

Implications

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Transforming Nursing Homes

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Nursing homes in the United States are in the throes of change. Their service emphasis has shifted to individualized, person-centered planning; empowerment of frontline staff so that they can empower residents; and maximizing each resident's individually defined quality of life, personal autonomy, and daily functioning. As nursing home stock wears out and is being replaced, many nursing home organizations are designing physical plants and interiors to support the new paradigm. Many state licensing authorities have shown remarkable openness to approving new designs through waivers or variances of regulation or through application of new outcome-based design standards.

This article sketches cutting edge trends in nursing home design in the United States illustrated via nursing homes around the United States. Particular attention is given to examples of small-house nursing homes, which constitute one (though not the only) approach directed at transforming licensed and certified nursing homes into genuine homes.

Essence of the Change **Traditional Nursing Homes**

For decades traditional nursing homes in the United States have been organized

into nursing units of approximately 40 residents, each in shared rooms along double-loaded corridors. A large nursing station, situated for easy eye contact in all directions tended to dominate the area. Hospital-like light and control fixtures were affixed to the walls behind residents' beds. Communal bathing and shower areas were centralized in the units. Each nursing unit tended to have a "day room," often at the far end. Large dining and activity spaces were part of the central core, serving residents of all units in facilities of 100-200 residents. Commercial kitchens, laundries, and other staging areas were off-limits to residents and their families. For decades, this model has held with small variations.

In the last 20 years, aquariums, aviaries, and potted or artificial plants have been added to the mix in a bid to make the settings more appealing, and some differentiation has occurred to create specialized care units (SCUs) for people with Alzheimer's disease, people using ventilators, or people needing intensive physical rehabilitation. But the basic sterile, amenity-poor, one-size-fits-all model, the sparseness of individual spaces, and the large institutional nature of shared spaces remained largely unchanged. Besides cost considerations, regulatory constraints that emphasize infection control and smooth delivery of care to very sick people are



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often blamed for consigning older people to living in an institution. (See the appendix for a description of NHRegsPlus, a Web site for analyzing and comparing state nursing-home regulations.)

Conceptual Model for Transformed Nursing Homes

First and foremost, the new nursing homes are increasingly designed as places for residents to live out their lives rather than places largely organized for efficient and safe service delivery. Open residential kitchens accessible to residents, gas fireplaces, short-order breakfast stations, washing machines and dryers in ready reach of residents and their family members, inviting porches and patios, sitting areas where residents and care staff can mingle—these are all hallmarks of the new approaches.

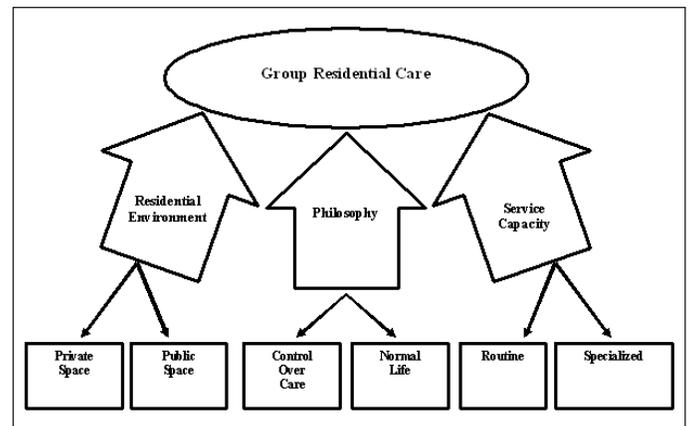
Designers are now freed up to think imaginatively about creating places that their parents and grandparents might consider a real home. Simultaneously, designers are also challenged to build in all that is necessary in a setting that serves people who are ill and functionally limited, where medications must be managed, linens stored, infections controlled, IVs hung, and care staff summoned. This means identifying ways that residents' functioning can be enhanced by technology (e.g., lifts, computer technology, communication technology, newly designed showers and tubs), and mitigating the negative impact of older technologies (e.g., call lights, paging systems, Musak, and the like).

Several forces have combined to stimulate these reforms. First, assisted living settings that emerged in private markets have been designed as normal dwelling spaces—not merely “homelike,” but as homes—and consumers overwhelmingly prefer those options. Nursing homes, some of which also operate assisted living settings, need to compete for a dwindling market as consumers have increased care options.

Second, a new emphasis on individualized, person-centered care has taken hold, partly because of the grass roots efforts of the Pioneer Network in Long-Term Care established in 1995.

In addition, the Centers for Medicaid and Medicare Services has an initiative underway to support culture change and transformation in nursing homes through its network of Quality Improvement Organizations. Quality of care is still a major concern but is no longer an acceptable excuse for regimentation and diminished lifestyles. Quality of life in nursing homes has been operationalized to include outcomes such as comfort, security, meaningful activity, relationships, autonomy, individuality, privacy, dignity, functional capacity (i.e., being as independent as one wants to be and is capable of being), and even spiritual well-being (Kane et al., 2003).

Environmental analogues have been identified for each of these domains, and researchers are working to refine conceptual scales to measure important properties in physical environments such as privacy, function-enhancing features, life-enriching features, and features that afford residents control over elements of their environment (Cutler et al., 2006). Finally, the assisted living field generated the model of a 3-legged stool for residential, long-term care with requirements to generate truly residential liv-



Residential long-term care 3-legged stool model.

ing spaces in the private and shared space, a service capacity for routine and specialized services, and a philosophy that supports resident choice and control over the details of their care and their daily lives (Wilson, in press).

Trends

The hallmark of recent reforms is the creation of residential spaces for each resident's personal room and bathroom and for the spaces that multiple residents use in common. To realize these reforms designers might:

- **Divide the larger nursing home into smaller households** serving a dozen or so residents. In some models, each household has a residential kitchen and dining area, whereas in others, dining occurs in neighborhoods of contiguous households. Kitchens are also used variously, some only for occasional baking, some for systematic preparation of desserts, and some as a serving station for centrally prepared food, storage of leftovers, and washing of the china and cutlery that are retained in each kitchen. Some of these transformations have occurred in large nursing homes. Famously, Fairport Baptist Health Care in Fairport, New York renovated its traditional nursing home “from hallways to households,” one area at a time while the building was still occupied. Ultimately the large dining room became superfluous and was transformed into a chapel that was easily accessible from each household.
- **Transform nursing stations.** Decentralization into smaller households requires space only for a computer and a few charts, and the state-of-the-art designs serve to encourage interaction among staff and residents. The transformed nursing station is no longer a place of refuge where staff congregates behind a high counter. Satellite nursing stations can be incorporated into a kitchen counter and shelf or a roll top desk. In the case at Perham Memorial, a nursing home associated with a small hospital in rural Minnesota, the station was accommo-

dated into wall cabinets. In a larger nursing home, Eventide in Moorhead, Minnesota, nursing stations resemble concierge desks where residents have easy access.



Transformed nursing station in Perham Memorial.

- **Create living rooms, dining rooms, and sitting areas built according to residential scale.** The large dining room that seats an entire population at a sitting is becoming a dinosaur. Some homes are designed with multiple options for dining—including cafes and restaurants.
- **Increase private rooms and private full bathrooms, and pay more attention to the room environment.** Research evidence is overwhelming about resident and family preferences for private rooms (Kane, Baker, Salmon, & Veazie, 1998). Also, a case is being made that in new construction private amenities are not unduly expensive and may be less expensive to operate than a facility of shared rooms (Calkins & Cassella, 2007).
- **Render shared rooms almost like private rooms.** In one setting, the door from the corridor opens into a vestibule area containing the shared bathroom and storage space, whereas floor-to-ceiling walls divide the two halves of the room into separate entities. Each half has its own temperature controls, windows, and personalized decoration independent of the “roommate.” Variations on this design are found at St. Ann’s Home in Jersey City, New Jersey and at Menorah Manor in St. Petersburg, Florida. In another example, at Catholic Elder Care in Minneapolis, Minnesota, the door from the corridor opens into a wide central hallway with a bathroom at the far end. The individual spaces, each with a window, are at either side with a heavy curtain

or sliding door separating the entire space from the internal corridor and the roommate's space. Residents can choose whether and when to close off their own rooms. An added bonus is that two related residents may take the entire suite and turn one section into a bedroom (perhaps with queen bed) and the other side into a sitting room. Within the bedrooms much more attention is being given to disability-friendly, levers, closet rod heights, and light switches, not to mention adaptation of the heights of mirrors and storage space in bathrooms. Some bedrooms are designed with horizontal surfaces for resident projects or games; if space is an issue, such surfaces can be made retractable.

- **Design inviting public spaces for living, congregating, and solo and group activity.** At one time the word “amenity” was avoided in nursing homes lest state governments be accused of pampering people funded by Medicaid. Now, although far from the norm, we more frequently find nursing homes with inviting outdoor gardens, enclosed porches, “main streets” with shops and restaurants, pleasant meditation or chapel areas, well-designed and equipped libraries and computer areas. Much improved spas now replace the characteristically drab, dank, and unadorned institutional shower and tub rooms. At the skilled nursing home in the Evergreen Retirement Community in Oshkosh, Wisconsin, 80 residents live in two neighborhoods, Creekview North and Creekview South, which together are comprised of eight households. The design envisages concentric circles of activity, in the



Spa with fireplace, Evergreen Retirement Community, Oshkosh, WI

household, the neighborhood, and the entire campus. Exemplary spas contain fireplaces and vanity tables for personal grooming; an attractive toilet room is included with its own door. The entire campus of the same retirement setting has a gymnasium and a full-size swimming pool staffed by a lifeguard/attendant. The pool is more heavily used by nursing home residents than skeptics had expected.

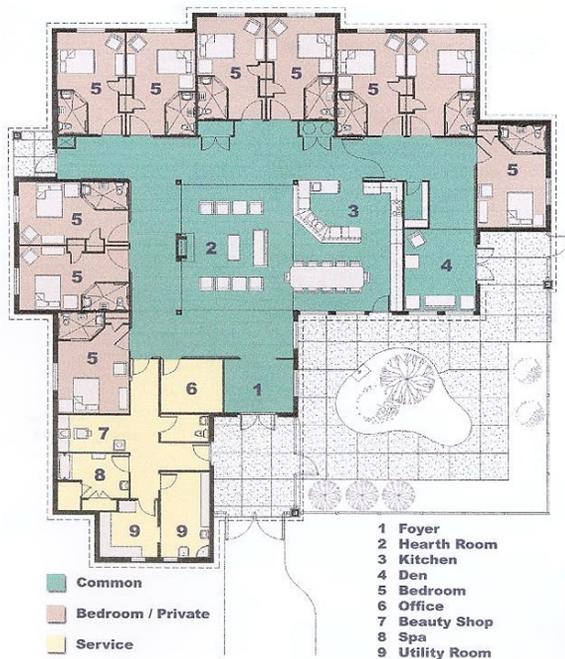
- **Use a hotel-model space for rehabilitation and post-hospital care.** Nursing homes are increasingly competing for the higher Medicare reimbursement rates for post-acute care, short-stay residents to help the financial bottom line. Although such residents do not want to be bored in the long interims between therapy sessions, they are not eager to see the nursing-home as their own or to participate in planned activities. Nor does a stay measured in weeks or at the most a few months allow time to order televisions and telephones. The operative model here is a hotel rather than a residence with a full range of amenities and conveniences such as phone jacks, television cables, microwaves, and refrigerators. The ability to entertain visitors, eat and serve food in one's room, and be comfortable while recuperating or resting from rehabilitation are all part of a desirable setting. To illustrate, Episcopal Church Home of Saint Paul is creating its own “brand” for its rehabilitation “guests,” complete with logo, stationary, coffee mugs and monogrammed bathrobes the residents can take home. Microwaves, coffee makers, refrigerators, and sinks have become commonplace in successful rehab units.

Small-House Nursing Homes and Green Houses®

In one transformational extreme, each household is in fact a fully independent small-house for approximately 10 residents. Meals are cooked in each small house, and residents have access to kitchen and personal laundry areas; they can watch food being delivered, smell the cooking, and assist with meal preparation and cleanup if they wish. One or two

small-house nursing homes may be incorporated into a campus and be subsumed under the license of a larger nursing home, or the entire nursing home may be comprised of small houses. Green House is a trade-marked model of a small-house nursing home conceived by William Thomas, a geriatrician (Rabig et al., 2006), and piloted in Tupelo, Mississippi, where

FLOOR PLAN TRACEWAY GREEN HOUSE



© McCarty Company, Tupelo Mississippi

the first four Green Houses were evaluated and found to be associated with improved quality of life for residents (Kane et al., 2007). The model is now being expanded and adapted under the auspices of the Green House Rapid Replication Project, funded by the Robert Wood Johnson Foundation. Designs strive to eliminate anything one would not have in one's own home; promote both individual goals and life-styles of each resident; and provide opportunities for social interaction, among residents and staff, and residents and their own family members. The basic design of the first Green Houses in Tupelo provide a template for how a home might be organized in even

the most heavy-care facility. The design includes a foyer, living room with a hearth, open kitchen with a large dining area, sunroom den, study (which serves as an office), beauty shop, spa and utility room, and private bedrooms and full bathrooms with showers around the periphery. The keys to the design are the small size and the private spaces surrounding the central shared spaces. A private room creates opportunities for individual life, control, creativity, enjoyment, social interaction, productivity and the potential for uninterrupted sleep. But these functions can occur only if the environment is designed to be supportive of the activities. Each room is equipped with an overhead track system continuing into the bathroom, facilitating single person transfers and allowing for one staff person at night (see photo on page 1 for example). Traditionally, most furniture arrangements in resident rooms were dictated by the ever present, fixed, over-the-bed wall light which was commonly and erroneously thought to be required by regulation. In fact, the federal nursing home regulation (F-256) only requires adequate and comfortable lighting levels in all areas. The Tupelo Green House bedrooms do not have wall fixtures; instead overhead lighting is provided along with table lamps and ample natural light from the large windows.

A locked medicine storage cabinet is installed in each



Avalon at Perrysburgh, Medication storage area.

resident's room to alleviate dependency on medicine (med) carts and med storage rooms. With each subsequent Green House and small-house design, we see variations on this practical scheme. Shown here is the med storage area in the rooms in the small-houses at the Avalon by Otterbein neighborhoods just opened in Perrysburgh, Ohio. The bottom sections folds down

to serve as a flat work space and a light inside the cabinet alleviates the need to turn on the overhead light for night med passes. Medications requiring refrigeration are stored in the office.

Creating Community

Gone are the days when the lounge consisted of chairs lined up in a row, often across from the nursing station with a television blaring. Instead, small residential spaces with ample floor electrical outlets provide a space that is adaptable to many activities ensuring that residents using IVs are not limited to their bed-



Hearth room, Green House, Tupelo, MS

room space or to a station at the wall near an electrical unit. Also, technology has created realistic fireplaces that are cool to the touch yet warm to the spirit. In the Green House, dining occurs at a long communal table in view of the kitchen—plenty of spaces are available for staff and guests to join in. The movement towards culture change includes



Communal dining area, Green House Tupelo, MS

might be hungry.

As small-house nursing homes increase in numbers, some variations in design are occurring, with more

on the horizon as models are adapted to high density urban living. In the examples that have been built thus far, the foot print is that of a house that could fit



Garfield House, Village of Redford

into any residential area. Indeed some Green Houses are located on ordinary residential streets, as is seen in the illustration of Garfield House at the Village of Redford, a Green House operated by Michigan Presbyterian Retirement Villages.

Future Challenges

Undoubtedly, a creative phase of nursing home design is underway. Some of the innovations are already present in many European care settings, though the latter tend to have less disabled clientele than are found in nursing homes in the United States. With new solutions come new problems and challenges. Designers are grappling with issues about how to balance the investment in shared spaces versus those in private spaces (e.g., some small households contain bedrooms with microwaves and refrigerators, even though an accessible residential kitchen is a few feet away). Much more tinkering with bedroom designs is needed to try to incorporate a reasonably sized closet, an area wherein most nursing homes still fall short. Technology needs to be incorporated without creating a hospital-like appearance. Ample and convenient storage is needed, including places for wheelchairs and walkers to be placed conveniently to the individual, without clutter. Staff convenience is now properly being viewed as secondary to resident quality of life, yet staff need ready access to their own job materials (from linens to incontinence pads to the paraphernalia of medications) so that they can more quickly

serve residents. Settings need to meet the needs of heterogeneous groups of residents who vary in their health conditions, mobility, cognitive abilities, interests and preferences.

Many years ago, Elaine Brody referred to nursing homes as comprised of Procrustean beds, after the mythic innkeeper who stretched or chopped his guests so that they fit his single-size bed (Brody, 1973). In contrast, today's design challenges relate to how to make nursing home spaces welcoming and adaptable to a wide variety of people who live in them.

About the Authors

Lois J. Cutler, Ph.D., is a Research Associate of Health Policy and Management at the School of Public Health, University of Minnesota. Her research focuses on examining how long-term care environments are used by residents, family, staff and visitors. She has conducted extensive post-occupancy evaluations of the Green Houses of Tupelo, Mississippi.



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Appendix NHRegsPlus

NHRegsPlus is a searchable Web site of state and federal regulations related to nursing homes. The authors developed it at the University of Minnesota, beginning in 2005 with initial funding from the Hulda B. and Maurice L. Rothschild Foundation in Chicago (see <http://www.hpm.umn.edu/NHRegsPlus>). The site uploads and compares state regulations to each other and to federal regulations according to more than 70 topics, many of which refer specifically to rules for physical environments and their uses. Other topics analyzed have implications for physical environments, such as facets of dining and food management, infection control, activities, and quality of care. New construction rules and policies for waivers or variances are also described.

The Web site is meant to serve as a tool to guide research and conceptualization on the kind of regulations that might best promote residents' quality of life, individualization of their care and routines, and resident's personal autonomy. For example, in September 2007, the authors were awarded a small grant from the American Institute of Architecture's (AIA) Guidelines Committee to help inform the 2010 revision of standards for nursing homes by describing state variation in rules related to the physical environment and comparing state regulations to the current AIA guidelines. In the next year, the Web site developers are creating an "art of the possible" section, cross-referenced by state and by topic that will describe innovative practices that promote resident quality of life and autonomy in nursing homes—goals that have been accomplished within the current regulatory structure.

Related Research Summaries

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"Care Home Layout Affects Elderly Residents"
—*Environment and Behavior*

"Assisted Living Facilities as 'Home'"
—*Journal of Housing for the Elderly*

"Assessing the Quality of Life in Nursing Homes"
—*Ageing and Society*

"Aesthetics of 'Homelike' Geriatric Facilities"
—*Housing, Theory, and Society*

"Designing for Nursing Home Patients with Dementia"
—*Journal of Gerontology: Psychological Sciences*

"Influencing Social Interaction Among Nursing Home Residents"
—*Journal of Interior Design*

Photos Courtesy of:

Nelson-Tremain Architects (p. 4)

Richard McCarty Architect: Green House plan (p. 5)

Jude Rabig (p. 5)

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