bringing information about elder changes to the nurses immediately, feeling a sense of empowerment in being a vital part of the clinical team.

I think we do an excellent job of that, and one of the reasons are it's the same people we take care of every day. You get the feeling of ownership and where in another facility, where staff is changing constantly in and out, you can always kind of let it slide . . . somebody else probably said something. But here, they're our people. And so if we see a little red area on their buttocks, it's something that we tell the nurse right away. Shahbaz (Low Transfer Site 1)

A nurse in the same site said:

Say one of the Shahbaz sees an elder who is having difficulty swallowing. They immediately let us know. We, then can be more aware of it. If we see that, yes, this is a problem, we can contact our doctor. Nurse (Low Transfer Site 1)

When Shahbazim in these three homes thought that “not enough” was being done for an elder, they directly advocated with the nurses and went directly to PCPs when they believed the nurses had insufficiently conveyed their concerns or felt the nurse failed to appreciate the gravity of a situation.

As soon as we knew that, we immediately were able to jump on it, we went to the nurse, and we talked to the doctor, and that helped. Shahbaz (Low Transfer Site 2)

A nurse in the same home said:

They're allowed to consult with therapists. They're allowed to say, I see this and go to a therapist, occupation or speech . . . and I think they enjoy that here. Nurse (Low Transfer Site 2)

Failing to Maximize Opportunities for Communicating Change of Condition. Despite the opportunities for improved communication of change in condition, none of the staff interviewed in GH homes with higher hospital transfer rates described organizing their work to take advantage of the opportunities. While everyone identified greater familiarity with elders and more frequent interaction as important benefits of the model, none described strategies to maximize these opportunities. Moreover, staff in each of the GH homes with higher transfer rates described barriers to this early sharing of an elder's status change. In one GH home, the medical director communicated only through the DON, avoiding direct contact with staff in the GH home.

It's going to be the Director of Nursing, usually my first person that I go to, and then she tracks it down. Physician (High Transfer Site 1)

An NP in a high transfer rate home was described by staff as unapproachable and unresponsive, discouraging staff interaction. In this GH home, some staff continued to fax change of condition reports and other requests to the medical clinic, despite the NP's daily presence in the GH home.

Well, she's just not approachable (the Nurse Practitioner). No one wants to say anything to her. So they all kind of stay away from her, don't talk to her when she is in the home. DON (High Transfer Site 1)

The responsible physician would read the faxes, make a decision, and then deploy the NP to see individual elders, based on information received

via fax. Nurses indicated this process often led to considerable delay, essentially undermining what could have been a benefit of the model.

In two of the GH homes with higher transfer rates, nursing staff and Shahbazim described physical therapists as keeping inflexible schedules that did not facilitate interaction. Furthermore, none of the therapists in these GH homes mentioned the advantages of interacting with PCPs. Instead, they described scheduling in the GH homes as challenging as they had to consider elder's preferences.

Significantly, only one of the physicians in the three GH homes with high transfer rates described the information held by Shahbazim as different in value than information held by CNAs in traditional nursing homes. Two of the medical directors in the GH homes with higher hospital transfer rates denied any difference in either information gathering efficiency or Shahbazim familiarity with elders. However, neither considered Shahbazim *or* CNAs to be particularly good sources of information, in any setting, and chose instead to discuss elder condition only with licensed nursing staff or the DON.

Interpreting Empowerment. In contrast to the lower transfer rate homes, some (but not all) Shahbazim in the GH homes with higher hospital transfer rates described empowerment as making decisions about all aspects of the elder's care, going to nurses only when they believed it was necessary. One home in particular showed significant variation with more recently hired Shahbazim being more collaborative than those with long tenures. Department heads and PCPs in these GH homes voiced concern that some Shahbazim were "overempowered," stepping outside Shahbazim boundaries. In two of the higher transfer GH homes, Shahbazim described initiating treatments for elder clinical problems without consulting the nurses or other care staff (e.g., encouraging a low carbohydrate diet for an overweight elder because that was how the Shahbaz's family member had lost weight). In these GH homes, the DON and several of the nurses described Shahbazim as refusing to follow orders from the speech pathologist and ignoring instructions from the nurses, particularly if they disagreed with treatment plans. Moreover, rather than passing on information quickly to the nurses or PCPs, these Shahbazim considered themselves responsible for at least some care decisions and often delayed passing on change of condition information until they had tried something they thought might help first.

Now that varies in different places. In some [houses], the nurses say the Shahbaz are too empowered. They don't listen to me. When I ask them to do something, they say, no, I'm not going to do it that way. Nurse (High Transfer Site 2)

They feel like they know their residents, and they feel like they can make that decision. However, I don't think they see . . . the risk that is associated with making that change on their own. Dietitian (High Transfer Site 1)

Consequences

Lowering the threshold for communicating change in condition may reduce delays in PCP response to significant changes in condition by compressing the time required to assess and initiate an intervention. This process relied, in turn, on Shahbazim immediately reporting a change in condition to nurses (interpreting empowerment as being a team member) and effective communication between nurses and PCPs. Nurses and PCPs consistently expressed the belief that time to treatment, under these conditions, was shorter than in traditional nursing homes where changes in condition are often communicated by fax and responses may be delayed accordingly.

Primary care providers in the GH homes with lower hospital transfer rates also described the importance of close relationships with families, and how much closer these relationships were in GH homes. The major consequence described by PCPs was their greater willingness to have "difficult conversations" with family members, for example about avoiding hospital transfers at the end of life. In addition, they believed that the family's familiarity and comfort with staff and PCPs made families more comfortable keeping their relative in the GH at the end of life. As one PCP noted, the greater ease in explaining to families what was likely to happen after transfer to a hospital, being clear about what would be provided if they stayed in the GH home, the more likely the family was to decline a hospital transfer. Two PCPs described how much more comfortable they were "being honest" when they felt close to a family, had some sense of how the family viewed the situation, and what was important to them.

When you know [families] well, it's a trust that develops, so they know you, are comfortable with you . . . then it's so much easier to have that difficult conversation . . . like maybe the hospital is not the right choice now. Let them know some of the things that happen in the hospital. That conversation is much easier when you know them well. Physician (Low Transfer Site 2)

Significantly, PCPs in two of the GH homes with higher transfer rates denied any difference in relationships with GH families than with families in traditional settings, and they could not see any impact of the model on end-of-life care. They also saw no differences in care quality between the GH and traditional nursing homes.

DISCUSSION

The results of this study reveal consistency across GH homes in the implementation of a number of core GH elements and suggest that these elements create opportunities for communicating about, and responding early to, elder change in condition. However, there was significant variation in the degree to which GH staff leveraged these opportunities. GH homes with lower hospital transfer rates generally maximized opportunities, while those with higher transfer rates often failed to do so. Maximizing opportunities included strategies such as deliberately aligning schedules, valuing input of direct care staff, being accessible, restricting the number of PCPs, and interpreting empowerment as being part of and accountable to a care team. Collectively these strategies led to earlier communication about change in condition and, consequently, decreased time to treatment, potentially avoiding a hospital transfer. GH homes that failed to maximize these opportunities engaged in care processes that impeded timely communication, and collaborative treatment decisions, increasing the likelihood of transfer to hospital at the end of life.

Our findings about care processes are consistent with prior research. For example, prior studies have documented associations between hospital transfer rates, early identification of resident change in condition, closeness of relationships between PCP and families, and collaboration between direct care staff and PCPs.

This study extends prior work as well. First, while evidence suggests that the generally accepted core culture change values (person-centered care, a homelike environment, collaborative decision making, close relationships between residents and staff, and empowered direct care workers) improve quality of life, this study suggests that these same values are also implicated in quality of care (Koren 2010). For example, our study demonstrated how close relationships between staff and residents not only facilitated person-centered care but also led to early identification of resident changes in condition. The “homelike” environment also provided a structure that increased interactions

among providers and between providers and family members, creating opportunities for more effective communication, while a specific interpretation of empowerment led to collaborative decision making and facilitated early intervention.

This study also provides insight into the well-documented inconsistency in outcomes achieved through implementation of culture change programs by demonstrating how “the same” model was implemented inconsistently. This study provides some insights into the “how” of implementing culture change values, demonstrating the importance of better practical guidance. These findings have implications for both organizational-level replication and public policies, such as pay-for-performance reimbursement for nursing homes, which do not currently take into account variations in implementation.

Generalizability of findings to other culture change programs as well as to more traditional nursing home settings is an important consideration. Direct care staff empowerment is a core value of the national nursing home culture change movement, and it is a characteristic of many culture change models (Koren 2010; Bowers and Nolet 2011). However, the literature on culture change is relatively silent on the interpretation of empowerment. This study highlights the importance of clarifying what is meant by “empowered” to avoid negative clinical outcomes.

The role of PCPs has been largely unaddressed in the culture change literature. The variation in clinical outcomes that have been associated with different physician practice models demonstrates the importance of viewing culture change implementation in context, integrating, and building on practices that are not specifically associated with the culture change model but have been shown to be beneficial (Polniaszek, Walsh, and Wiener 2011; Shield et al. 2012; Miller et al. 2014).

Limitations

This study was limited by reliance on participant report. Direct observation would have provided validation of processes described and identification of processes not described by participants. The study would also have been strengthened by prolonged engagement in each site. Although specific methodological strategies used in grounded theory are designed to minimize researcher bias and preconceived notions from influencing analysis, researchers making the site visits had knowledge of which homes were high and low on hospital transfers. This introduced the possibility of researcher bias in the analysis.

CONCLUSION

The methodology used in this study is not designed to confirm causal relationships, in this instance, between care processes and hospitalizations. Its strength is the depth with which processes can be identified and understood and the insights that can be gained about how “the same” model can yield quite different outcomes. The results of our study provide context for how the interplay of these factors may influence hospitalizations. The ability to transfer care processes found to be effective in culture change homes to more traditional settings is a vital consideration, as resources needed to build homelike environments are limited. Further work testing the nature of the relationships between categories and causal links is needed, particularly using longitudinal designs. Also observational studies examining the details of individual transfers, distinguishing preventable from unavoidable or desirable hospital transfers, is vital.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.