Practice Concepts.

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Radical Redesign of Nursing Homes: Applying the Green House Concept in Tupelo, Mississippi

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Purpose: We present the concept of the Green House, articulated by William Thomas as a radically changed, "deinstitutionalized" nursing home well before its first implementation, and we describe and discuss implications from the first Green Houses in Tupelo, Mississippi. Design and Methods: Green Houses are small, selfcontained houses for 10 or fewer elders, each with private rooms and full bathrooms and sharing family-style communal space, including hearth, dining area, and full kitchen. Line staff at the level of certified nursing assistants, called *Shahbazim*, are "universal workers," who cook meals, do laundry, provide personal care, assist with habilitation, and promote the elders' quality of life. Nurses, doctors, and other professionals comprise a visiting clinical support team for the residents and Shahbazim. Multiple Green Houses comprise a nursing home, meeting all nursing facility regulations and working within state-reimbursement levels. In 2003, four Green Houses were built on the campus of a retirement

community; in June of that year, 40 residents relocated from the 140-bed nursing home to the Green Houses, including 20 residents previously living in the locked dementia unit. **Results:** Experiences to date are positive for residents, family, and staff. The sponsor is converting the entire facility to Green Houses, and other providers around the country plan to implement Green House variants. Implications: Because nursing home stock is aging, many physical plants are or soon will be slated for major rebuilding, thereby providing sponsors with an opportunity to consider Green Houses. Early experience suggests that Green Houses are feasible and that outcomes are likely to be positive, and it also suggests that there are some potential issues to overcome in such a dramatic reengineering of nursing homes.

Key Words: Deinstitutionalization, Design, Habilitation, Nursing facilities, Quality of life

A Green House is a purposely built residence, ordinarily for 10 or fewer elders needing nursinghome-level care. A group of Green Houses, either on a single campus or scattered throughout a neighborhood, holds a nursing facility license, meets all legal facility requirements, and provides care within Medicaidreimbursement rates. The Green House vision was articulated by William Thomas several years before the first Green House was opened. The model calls for transformed physical environments, radically revised staff configurations, and a philosophy that emphasizes

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habilitation and a good quality of life for residents under normal rather than therapeutic circumstances.

The Green House Concept

Although a nursing facility is often the last address for many people in the United States, moving to a facility is a dreaded event. Since 1970, there have been reports of inadequacies by consumer groups, government agencies, activists, journalists, and families. Despite intense regulation and substantial expense, adequate quality of care and quality of life are not consistently provided to the more than 2 million individuals who receive care in nursing facilities each year. In the 1980s, Thomas (1996) formulated and applied the principals of the Eden Alternative, an approach to combat the core problems of boredom, loneliness, and lack of meaning in nursing facilities and to promote human flourishing in these settings. This approach, superficially associated with pets and plants in facilities, calls for a realignment of power and energy to promote meaningful life for nursing home residents. More than 300 nursing facilities have acquired formal Eden training, but Eden nursing facilities often report difficulty in making permanent far-reaching changes that influence quality of life.

On the basis of a critical examination of the nursing facility literature, the practice field, and the broader social science, biological, and philosophical literature, William Thomas envisaged the Green House as a new model for care of frail older people who qualify functionally for nursing facility care and who cannot remain in their own homes or with their families (Thomas, 2003, 2004). Because a nursing facility is the only nationwide mechanism to meet the heavy care needs of lowincome older people, the Green House was planned to fit within regulatory and reimbursement criteria, although the model represents a radical transformation of the physical environment, the philosophy or culture of the setting, and the organization of the staff.

Physical Dimension

The Green House was intended to be a self-contained home for a small group of 7 to 10 elders. Drawing on the design concepts of *A Pattern Language* (Alexander, Silverstein, & Ishikawa, 1976), a Green House blends architecturally with other homes in its neighborhood and incorporates pattern symbols such as living room, hearth, family dining area, farmhouse kitchen, laundry area, porch, and easily accessible, inviting outdoor space. Long hallways and institutional furnishings are antithetical to the model. Elders must have private rooms with full bathrooms. To minimize the signposts of the medical model, call systems were to be wireless and connected to silent pagers, and nurses' stations, medication carts, or treatment carts were taboo.

The symbols and materials of home were joined with a vision for using technology to enable care and permit stimulating and meaningful experiences despite the elder's functional limitations. Each bedroom was equipped with a track for a ceiling lift to enable one person to move an elder from the bed to a wheelchair, or into the bathroom. A paperless record and state-ofthe-art methods for Green House staff to communicate with professional staff and outside experts were contemplated. The Green House was to embrace "smart house" technology and use a wide range of prosthetic, communication, and educational devices, including interactive television to bring remote family into video contact with elders.

Small size was intentional. Small living units have been associated with reduced anxiety and depression; increased mobility and self-care skills (Annerstedt, 1997; Skea & Lindesay, 1996); increased social interaction, communication, and friendship formation; and improved staff supervision (Cohen-Mansfield & Werner, 1998; McCracken & Fitzwater, 1989). Noninstitutional dining experiences have been associated with improved eating behavior in elders with dementia (Golestam, 1987). Also essential to the model was a self-contained house, rather than a collection of neighborhoods in a larger facility, where the temptation would quickly be to share cooking, dining, and line staff, and develop hierarchies.

Philosophical and Cultural Dimensions

The Green House situates necessary clinical care within a habilitative social model. Without abrogating responsibility for clinical outcomes related to health conditions, it gives primacy to quality-of-life outcomes such as those identified by Kane (2001), namely sense of security, physical comfort, enjoyment, meaningful activity, relationships, functional competence, dignity, privacy, individuality, autonomy, and spiritual wellbeing. The Green House rejected the idea that the elder's primary purpose is to live out the sick role with exemption from the usual daily expectations and obligations of life and reliance on a health care provider for all assistance (Lidtz, Fischer, & Arnold, 1992). The Green House concept took seriously the research on learned helplessness, or induced disability in nursing facilities, where residents perceive little control over their lives and environments (Avorn & Langer 1982; Langer & Rodin, 1976). This phenomenon leads to progressive loss of function and depression. In contrast, personal control is linked to positive psychological wellbeing (Lachman, Ziff, & Spiro, 1994; Rodin, Timko, & Harris, 1985; Thompson & Spacapan, 1991). The Green House concept seeks to reverse the loss of control that elders experience by emphasizing competence and participation in daily activities in the household.

To maximize the identification of and respect for resident choices, the Green House places decision making close to the elder. The household operates on no fixed schedule. Elders may have meals, receive personal care, sleep, rest, and engage in activities whenever they choose. The vision is that elders who are so inclined will participate with staff in household activities such as planning and preparing meals, gardening, caring for the household pets, cleaning, and doing laundry. Elders and caregiving staff are expected to engage in direct personal relationships. They eat together, talk together, make decisions together, and play together. The Green House concept was also envisaged with an open relationship to the larger community, in which a variety of visitors might engage with residents and staff in more informal ways than through formal volunteer programs.

Green House language has been deliberately altered to fit a social model in which the elder assistant is called a *Shahbaz* (plural *Shahbazim*), a constructed word with a built-in legend and none of the baggage of *nursing assistant*, a term incompatible with the model (see the Web site at http://www.thegreenhouseproject.com). Residents are *elders*, and the Green House administrator is a *guide*. A member of the larger community who develops a special enabling relationship with the Green House on a voluntary basis is a *sage*. Meals are not nutrition. Given the paramount importance of food and dining, the term *convivium* is used to refer to a dining experience that includes good food in good company and a pleasant environment.

Organizational Dimension

To combine the vision of the Green House with the licensing and credentials of a nursing facility, a group of Green Houses must be linked administratively to form a nursing facility of adequate scale. The model envisaged that existing nursing facilities, home care agencies, managed care organizations, or some newly formed group might all be sponsors. In the redesign of the nursing facility organization, the goal was to decrease levels of bureaucracy and to re-create the role of the direct care worker by providing a safe working environment, higher levels of training, improved salary and benefits, and more empowerment. The key operational unit is the self-contained Green House with its elders and its Shahbazim, although the larger sponsoring entity provides the Green House with various administrative functions of a nursing facility, such as accounting, billing, a medical record system, physical plant maintenance, and supply procurement.

The Shahbazim are certified nursing assistants (CNAs) who receive 120 hours of additional training and have a wider range of responsibilities. They were envisaged to cook, clean, do laundry, shop, give personal care, and act as a resource in the habilitation and overall quality of life of the elder. Shahbazim are not under the umbrella of nursing but are supervised by an administrator, known as a guide.

Each Green House is served by a clinical support team made up of all professionals required by regulation or typically found as nursing facility staff or consultants (e.g., nurses, medical director, social worker, activity personnel, dieticians, and therapists). This team performs care-planning functions, completes the Minimum Data Set (MDS), delivers clinical care, and acts as a resource to elders and Shahbazim. These professionals are not situated in the Green House, but they visit on a schedule dictated by the clinical assessment and treatment needs of the elder and regulatory compliance mandates. The support team members are expected to behave as guests in a private home. They collaborate with the Shahbazim, but they have no supervisory role except in treatment issues as required by regulation. The Shahbazim report to a guide rather than to a director of nurses or a charge nurse.

Expected Outcomes

The Green Houses were expected to result in measurably better quality of life, social involvement, and emotional well-being for residents, with no decline in health outcomes. One route to better outcomes for residents is through increased involvement and interaction with their family members, another hypothesized difference. Families also are expected to be less burdened and more satisfied. Compared with CNAs, Shahbazim are expected to know their residents better as people, to be more likely to perceive that they have the power to influence resident outcomes positively, and to be more engaged and satisfied with their work. Administrative outcomes should include less staff absenteeism, injury, and turnover. MDS-derived quality indicators should be no different or better than for traditional nursing facilities.

Making the Conceptual Dimensions Operational

Green Houses in Tupelo, Mississippi

In 2002, the National Green House Project was initiated with grant funds as a vehicle to provide technical assistance to potential implementers of Green Houses. Mississippi Methodist Senior Services (MMSS), headquartered in Tupelo, Mississippi, became the first organization to actually implement the model. MMSS operates 11 retirement campuses in Mississippi, each with independent housing and assisted living and, on 3 campuses, nursing facilities. The 140-bed nursing facility on the Tupelo campus became the first Green House. Prior to learning about the Green House, MMSS had planned major renovations for an outdated 140-bed nursing home plant at its flagship campus in Tupelo. MMSS had already raised funds and developed blueprints to replace the 20person dementia special care unit with a household model as the first step in redesign. Captivated by the Green House ideal, the corporate staff at MMSS switched in midstream and developed Green Houses instead.

The available funds permitted MMSS to open four Green Houses. The first 40 residents were drawn exclusively from the nursing facility residents or, in a few cases, assisted living residents who needed to enter a nursing facility, and they included all 20 residents of the special care unit slated for replacement. The remaining 20 residents were nursing facility residents who volunteered to move to a Green House after they and their families heard presentations about the concept. The goal of the project was to relocate elders who were typical nursing facility residents. The Green House elders were similar in disability to those who remained at the Tupelo campus Cedars nursing home. There were no statistically significant differences in gender, levels of activity of daily living (ADL), levels of behavior problems, or length of stay from admission. Transferred elders included individuals with clinically demanding care, such as dressing changes, wound care, gastric tube feedings, therapy needs, and complex medication routines (including those for insulin-dependent diabetics). One elder was admitted who was receiving end-of-life care.

The Physical Dimension

The architect worked with the Green House Project to design a Green House where all features were patterned after a home. The Green Houses were located at a distance from the nursing facility in what became a residential street on the campus. Each house was built with 10 elders' rooms around the periphery of the building. No elder's room was more than a few feet from the communal space. A generous front entryway led to the living room and hearth areas and the fully equipped country kitchen and dining area. A single large dining table accommodated all residents and Shahbazim as well as several guests. An additional smaller sitting area was provided in a screened in, all-weather porch. The legal requirement for a nurse's station was met by the presence of a study, which also served as a break room for staff. Patio and yard spaces were accessible from two parts of the building. A utility area housed the washer and dryer, a spa with Jacuzzi-style tub, and a hair salon (see Figure 1 for a diagram of the first Green Houses). The front door bell had to be rung for access.

Furnishings and decorations were residential in nature and chosen by elders, family, and staff, after systematic local observations of the kinds of furnishings that elders in the independent homes on campus and in the community tended to use. For example, because of the finding that most elders used lounge chairs with footstools and adjacent table space, couches were avoided in the communal space. Elders and their families were encouraged to provide their own furnishings for the bedrooms. Building costs were less than the cost of a new traditional nursing home building and less than comparable renovation costs within the existing building would have been.

The Philosophical and Cultural Dimension

These first Green Houses adopted most of the recommended Green House language: elder, guide, sage, Shahbazim. The sponsor and the Green House Project took pains to familiarize local organizations, state officials, and even legislators with the goals of the project to create broader community acceptance. In the 6 months before the Green Houses opened, selected and self-selected CNAs were trained intensively to be Shahbazim and work in the social model. During this phase, the decision was made that the Shahbazim in each house would organize in self-directed work teams, which would develop the schedules, rotate leadership roles, and work out operational problems (Yeatts & Seward, 2000). Shahbazim also received a wage increase to clarify their additional roles and augmented importance. The team was assisted by and responsible to the guide, who was meant to lead in a collaborative, coaching style. In her training and consultation, the Green House Project director modeled the kind of coaching leadership envisaged for the guide during that training period.

Organizational Dimension

The model defines the Shahbazim as universal workers, the guide as a coach with a collaborative

leadership style, and the clinical support team as visiting experts for clinical treatments. In the Tupelo example thus far, the Shahbazim retained the usual three shifts. Green Houses were staffed with two Shahbazim on days and evenings, and one at night. Thus far, a licensed nurse serves every two houses on all shifts.

In the training, a strong distinction between care and treatment was added to the mode to safeguard the distinction in roles between licensed staff and Shahbazim. Treatment was defined as the provision of competent, comprehensive therapeutic services, and care as helping another person to achieve the highest possibility of quality of life given his or her condition and impairments. Treatment is the province of the clinical support team and care the province of the Shahbazim. In practice, licensed nurses tended to assist Shahbazim with care tasks while in the house to perform treatments.

Early Experience and Implementation Challenges

The Green House complies with all federal and Mississippi State codes without waivers. Approval of the Green House plan by the state of Mississippi was achieved by an early review of each component of the model by the involved leader in the state health department. These meetings established a tone of partnership between the state and the facility. This process resulted in a high level of collaboration and ultimately a deficiency-free initial survey.

The houses were occupied at weekly intervals during a 1-month period. Strong efforts were made to engage family members in the planning, and families were intrinsic to the activities on the actual moving day. Although initially distinguished by the color of their exterior trim, the Green Houses were quickly named Laney House, Page House, Franks House, and Martin House after the oldest elder who first moved in. Guest books were used for visitors' comments. Some of the Shahbazim and families developed ceremonies to dedicate the House.

The model presented many challenges during implementation. The construction of the houses was monitored. A tendency to select institutional materials was noted (for doors, hardware, and the like), and the construction supervisor was directed to replace institutional products with residential ones to retain the residential integrity of the space. Future Green House projects will incorporate education of the project manager in the goal of creating a home. A preoccupancy evaluation of the space presented a concern regarding kitchen safety. Drawer locks were in place for sharp items and a gas stove had a safety valve that prevented the stove from being used without staff supervision, but the management of an emergency in the house during food preparation created the risk of unattended pots on the stove. A safety shield was designed and built that traps pots safely on the stove out of the reach of elders.

In general, the physical space worked well. Many elders stopped using wheelchairs because they were able to navigate the short distances in the house. Elders



Figure 1. Floor plan of first Green House. [Copyrighted by the McCarty Company, Tupelo, MS. Used with permission.]

and families report high levels of satisfaction with the privacy afforded by the private rooms. Elders are frequently outdoors, and when indoors they tend to cluster in the hearth room, at the kitchen table, or in the recliners in the living area. Families take advantage of the many areas for visiting and regularly stay for meals with the elders.

As a result of postoccupancy observations, some minor changes are planned. For instance, the utilities, such as the washer, dryer, and extra refrigerator, will be placed in a spot that is more convenient to the kitchen. The front door system requires modification to avoid an intrusive alarm, and roll-in showers will replace the European style. The implementation of the idea that elders bring their own furnishings was a challenge for this group of elders (who had moved from the nursing facility and had largely divested of personal effects). Nonetheless, many rooms have been considerably personalized through furniture and decor, hospital beds are rare, and some rooms even have larger than single beds. The use of assistive technology is thus far limited to the lifts, partly because of costs and partly because it is felt that experience in the houses was needed in order to determine what technology was necessary.

The implementers underestimated the professional staff's fears about residents' safety, and concerns about loss of power in this model. The organizational redesign met much resistance from licensed professionals. Nurses had major concerns about the new roles for CNAs, and initially too few volunteered to serve on the clinical support teams. Some new nurses were hired to fill the first posts. Professional staff members were encouraged to attend and observe the training sessions and in their own training were given opportunities to verbalize their concerns. Once professionals were engaged as partners in helping the model to succeed, the initial tensions abated. Shahbazim demonstrated that they were able to take responsibility for their new roles. New working relationships were forged, marked by a more mutually respectful attitude between nurses and unlicensed staff. Over time, many nurses, therapists, and physicians on the clinical support team have come to "own the model" and be enthusiastic proponents.

Staff absenteeism and turnover in the Green House is lower than that in the sponsoring nursing facility or other nursing facilities operated by MMSS, and no transfer-related injuries to workers have occurred. Most Shahbazim embrace the empowerment of their roles and visibly demonstrate increased skills, selfesteem, problem solving, and self-possession. The selfdirected work team was difficult to implement. Shahbazim training included teamwork communication skills and consensus building. During training the Shahbazim created a code of ethics, a set of rules they agreed to use in operating the household. The wellidentified stages of team formation (i.e., forming, storming, norming, and performing) were apparent. Each team progressed at its own rate and now performs efficiently and collaboratively. As this progression emerged, it was clear that insufficient education had been provided to leadership on the facilitation of team formation. Additional training is planned in future projects to remedy this issue.

Adjustments were made in the functions theoretically planned. The Shahbazim do cooking, housekeeping, laundry, and personal care as envisaged by the model, but housekeepers from the sponsoring nursing home do heavy cleaning twice a week, and bed linens are laundered centrally. Shahbazim largely order food from the central supply area rather than shopping at the supermarket. At the current staffing ratio, shopping is impractical for Shahbazim. Moreover, these first Green Houses are on a campus that requires a central kitchen for its assisted living and remaining nursing facility residents, so using the central purchasing provides obvious economies of scale. Additionally, grocery deliveries sometimes arrive with some of the preparation already accomplished, such as the separation of meat into serving cuts or the chopping of some vegetables, a modification compatible with the way busy households buy partially prepared foods in a supermarket. The initial menus tended to be similar in all four houses, though interspersed with individual variations to provide an elder's favorites or to arrange a barbecue or a celebration.

Elders moved to the Green House without any indications of transfer trauma. As the model dictates, the Shahbazim prepare meals in the residential kitchen in the presence of any elders who want to watch or help. Some elders have been particularly instrumental in teaching Shahbazim how to perform culinary tasks, including, in one case, how to make a cake from scratch. Also as envisaged, meals tend to be leisurely affairs with evidence of convivium. Residents were not held to fixed routines for rising or retiring, and meal times fluctuated with the life of the house.

The Green House successes were not achieved without struggle, and issues remain to be solved. The roles of the guide and of the clinical support team members proved difficult to develop. In part, this may be because of the challenge of detailing the entire model out of whole cloth, and the priority given to the need to develop the role and skills of Shahbazim. In addition, the implementers may have improperly assumed that the leadership of the nursing facility would "catch the vision," and invested insufficiently in the training of the professionals.

The financial considerations for construction costs and operational costs are being projected. Operational costs are difficult to estimate when the two models run simultaneously, but it appears that operating a Green House requires a redistribution of resources, rather than more resources. The National Green House Project has developed financial feasibility tools into which organizations can insert their own operational data to determine whether they can make the business case to move ahead.

Future Development

MMSS is more than satisfied with its initial experience. In less than 1 year after the four Green Houses were occupied, MMSS broke ground an additional six Houses, so that 114 elders will be housed in Green Houses. (Based on ideas about more efficient

operations, MMSS modified the design to develop 12-person Green Houses, which is inconsistent with the preference of the Green House Project but will allow for study of both the financial implications and outcomes related to the two sizes). MMSS is developing a small Green-House-style Medicare postacute care unit in the original nursing facility for its remaining licensed capacity. Once all admissions are from the outside, the competitive advantages of the Green House model will be able to be studied.

The preliminary exposure of the Green House idea to public scrutiny and comment led to intense public interest in the concept from local and national media and from potential adopters. At present, 20 organizations in 15 states are in various phases of developing Green Houses for all or part of their operation. This successful model of early collaboration with the state health departments has been repeated in several states where Green Houses are now being planned, including New York, Ohio, Arizona, Georgia, Nebraska, North Carolina, Florida, Michigan, Kansas, and Hawaii.

The Tupelo experience shows that it was possible to put a well-argued theoretical concept into practice and further refine its parameters without doing violence to its major principles. This accomplishment was assisted by many factors: a corporation that needed to rebuild; a chief executive officer and corporate staff committed to the vision and willing to persevere to test the model; technical assistance from the Green House Project; and foundation financial support that allowed for the technical assistance and research. The first implementation provided feedback to the Green House Project for further implementation.

A 2-year evaluative study with four waves of data collection at 6-month intervals is underway to study Green House outcomes, comparing the Green House elders, family, and Shahbazim to the residents, family, and CNAs at two comparison sites (i.e., the sponsoring nursing facility and a facility on an MMSS campus in a nearby town). Innumerable other quantitative and qualitative research projects in the Tupelo Green House and in new Green Houses have been suggested by the experience so far. The individual Houses seem to have their own personality, and the outcomes achieved in the dementia-specific Houses seem to differ from those in the general Green Houses. How to modify the model, how to integrate new staff or new elders into established Green Houses, how to maximize training, and even how an existing nursing facility might phase in Green Houses will all be illuminated by research.

Although surely not the only way to reengineer nursing facilities, the Green House is a viable way, and one that becomes practical for potential sponsors in certain circumstances. One ideal adopter would be an organization that has an aging building that must be replaced. Another would be a retirement community without a nursing facility that feels the need for a skilled level of care on its campus; an organization wanting a dementia-specific care unit is yet another. As the model evolves, the national Green House Project in concert with the actual Green House providers will identify essential features as opposed to those that may vary by project, and will determine the data elements needed to test and refine the model in relation to its expected outcomes.

The MDS is a given in the current nursing facility world, and the Green House must hold its own with MDS-derived quality indicators. Nevertheless, the Green House must measure and monitor quality indicators toward achieving its own goals for elders, family, and staff that go beyond outcomes tapped by the MDS. If the Green House is replicated sufficiently, another decade may see substantial numbers of officially sanctioned Green Houses, which interact in a consortium. Practices inspired by the Green House are likely to be diffused into all-group residential longterm-care settings (e.g., assisted living and other nursing facilities), somewhat the way hospice principles became diffused into all care for people at the end of life. Both developments-the formal Green House and the diffusion of the ideas-would be welcome and would justify the exercise of thinking grandly rather than incrementally at the outset.

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